Coursera: Google project management

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- Project management is for people that are organized, action oriented, diligent, and strategic.
- **What exactly is project management?**
  Project management is the application of knowledge, skills, tools, and techniques to meet the project requirements and achieve the desired outcome.
- **This program includes six industry-relevant courses that focus on topics like**
  a. project management fundamentals;
  b. goals, objectives, and deliverables;
  c. risk management;
  d. team dynamics;
  e. project management methodologies;
  f. data-driven decision making; and more.
- **Six courses:**
  1. Fundamentals of project management
  2. Project initiation: Starting a successful project
  3. Project planning: putting it all together
  4. Project execution: running the project
  5. Agile project management
  6. Capstone: applying project management in the real world.

Course 1 : fundamentals of project management – May 1

Module 1

- **objectives**
  - Which types of jobs are suitable for you
  - Define key project management terms
  - Define roles and responsibilities
  - Define types of job you can pursue after completing this program
  - Define project and project manager
  - Define project life cycle
  - Describe organizational structures and cultures
- Def of project: A unique endeavor, usually includes a set of deliverables. It is temporary, with a defined beginning and end. In short, it is a series of tasks to reach the desired outcome.
- Project management is the application of knowledge, skills, tools, and techniques to meet the project requirements and achieve the desired outcome.
- Program managers: managing multiple projects for a specific product.

Module 2

How project managers add value

- project managers task: Project managers usually follow a process that involves
  - planning and organizing, (gathering requirements, defining the tasks, setting the tone of the team)
  - managing tasks, (tracks the progress and communicate milestones to other teams)
  - budgeting, controlling costs and other factors.
- Project management roles are available in different industries: construction prog managers, IT prog m, Eng prog. M.
- Project managers shepherd projects from start to finish and serve as guides for their team, using their impeccable organizational and interpersonal skills every step of the way.
- Project managers add value to their teams and organizations in key ways that include prioritization, delegation, and effective communication.
- Project managers add value to their teams and organizations through effective prioritization of tasks required to complete a project. They're experts at helping team members identify and break down large tasks into smaller steps. There'll be times when a project manager may not know which task to prioritize.
- Stakeholders are people who are interested in and affected by the project's completion and success, like the leader of an organization.
- Project managers use delegation to add value to their teams and organizations by matching tasks to individuals who can best complete the work.
- Project managers deliver value through effective communication, both with their team and with key stakeholders. This refers to being transparent, which means being up front with plans and ideas and making information readily available.
- In project management, the word “customer” refers to a person or an organization that defines the requirements of the project and sets important guidelines, such as budget and deadlines. In projects, customers can be internal or external.
- The team is a project’s biggest asset. A successful project manager knows that and takes the time to understand each person’s motivations, strengths, and weaknesses. Project managers add value to the project by identifying the right team for the project and enabling the team to be successful and make decisions.
- Sometimes, when you ask why something is being done a certain way, the response you get is, “Because we’ve always done it this way.” A project manager adds value to a project when they break down barriers, allow their team to innovate new ways to do things, and empower them to share ideas. As a project manager, you have to model ingenuity and collaboration, and encourage your team to do the same.

project managers roles and responsibilities

- Project managers usually follow a process that involves
  - planning and organizing,
  - managing tasks,
  - budgeting, and controlling costs, and other factors,
- Examples:
  - Planning and organizing:
    - Make use of productivity tools and create processes
    - Create plans, timelines, schedules, and other forms of documentations to track project completion

    - Managing task: A project task is an activity that needs to be accomplished within a set period of time by you, your team, or your stakeholders.
    - budgeting, and controlling costs, and other factors,
        - Monitor and manage the budget
        - Track issues and risks
        - Manage quality
        - Remove unforeseen barriers (resources,).
- As a project manager you need to have **interpersonal skills. Interpersonal skills** are the behaviors you use to interact with others, such as communication, active listening, and leadership.
- Very important- Responsibilities of a project manager:
    - **Teaching and mentoring:** Take the time and talk to people.
    - **Building relationships**: care about people and ask about their lives, and check on that later. + Pay attention to the insights they offer you about their work style since their actions can inform how to most effectively interact with them.
    - **Controlling Change**: remain flexible and adjust to the stakeholders' needs. However, it is also important to protect your team from constant change and rework. A good way to do this is by documenting the initial expectations of the project and clearly identifying the changes being requested.
    - **Empowering your team**: Giving your team the ability to work directly with the stakeholders and their teams lets them know that you trust and believe in their skills. One of the best things about empowering your team is getting fresh ideas and passionate employees willing to help find solutions to problems. Another way you can empower your team is by delegating responsibilities to them, allowing them to make some decisions for the project, and using their input in the planning and execution of the project.
    - **Communicating status and concerns**: The project manager sets the tone for the project. Maintaining an open door policy and building trust within your team and among stakeholders
- A project manager is not often the direct manager of the people working on a project team. A project manager manages the tasks of a team. Each person is the expert on their portion of the project, but no one will be an expert on every aspect of the project.
- To manage tasks of a project:
    - Hold all team members accountable for their assigned tasks.
    - Ensure that issues and risks are tracked and visible and establish escalation paths.
    - Understand and help teammates to adopt the right workflows and project management styles.
    - Collaborate with other tema at the organization to deliver solutions that meet the requirements based on project scope, schedule, and budget.
- The team is cross-functional with different backgrounds, and expertise. To manage a cross-functional team:
    - **Clarify goals**: each member of the team should understand their role. Be direct and concise. Avoid lots of details and explanations, just define the key items (deadlines, quality requirements, or resources.
    - **Get members with the right skills**:
    - **Measure progress**: Showing your team how much they have accomplished helps keep them motivated. You can measure progress in many ways, including meeting key milestones, completing project tasks, and meeting project goals on time and within budget. Regularly communicate with your team members to check on their progress. Ask them if they anticipate being finished on time.
    - **Recognize efforts**: , when you work with cross-functional teams, there are certain skills that get recognized more than others. As a project manager, it is your job to make sure that each member of your cross-functional team recognizes the value of their efforts each step of the way. Learning what makes your team members feel supported, giving and taking feedback, and being mindful of each individual's background, personal identifiers, and work style can help mediate some of the differences among team members.

Acquiring the core skills of successful project managers

- Skills for successful project management
    - **Enabling decision making**: You'll ensure that projects stay on schedule by gathering information from teammates and using those insights to help the team make informed decisions. when you allow team members to have a voice in decisions, it helps foster an environment of responsibility, accountability, and team closeness. You'll also make sure that those decisions are communicated to the necessary coworkers, whether that's the immediate team or company leaders.
    - **Communicating and escalating**: clearly communicate goals and expectations. documenting plans, sending emails about the status of the project, or holding a meeting to escalate risks or issues to stakeholders. When escalation is required, try to approach management with both the problem and the potential solution or suggestions.
    - **Flexibility**: plan changes (goals of the project may change, a member may leave). **Stay cool under the pressure.** Change is inevitable, and the more flexible you are as a project manager, the more successful you will be throughout your career. To be flexible
        - Assess external constrains, such as holidays, and vacations.
        - Plan for risks and challenges: someone leaves,
        - Calculate float in your schedule: Float, or slack, refers to the amount of time you can wait to begin a task before it impacts the project schedule and threatens the project outcome.
    - **Strong organizational skills**: having the ability to organize these processes and the core elements of a project to ensure nothing gets lost or overlooked. you might decide to track daily tasks in a spreadsheet or send frequent status updates or reminders. Use organizational tools:
        - Planning and scheduling software (templates, workflows, calendars)
        - Collaboration tools (email, collaboration software, dashboards)
        - Documentation (files, plans, spreadsheets)
        - Quality assurance tools (evaluations, productivity trackers, reports)
- Handling ambiguity
    - **Keep calm.**
    - **Express empathy**. As a project manager, it is important to try to understand what your team is thinking and feeling, especially during times of ambiguity.
    - **Communicate what you know clearly**.
    - **Make decisions and stick to them**. Try not to second-guess your decisions in front of your team since this can lead to greater uncertainty.
    - **Trust the expertise of your team**.
- Building relationships with teammate and stakeholders

- It requires interpersonal skills. Possessing strong interpersonal skills helps to communicate with the teammate to understand their needs and concerns.
- This is called influencing without authority: A project manager's ability to guide teammates to complete their assigned work without acting as their direct managers.
- Key interpersonal skill that helps with to accomplish this and guide the team (without the authority of being their direct manager):
  - Communication (checking with the team to see how they accomplish a task, get progress),
  - Negotiations, (compromise with the deadline)- You need to balance their needs and what is the best for the project.
  - Conflict mediation:
  - Understanding motivations: This means getting to know your teammates and figuring out what pushes them to do their best work. Understanding motivations might also include learning how your teammates prefer to receive feedback, and how they like to receive recognition for doing a great job. You would use that individualized information to motivate and encourage each person on your team

Module 3

Understanding the project life cycle

- There are many different ways to manage a project. Many things can impact a project, it is important to understand its basic structure or project life cycle.
- Most project life cycles have four major phases, each with their own set of tasks and concerns.
  - Initiate project: launchpad of the project, define goals and deliverables. Identify resources, budget, people, and any other detail that can impact the successful part of the project. Document everything in one place.
  - Make a plan: Creating a plan is 100% essential, timeline, budget, communication, plan for changes, and resources
  - Execute and complete tasks:
  - Close the project: celebrate the work, review the process, what worked good and not, and learn to plan better for the next time.
    - Some projects have firm deadlines, other projects have different finish lines.

Analyzing the different project phase

- Initiate the project: organize all info,
  - define project goals, stakeholders, customer's goals, measurable objectives
  - Determine resources, people, and other project details (vendor, software, physical space). Basically, anything you need to complete a project is a resource.
  - Get project approval
- Make a plan
  - Create a budget
  - Set the schedule
  - Establish your team
  - Determine roles and responsibilities
  - Plan for risk and change
  - Establish communication (each teammate knows what their tasks and know how to deal with problems + communicate the plan with others who have interest in your project success)
- Execute & complete the tasks
  - Manage the progress as a whole (make sure everyone understands tasks, and the goals, and the deadlines, Break down any barriers that would slow or stop the team from completing tasks.)
  - Communicate (Remove any obstacles, alert people if there is any delay), don't over communicate.
  - Make adjustments (schedule, budget, and allocation of resource)-communicate again with stakeholders.
- Close the project (This is after all goals achieved)
  - Ensure all tasks have been completed (any outstanding invoices have been paid, resources are returned and accounted for, and project documentation has been submitted)
  - Confirm acceptance of the project outcome (crucial to the project success)
  - Reflect on lessons learned (This reflection is usually called a retrospective, and it's a chance to note best practices and learn how to manage your project more effectively next time, even if everything went great.) The notes from your retrospective are also valuable to the people or organization receiving the end result of the project. That's because they can use that information to inform decisions about their business the next time they consider a project.
  - Communicate the results with stakeholders (people who are interested in, and affected by the project success.)
  - Celebrate completing the project
  - Formally move on from the project so that you can pursue other projects.

Project management methodologies

- Different types of projects will benefit from different types of approaches.
- Project management methodology: a set of guiding principles and processes for owning a project though its life cycle
- Two major types:
  - Linear: previous phase or task has to be completed before the next can start (building the house). They don't require many changes during the development and have a clear sequential process.
  - Iterative, some of the phases and tasks will overlap or happen at the same time that other tasks are being worked on (film making). allow for more flexibility and anticipate changes. You're able to test out parts of the project to make sure they work before the final result is delivered, and you can deliver parts of the project as they are completed, rather than waiting for the entire project to be done.
- Two popular PM methodologies
  - Waterfall: sequential order of phases. It has a linear approach. This is like a factory. There are many styles of waterfalls. We use this approach when phases are well defined and tasks are sequential. There should be no change in the goal. It is good fro projects that changes are expensive to implement once the project starts.
  - Agile:
    - Move quickly and easily
    - Willing to change and adapt
    - Done in pieces (iterative)
    - Good for faster delivery like software.
    - Project phases overlap and tasks are completed in iterations, which in scrum are called SPRINTs.
    - Agile is a mindset, rather than series of steps to complete. Collaborative work, that seeks feedback from the client to deliver as fast as possible, and adjust changes.
    - The method is good for projects where the client has an idea of what they want, with no concrete picture in mind.
    - Level of high uncertainty and risk involved with the project.
    - Example: building a website.
- **Waterfall and Agile Comparison**

	Waterfall	Agile
Project manager's role	Project manager serves as an active leader by prioritizing and assigning tasks to team members.	Scrum Master acts primarily as a facilitator, removing any barriers the team faces. Team shares more responsibility in managing their own work.
Scope	Project deliverables and plans are well-established and documented in the early stages of initiating and planning. Changes go through a formal change request process.	Planning happens in shorter iterations and focuses on delivering value quickly. Subsequent iterations are adjusted in response to feedback or unforeseen issues.
Schedule	Follows a mostly linear path through the initiating, planning, executing, and closing phases of the project.	Time is organized into phases called Sprints. Each Sprint has a defined duration, with a set list of deliverables planned at the start of the Sprint.
Cost	Costs are kept under control by careful estimation up front and close monitoring throughout the life cycle of the project.	Costs and schedule could change with each iteration.
Quality	Project manager makes plans and clearly defines criteria to measure quality at the beginning of the project.	Team solicits ongoing stakeholder input and user feedback by testing products in the field and regularly implementing improvements.
Communication	Project manager continually communicates progress toward milestones and other key indicators to stakeholders, ensuring that the project is on track to meet the customer's expectations.	Team is customer-focused, with consistent communication between users and the project team.
Stakeholders	Project manager continually manages and monitors stakeholder engagement to ensure the project is on track.	Team frequently provides deliverables to stakeholders throughout the project. Progress toward milestones is dependent upon stakeholder feedback.

- Lean Six Sigma is another methodology: it is a mix of LEAN and SIX SIGMA methods.
- The main principle in Lean methodology is the removal of waste within an operation. Today, the Lean Manufacturing methodology recognizes eight types of waste within an operation: defects, excess processing, overproduction, waiting, inventory, transportation, motion, and non-utilized talent. Implement Lean project management when you want to use limited resources, reduce waste, and streamline processes to gain maximum benefits.
- The final concept of Lean uses a **Kanban** scheduling system to manage production. The Kanban scheduling system, or Kanban board, is a visualization tool that enables you to optimize the flow of your team's work. It gives the team a visual display to identify what needs to be done and when. The Kanban board uses cards that are moved from left to right to show progress and help your team coordinate the work.
- **Six Sigma** is a methodology used to reduce variations by ensuring that quality processes are followed every time. The term "Six Sigma" originates from statistics and generally means that items or processes should have 99.9996% quality.
- After both Lean and Six Sigma were put into practice, it was discovered that the two methodologies could be combined to increase benefits. The tools used in Lean, such as Kanban boards and 5S, build quality in processes from the beginning. Products developed using Lean methods are then inspected or tested using Six Sigma standards.
- There are five phases in Lean Six Sigma (DMAIC):
  - Define: goals and find what it takes to reach these goals. This equivalent to the "initiate a project". This phase tells you what to measure.
  - Measure: how the current process performing. It focuses on data, and finds where the problems are. You collect data and measure the process accordingly to find the issue. This phase tells you what to analyze.
  - Analyse: Identify gaps and issues. For example, you find staffing in not adequate. Tells you what to improve
  - Improve: present your findings and get ready to start making improvements. Tells you what to control.
  - Control: is all about learning from the work you did up front to put new processes and documentation in place.
- The project management is can be a mix of these methods. For example, using agile for the big picture tasks, but waterfall for each individual tasks.

Summary: **Popular project management approaches**

Below is a brief recap of some of the project management approaches you've been introduced to so far:

Waterfall is a traditional methodology in which tasks and phases are completed in a linear, sequential manner, and each stage of the project must be completed before the next begins. The project manager is responsible for prioritizing and assigning tasks to team members. In Waterfall, the criteria used to measure quality is clearly defined at the beginning of the project.

Agile involves short phases of collaborative, iterative work with frequent testing and regularly-implemented improvements. Some phases and tasks happen at the same time as others. In Agile projects, teams share responsibility for managing their own work. Scrum and Kanban are examples of Agile frameworks, which are specific development approaches based on the Agile philosophy.

Scrum is an Agile framework that focuses on developing, delivering, and sustaining complex projects and products through collaboration, accountability, and an iterative process. Work is completed by small, cross-functional teams led by a Scrum Master and is divided into short Sprints with a set list of deliverables.

Kanban is a tool used in both Agile and Lean approaches that provides visual feedback about the status of the work in progress through the use of Kanban boards or charts. With Kanban, project managers use sticky notes or note cards on a physical or digital Kanban board to represent the team's tasks with categories like "To do," "In progress," and "Done."

Lean uses the 5S quality tool to eliminate eight areas of waste, save money, improve quality, and streamline processes. Lean's principles state that you can do more with less by addressing dysfunctions that create waste. Lean implements a Kanban scheduling system to manage production.

Six Sigma involves reducing variations by ensuring that quality processes are followed every time. The Six Sigma method follows a process-improvement approach called DMAIC, which stands for define, measure, analyze, improve, and control.

Lean Six Sigma is a combination of Lean and Six Sigma approaches. It is often used in projects that aim to save money, improve quality, and move through processes quickly. Lean Six Sigma is also ideal for solving complex or high-risk problems. The 5S organization framework, the DMAIC process, and the use of Kanban boards are all components of this approach.

Despite their differences, all of these project management methodologies require communication and collaboration among various teams and aim to deliver projects on time and within budget.

Module 4

Understanding organizational structure

- The way a company or organization is arranged. How people are related, and who reports to who.
- Org structure:
  - org chart
  - report chart: relation between people
- Many different organizational chart, two popular ones are:
  - Classic: functional/top-down. This is like a branch of military.
  - Matrix: like a grid, it has direct higher-ups and stakeholders from other departments or programs. The employees have two or more managers.
- How organizational structure affects project management
  - determines the authority. Authority has to do with your ability to make decision for the project that impact the organization.
  - Resource availability: knowing how to access the people, equipment, and budget need for a project.
- In classic structure:
  - Less authority and tighter scope
  - Project manager depends on the managers to approve the resources. Resources determines by the leaders of the department.
  - You need to go through the chain of approvals for resources.
- Matrix structure
  - Employees have two or more managers (functional and project managers)
  - Project manager need to cooperate with more people, chain of command is not as clear in the classic structure.
- Org structure affects how to run and manage a project.
- What is Project management office (PMO): is a group within an organization that defines, sets, and helps maintain project management standards and processes throughout that organization. It often acts as a coordinated center for all of the organization's projects, helping them run more smoothly and efficiently.
- The main functions of a PMO include:
  - **Strategic planning and governance:** This is the most important function of a PMO. This involves defining project criteria, selecting projects according to the organization's business goals, and then providing a business case for those projects to management.
  - **Best practices:** PMOs help implement best practices and processes within their organization. They also share lessons learned from previous successful projects. They help ensure consistency among their organization's projects by providing guidance about processes, tools, and metrics.
  - **Common project culture:** PMOs help set common project culture practices by training employees about optimal approaches and best practices. This helps keep project management practices consistent and efficient across the entire organization.
  - **Resource management:** PMOs are often responsible for managing and allocating resources—such as people and equipment—across projects throughout the organization based on budget, priorities, schedules, and more. They also help define the roles and responsibilities needed on any given project. PMOs provide training, mentoring, and coaching to all employees, but project managers in particular.
  - **Creation of project documentation, archives, and tools:** PMOs invest in and provide templates, tools, and software to help manage projects. They also play an important role in maintaining their organization's project history. Once a project closes, they archive all of the documents created during the project for future reference and to capture lessons learned.

Understanding the impact of organizational culture

- Organizational culture provides context and acts as a guide for what their people value, how they operate on a daily basis, how they relate to one another, and how they can be expected to perform.
- Different ways to define organizational culture. Some definitions emphasize teamwork and innovation, while others focus on attention to detail and achievement.
- Organizational culture:
  - The values employees share, as well as the organization's value, mission, and history.
  - Company's personality
- Understanding an organization's culture will help you navigate your team more effectively toward achieving the project's goal. It also impacts the way you plan your project.
- If you can demonstrate how the project supports the company's mission or how the project aligns with the company's values, you'll have more support from executives and stakeholders to get the approvals and resources you need.
- *Does the management team care about speed over perfection?* How do people within the organization make decisions? Do they thoroughly examine every option for every decision?
- This will help inform which values are the most important to them and how you can approach your decision-making.
- To learn more about organization's culture, consider these questions:
  - How does communication happen? Email or meeting or phone.
  - How are decisions made? Vote or top-down.
  - What kind of rituals are in place when someone new comes to the facility? Lunch, tour of building, introduce to people
  - How are projects typically run?
  - What kinds of practices, behaviors and values are reflected by the people in the organization?
  - Overtime or weekend and expectation?
- **Navigate and understand an organization's culture:**
  - Ask questions: You can learn about an organization's culture by asking questions of management and peers. You might want to ask questions about:
    - **Atmosphere**
      - What is the company's dress code?

        - How do people typically share credit at this company?
        - Is risk-taking encouraged, and what happens when people fail?
        - How do managers support and motivate their team?
        - How do people in this role interact with customers and users?
        - When and how do team members give feedback to one another?
        - What are some workplace traditions?
        - What are some of the ways the company celebrates success?
    - **Policies**
        - What are the policies around sick days and vacation?
        - Does the company allow for employee flexibility (e.g., working from home, flexible working hours)?
        - What policies are in place that support employees sharing their identity in the workplace?
    - **Processes**
        - What is the company's onboarding process?
        - How do employees measure the impact of their work?
    - **Values**
        - What are the company's mission and value statements?
        - How might the person in this role contribute to the organization's mission?
        - How does the organization support professional development and career growth?
- Make observations & **company rituals** Rituals can be powerful drivers of culture. They engage people and help instill a sense of shared purpose and experience.
    - How are birthdays and holidays celebrated?
    - Do employees generally eat lunch at the same time and in the same place?
    - Watch employee interactions**:** Observing how employees interact can help you tailor your interaction style to the company norm.
    - Are employee interactions more formal or informal in nature?
    - Are ideas solicited from employees in different roles?
- Understand your impact

- Organizational culture is critical to the health of a company, the people who work there, and the customers it serves.
- The importance of organizational culture:
    - **Identity:** An organization's culture defines its identity. Its identity essentially describes the way the company conducts business, both internally and externally. A company's values and organizational culture go hand-in-hand; its values are part of its identity. You can almost think of an organization's culture as its personality. That is why it is important to learn your company's (or target company's) mission and value statements. The mission and value statements will help you understand why the company exists and will give you insight into what the company believes in and how it will behave.
    - **People:** Strong, positive organizational culture helps retain a company's best employees. People who feel valued, engaged, and challenged are more likely to give their best and want to drive for success. An organization's culture can help keep talented employees at a company, and it can attract great people too! On the other hand, a toxic culture can have the opposite effect. It is important to find an organization with a culture that fits your personality. One way to find out more about an organization's culture is to talk to the people who work there. You can also take note of the current employees' attire, expressions, and overall behavior.
    - **Processes:** Organizational culture can have direct impacts on a company's processes, and ultimately, its productivity. The organization's culture is instilled throughout the company—from its employees to how its employees do their job. For example, a company that values feedback and employee involvement might have that reflected in their processes by including many opportunities for employees to comment. By allowing employees to feel their voices are heard, this company is adhering to its culture.
- Some aspects of an organization's culture that are directly related to how you will manage projects are communication, decision-making, rituals, previous management styles, and values.
- When a company's culture is aligned with its corporate strategy and goals, the level at which it can perform is impressive.

Understanding change management

- If a deliverable of a project is a new tool/process, you need change management.
- Change management: the process of delivering your completed project and getting people to adopt it. That is smooth roll out of changes and easier adoption.
- Your project's success depends on the adoption and acceptance of your project—whether that entails the launch of a new external tool or a process that will change operations at a production facility. In both cases, the greatest impact of the change will be on the people who use and interact with the product or process that is changing.
- As a project manager, you can think of change management as necessary for the successful outcome of your project. Both change management and project management aim to increase the likelihood of project success.
- When you are thinking about change management as it relates to your project, begin by asking yourself the following questions:
    - How will the organization react to change?
    - Which influencers can affect change?
    - What are the best means of communication?
    - What change management practices will lead to the successful implementation of my project?
- There are many change management strategies. It centers around three core concepts and best practices:
    - Create a sense of ownership and urgency
    - Figure out the right combination of skills and personalities. One effective way of motivating your team is to communicate clearly your vision and approach for the project.
    - Effective communication (transparent, upfront with your plans and ideas, and making information available.
- Best practices for approaching change management:
    - **Be proactive.** Proactive and inclusive change management planning can help keep any potentially impacted stakeholders aware of the upcoming changes.
        - Incorporate change management into your project management steps. For example, you can schedule time during team meetings or create a feedback document to ensure that your team members know there is a place to voice their suggestions and concerns.
        - You can also plan steps towards the end of your project to introduce the deliverable to stakeholders in the form of demonstrations, question and answer forums, or marketing videos. You can factor all of these decisions into your plan so that any potential changes are less likely to impact your timeline. If these

steps have not been built into your plan, you can escalate and stress the importance of a change management plan to your stakeholders.

- **Communicate about upcoming changes.** Communication should occur regularly among impacted stakeholders, the change management team, and the project team. Check in and communicate throughout the project about how the changes will provide a better experience for end users of the project deliverables. In this way, you support the process by providing everyone with the information they need to feel prepared to adjust to changes once the project is ready to launch.
- **Follow a consistent process.** Following a clear change management process helps maintain consistency each time there is a change. The change management process should be established and documented early on in your project to guide how the project will handle change. Your organization may also have an overarching change management plan that can be adopted for your project. This may include when the promotion of the change should happen, when training should occur, when the launch or release will occur, and corresponding steps for each phase of the process.
- **Practice empathy.** Changes are inevitable, but we are often resistant to them. By being empathetic to the challenges and anxiety change can bring, you can support the process in subtle ways.
- **Use tools.** Incorporating tools to assist in the adoption of a change can be very helpful. Here are a few examples you can use on your next project:
  - **Feedback mechanisms**, such as surveys, can capture input from stakeholders.
  - **Flowcharts can visualize the project's development process.**
  - **Culture mapping** can illustrate the company's culture and how the company's values, norms, and employees behavior may be affected by the change.
- Participating in change management involves being empathetic to the challenges of the change management process and supporting necessary changes throughout the project life cycle.
  - How will the organization react to change?
  - Which influencers can affect change?
  - What are the best means of communication?
  - What change management practices will lead to the successful implementation of my project?
- Governance and change management go hand-in-hand. To successfully implement change management, it is essential that you understand the structure and culture of the organization. Effective governance in change management provides clearly defined roles and responsibilities during change.
- Project governance is the framework for how project decisions are made. Project governance helps keep projects running smoothly, on time, and within budget. Project governance involves all the key elements that make a project successful. It tells you what activities an organization does and who is responsible for those activities.
- Effective project governance ensures that an organization’s projects are aligned to the organization’s larger objectives, are delivered efficiently, and are sustainable. This includes:
  - Considering the long- and short-term interests of your organization
  - Making thoughtful decisions about which projects to take on and avoiding projects if you do not have sufficient resources
  - Providing timely, relevant, and reliable information to the board of directors and other major stakeholders
  - Eliciting the input and buy-in of senior managers since they are the decision-makers
  - During the initiation phase, prioritizing clear, reachable, and sustainable goals in order to reduce confusion and conflict
  - During the planning phase, assigning ownership and accountability to an experienced team to deliver, monitor, and control the process
  - During the execution phase, learning from mistakes and adapting to new or improved knowledge

Course 2 : fundamentals of project initiation- June 5

Module 1

Objectives

- How initiate a project
- Identifying project scope, goals, and deliverables
- Measure the success of a project
- Identify stakeholders
- Scoping project tools and resources

Key components of project initiation

- A well-planned initiation results in a strong foundation for your project. It starts once a problem/issue is identified within the organization.
- Stakeholders initiate the project to address specific need for the business. It's your responsibility as the project manager to help identify the project goals, resources, and other details based on initial discussions with the project stakeholders.
- The initiation phase is a crucial time for asking stakeholders the right questions, performing research, determining resources, and clearly documenting the key components of a project. Doing this will help you solidify the scope, or the boundary, of the project.
- Without sufficient understanding of the goals, you might underestimate what resources you need or how long the project might take.
- Proper initiation also helps ensure that the benefits of the project outcomes will outweigh the costs of the project. To determine this, you'll do what's called a cost benefit analysis, which is the process of adding up the expected value of a project (the benefits) and comparing them to the dollar costs.
  - Cost benefit analysis: the process of adding up the expected value of a project (the benefics), and comparing them to the dollar costs.
  - A cost-benefit analysis can minimize risks and maximize gains for projects and organizations. It can help you communicate clearly with stakeholders and executives and keep your project on track.
  - To define Benefits:
    - What value will this project create?
    - How much money could this project save our organization?
    - How much money will it bring in from existing customers?
    - How much time will be saved?
    - How will the user experience be improved?

        - To define Cost:
            - How much time will people have to spend on this project?
            - What would be the one-time costs?
            - Are there any ongoing costs?
            - What about long-term costs?
        - There are intangible benefits and costs, there are gains/costs that are not quantifiable (customer satisfaction, employee satisfaction, employee productivity, branch perception)
        - The process of calculating costs and benefits is also called calculating **return on investment**, or **ROI**. ROI = (Gian – Cost)/Cost. ROI preferrably should be greater than 10%.
- Key components of project initiation
    - Goals: What you have been asked to do and what you are trying to achieve
    - Scope: To define the work that need to happen to complete the project.
    - Deliverables: products and services that you will create for your customer, client, or project sponsor. Can be tangible (software, text book) or intangible (scheduling training sessions)
    - Success criteria: standards by which you measure how successful a project was in reaching its goals.
    - Stakeholders: people who have interest in, and are affected by, the completion and success of a project.
    - Resources: budget, people, materials.
- Once all key components are ready, we need to create project charter: a document that clearly defines the project and its goals, and outlines what is needed to accomplish them.

Module 2

Objectives

- Define and create project goals and deliverables
- Define project scope, what is considered in-scope, out-of-scope, and scope creep
- How to define and measure a project success criteria

Identifying project goals + deliverables

- Project goal: is the desired outcome of the project.
- Need to know what needs to be done, before we start the project, and tell the team what to do, how to accomplish this, and know when you accomplished this.
- A good goal vs a bad goal: how well defined goals are: clear and specific.
- Goals also say how to do what you've been asked to do.
- Project deliverables: the products or services that are created for the customer, client, or project sponsor. This is what gets produced or presented at the end of a task, event, or process. Deliverables help quantify and realize the impact of the project.
- How to set goals-SMART:
    - Specific: what do I want to accomplish, why is this a goal? Who is involved? Where should the goal be delivered? To what degree. To add specificity to goals: look for words that might be subjective or based on an opinion, such as bigger, faster, better.
    - Measurable (to track progress and stay motivated): how much? Many? How will I know it's accomplished?
        - For measuring goals, we need metrics: what you use to measure something (revenue, income, ...).
        - Benchmarks (points of reference)
    - Attainable (objective should be realistic): can it be reasonably be reached (It should be a bit challenging to encourage growth, but not too much not to attainable)? To make sure a goal is attainable, we need to know how it can be accomplished.
    - Relevant: does the goal make sense (fits the organization's strategic plan? Is the goal worthwhile? Is it the right time?
    - Time bound: has a deadline
- **Objectives and Key Results (OKR):** combine a goal and a metric to determine a measurable outcome. It separates the different components of SMART goals and clarify them even further.
    - **Objective:**
        - Defines what needs to be achieved (similar to goals)
        - Describes a desired outcome
    - **Key Results:**
        - The measurable outcomes that define when the objective has been met. Define how you'll know whether or not you've met your objectives.
- OKR levels:
    - Company/organization (usually updated annually): Company-wide OKRs are used to set an ultimate goal for an entire organization, whole team, or department.
    - Department/Team
    - Project level: need to align with and support both company and department-level OKRs.
- Strong **objectives** meet the following criteria. They are:
    - Aspirational
    - Aligned with organizational goals
    - Action-oriented
    - Concrete
    - Significant
- To help shape each objective, ask yourself and your team:
    - Does the objective help in achieving the project's overall goals?
    - Does the objective align with company and departmental OKRs?
    - Is the objective inspiring and motivational?
    - Will achieving the objective make a significant impact?
- **Develop key results**
    - add 2–3 key results for each objective. Key results should be time-bound. They can be used to indicate the amount of progress to achieve within a shorter period or to define whether you've met your objective at the end of the project. They should also challenge you and your team to stretch yourselves to achieve more.
- Strong **key results** meet the following criteria:
    - Results-oriented—**not** a task
    - Measurable and verifiable
    - Specific and time-bound
    - Aggressive yet realistic
    - To help shape your key results, ask yourself and your team the following:
        - What does success mean?
        - What metrics would prove that we've successfully achieved the objective?
- While SMART goals and OKRs have some similarities, there are key differences, as well.

Defining project scope (in-scope, out-of-scope, scop creep)

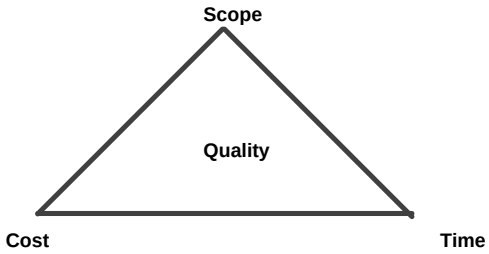
- Project scope defines the boundary of the project. What is included, and what is excluded in the project. It helps your project clearly defined and mapped out (who the project will be delivered to and who will be using the end result of the project). Allows to know the complexity of the project. Scope includes the project timeline, budget, and resources.
- Scoping should happen the project initial planning stage. It helps mitigate the risk the big changes down the line. But the scope can change in the course of the project.
- Document the scope.
- Here are the questions to ask to define the scope (assuming you are a restaurant your manager asks you to remodel the restaurant):
  - **Stakeholders (**Where did this project come from? + Who approves the final results.**)**
  - How did you arrive at the decision to update the dining space?
  - Did the request originate from the restaurant owner, customers, or other stakeholders?
  - Who will approve the scope for the project?
  - **Goals (**Why is it needed?**)**
  - What is the reason for updating the dining space?
  - What isn't working in the current dining space?
  - What is the end goal of this project?
  - **Deliverables (**What is the project expected to achieve?**)**
  - Which dining space is being updated?
  - What exactly needs to be updated?
  - Does the dining space need a remodel?

    Resources
  - What materials, equipment, and people will be needed?
  - Will we need to hire contractors?
  - Will we need to attain a floor plan and building permits?

    Budget
  - What is the budget for this project? Is it fixed or flexible?

    Schedule
  - How much time do we have to complete the project?
  - When does the project need to be completed?

    Flexibility
  - How much flexibility is there?
  - What is the highest priority: hitting the deadline, sticking to the budget, or making sure the result meets all the quality targets?
- In-scope: tasks that are included in the project plan and contribute to the project's goal.
- Out-of-scope: tasks that are NOT included in the project plan and contribute to the project's goal (causes a budget inflation, etc.).
- Scope creep: Changes, growth, and uncontrolled factors that affect a project's scope at any point after the project begins. There are two sources of scope creep:
  - External: customer requests, environment shift, change in technology
  - Internal: product improvements, process changes
- How to avoid external scope creep:
  - Make project plans visible
  - Get clarity on project requirements
  - Set ground rules and expectations for stakeholder involvement
  - Create a plan for dealing with out-of-scope requests.
  - Put all agreements in writing.
- As a project manager, Monitor your project's scope and protect it at all costs. Even the most minor change can mean major risk to your project's success.
- Here are some best practices for scope management and controlling scope creep:
  - **Define your project's requirements.** Communicate with your stakeholders or customers to find out exactly what they want from the project and document those requirements during the initiation phase.
  - **Set a clear project schedule.** Time and task management are essential for sticking to your project's scope. Your schedule should outline all of your project's requirements and the tasks that are necessary to achieve them.
  - **Determine what is out of scope.** Make sure your stakeholders, customers, and project team understand when proposed changes are out of scope. Come to a clear agreement about the potential impacts to the project and document your agreement.
  - **Provide alternatives.** Suggest alternative solutions to your customer or stakeholder. You can also help them consider how their proposed changes might create additional risks. Perform a cost-benefit analysis, if necessary.
  - **Set up a change control process.** During the course of your project, some changes are inevitable. Determine the process for how each change will be defined, reviewed, and approved (or rejected) before you add it to your project plan. Make sure your project team is aware of this process.
  - **Learn how to say no.** Sometimes you will have to say no to proposed changes. Saying no to a key stakeholder or customer can be uncomfortable, but it can be necessary to protect your project's scope and its overall quality. If you are asked to take on additional tasks, explain how they will interfere with the budget, timeline, and/or resources defined in your initial project requirements.
  - **Collect costs for out-of-scope work.** If out-of-scope work is required, be sure to document all costs incurred. That includes costs for work indirectly impacted by the increased scope. Be sure to indicate what the charges are for.
- **Managing** project scope goes hand-in-hand with goal setting. Revision of the goal changes the scope and vice versa. The goal of the project manager is to deliver the project according to the scope (deadline + budget). You need to make compromise as new changes and challenges present themselves.
- In order to decide if a scope change is acceptable and what impact it will have, project managers usually refer to the **triple constraint model:**



  - All three items are related. You can change one, without impacting the others. It is important to realize what trade-off you make as project progresses. To make the changes, you need to know the project priorities, you need to know what is the most important deliverables of the project.

Measuring a project's success (launch or Land)

- The time to decide if a project was successful is not at the end of project, i.e. *project launch*, which is the final result of your project to the client or user.
- *Landing:* Measuring the success of your project using the success criteria established at the outset of the project when setting SMART goals. (like a plane, take off is not a measure of success, you need to know how to land). At landing, you need to make sure your project functions as intended. For most projects, a launch is not a measure of success, but what happens to the product after launch matters. Launches are only a means to an end, and looking beyond the launch is important
- to ensure the launch achieves your overall goals.
- You will often hear companies celebrating the launch of a new product, service, or initiative, and it is important to remember that even when your project is out in the world, your work isn't complete. When working on a project, the goal isn't simply to launch it, but to land it. Landings occur once your project achieves a measure of success.
- A common mistake of many project teams is to "launch and forget" the results. This happens when a project manager delivers the project to the client and the client accepts the project delivery, but the project manager doesn't assess if the project deliverables satisfy the customer or user.
- At the beginning of the project, we need to define the success criteria, which tells you whether or not the project was successful. These are specific details of project goals, deliverables, requirements, and expectations. The standards by which the project will be judged once it's been delivered to stakeholders.
- To define success criteria, means to make the goals measurable, i.e., you need to ask how I know the project is completed (successfully accomplished).
- Determining project Success criteria:
  - Identify the measurable aspects of your project.
  - Get clarity from the stakeholders on the project requirements and expectations (document all the goals, so that you can refer to it later).
- Other factors that can be considered as success criteria:
  - Adoption (metrics): How the customer uses and adopts a product or service without any issues.
  - Engagement (metrics): How often or meaningful customer interaction and participation is over time
- Along each success criteria along the list: include the methods for how success will be measured, how often it's measured, and who's responsible for measuring it.
- Have the appropriate stakeholders sign off on the success criteria.
- Defining your success criteria should create greater alignment within the team and give everybody better visibility into how to achieve success.

Module 3

Exploring project team roles and responsibilities (all about stakeholders)

- Stakeholders: People who are interested in and affected by the project's completion and success.
- Accessibility: actively removing any barriers that might prevent persons with disabilities from being able to access technology, information, or experiences, and leveling in the playing field so everyone has an equal chance of enjoying life and being successful.
- A disability is often defined as a physical or mental condition that substantially limits a major life activity, such as walking, talking, seeing, hearing, or learning.
- In project management, you, yourself, people on your project team, or people highly invested in your project may have a disability, whether visible or invisible. As a project manager, you are responsible for making sure a group of people can come together to achieve a common goal using shared tools and systems.
- Once you lay the foundation for your project by outlining your goals and expectations, it is time to build your dream team. Choosing the right people for a team is a big task. Items to consider:
  - Required roles
  - Team size: depend on the size of the project (as team grows, communication becomes difficult)
  - Necessary skills (skills can be thought, maybe a person brings a positive attitude to the team). Technical skills are valuable, but Interpersonal skills, also known as people skills or soft skills, such as patience and conflict mediation, can help team members. Strong leadership skills help team members navigate organizational boundaries and effectively communicate with stakeholders to generate buy-in.
  - Availability (of the team, maybe committed to other project). This is especially true in matrix organizations, where team members have multiple bosses. you need to value diversity early on when building your team. Team members who understand one another are more likely to trust each other and feel safe sharing different points of view or offer a competing perspective.
  - Motivation (select people who are excited to get the work.) Just because a person is pre-assigned to a project, doesn't necessarily mean they have low interest in it, but a person who proactively volunteered for it may have additional motivation to do the work.
- Project roles in each project:
  - **Project sponsor:** The person who's accountable for the project and who ensures the project delivers the agreed upon business benefits. Sometimes they fund the project. They talk to managers and key stakeholders.
  - **Team members:** people doing the work and making things happen.
  - **Customer/users:** The people who will get some value from a successfully landed project. Customer's need define the project requirements. Customers are the buyers of the project. In some situations, we have both customers and

users for the project. Users are the people that ultimately use the product that your project will produce.
    - **Stakeholders:** Anyone involved in the project who has a vested interested in the project's success. ***Primary stakeholders*** are people who expect to benefit directly from the project's completion, while **secondary stakeholders** play an intermediary role and are indirectly impacted by the project. Primary stakeholders usually include team members, senior leaders, project sponsors, and customers.
    - **Project managers:** The person who plans, organizes, and oversees the whole project.

Evaluating stakeholders

- To analyze stakeholders:
    1. Make a list of all stakeholders.
    2. Determine the level of interest and influence for each stakeholder
    3. Assess stakeholders' ability to participate and then find ways to involve them. some will be **active stakeholders** with more opinions and touchpoints and others will be **passive stakeholders,** preferring only high-level updates and not involved in the day-to-day.
- From the second bullet:
    - Influence: measures how much power a stakeholder has and how much this stakeholder's actions affect the project outcome.
    - Interest: how much are the needs of the stakeholder affected by the project operations and outcomes.
- To do stakeholder analysis, we can use a 2x2 power grid (it is based on interest & influence). Based on this, you can better manage people on the team. Based on this grid, there four different method to manage stakeholders:

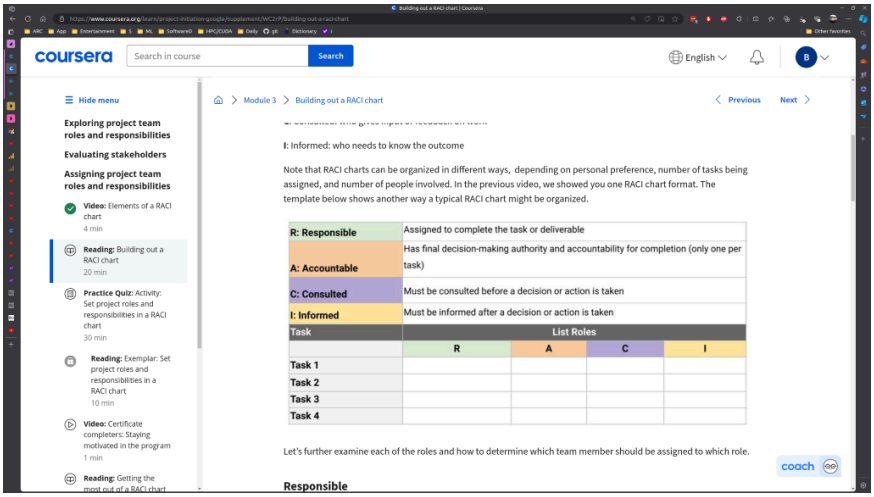
high	Meet their needs – keep satisfied (consult with them, and meet their need)	Key players-manage closely (closely partner with these people: project sponsors, key executives, or regulatory authorities.)
^ | power |	Monitor-not integral to the project	Show consideration (keep them up-to-date & informed to the project)
low	**<-- interest -- >**	high

- Different quadrants:
    - Q1: key players: Responses for this quadrant include:
        - **Engagement and Involvement:**
            - Keep these stakeholders well-informed and engaged throughout the project lifecycle.
            - Involve them in decision-making processes, seeking their input and feedback.
            - Address their concerns promptly and effectively.
        - **Regular Communication:**
            - Schedule regular meetings or updates to keep them informed about project progress and any issues.
            - Tailor communication to their preferences and needs to ensure they remain supportive and engaged.
    - Q2: upper left (high influence, low interest) Stakeholders in this quadrant have high influence but may not be deeply interested in the day-to-day project details. They might include senior managers who need to be informed but may not be actively engaged. Responses for this quadrant include:
        - **Executive Summaries:**
            - Provide high-level summaries of project progress and key decisions for their review.
            - Focus on the impact of the project on organizational goals and objectives.
        - **Periodic Updates:**
            - Provide periodic briefings or updates to ensure they are informed of major milestones and critical project changes.
    - Q3: Bottom right: low influence, high interest.
        - **Regular Updates:**
            - Communicate project progress, risks, and updates to keep them engaged and informed.
            - Address their queries and concerns promptly to maintain their interest.
        - **Stakeholder Feedback:**
            - Seek their feedback on project plans, progress, and outcomes to ensure their perspective is considered.
    - Q4: **Low Influence, Low Interest (Bottom Left)** They might include lower-level employees or departments not directly impacted by the project. Responses for this quadrant include:
        - **General Communication:**
            - Share general updates about the project's overall progress without overwhelming them with details.
            - Address any specific questions they may have, but avoid unnecessary inundation with project-related information.
        - **Minimal Engagement:**
            - Maintain a basic level of communication and engagement to keep them aware of the project without distracting them from their regular responsibilities.
        -
- Project managers need to meet with some people every day, but may but other every often.
- **Stakeholder buy-in**: the process of involving there people in decision making to hopefully reach a broader consensus on the organization's future.

Assigning project team roles and responsibilities

- RACI chart: helps to define roles and responsibilities for individuals or teams to ensure work gets done efficiently.
- There are four types of participation in a RACI chart:
    - **Responsible**: doing the work to complete the task. Every task needs at least one Responsible. Better not to have more than one.
    - **Accountable**: Those making sure the work gets done. Must be only one person. The accountable person ultimately has the authority to approve the deliverable of the responsible party. To find out who is the accountable for a task, you need to ask: Who will delegate the task to be completed? Who will review the work to determine if the task is complete? Sometimes, the responsible party is also accountable, but it is helpful to separate these roles and ensuring that accountability is not shared.
    - **Consulted**: Those giving feedback, like subject matter experts or decision makers. There is no maximum or minimum number of people who can be assigned a “consulted” role, but it’s important that each person has a reason for being there. To find the consulted people for a task, you need to ask: Who will the task impact? Who will

have input or feedback for the responsible person to help the work be completed? Who are the subject matter experts (SMEs) for the task?
    - **Informed**: Those just needing to know the final decisions, or that a task is complete. It is common to have many people assigned to this category and for some team members to be informed on most tasks. Team members or stakeholders here will not be asked for feedback, so it is key to make sure people who are in this group only require status updates and do not need to provide any direct feedback for the completion of the effort. Questions to ask to find people in this category: Who cares about this task's completion? Who will be affected by the outcome?
- To create the RACI chart (4 horizontal cols for R A C I + one row for each task):
    - List of all people involve in the project (use roles instead of names, just in case, one person takes more than one role)
    - List all the tasks for the project and write them as the first column.
    - In front of each task, declare RACI. There should not be more than one person as accountable. The same person might be responsible.
- Overlapping work between tasks is an issue.
- Even though communication is usually a good item, but over communication makes things more complicated. This causes info overload, people don't know what to pay attention.



- Why RACI is important: can be used to determine the workload balance: When you complete your chart, it is a good idea to go back through and tally the number of Rs assigned to each stakeholder. This can help you identify potentially overloading one team member with work. Using a RACI chart to determine responsibility for tasks can help mitigate single points of failure (known as creating **silos**, where the knowledge and responsibility for a task falls on one person) and allow you, as the project manager, to delegate tasks and avoid burnout.
- **When should you use a RACI chart?** evaluate the complexity of the effort. For example, if you have a very small project team with a small number of stakeholders, clearly defined roles, and a short timeline, introducing a RACI chart could possibly slow down the project. However, larger projects, or even projects that involve a large number of stakeholders, could greatly benefit from a RACI chart. It is always a good idea to work through the creation of a RACI chart and evaluate the outcome.
- A few key reasons why projects fail and examine how missteps during the initiation phase can lead to project failure:
    - Unclear expectations
    - Unrealistic expectations
    - Miscommunication: If information is not communicated in a timely manner, does not include pertinent information (risks, decisions made, scope changes, etc.), or is not sent to the correct stakeholders, then you may be setting yourself up for failure.
    - Lack of resources (team members, budget, materials.
    - Scope creep

Module 4

Understanding project resource needs

- Project resources:
    - Budget: An estimate of the amount of money a project will cost to complete.
    - People: those who help execute the tasks of the project.
    - Materials: items you need to help get the project done. Such as computers in a software company.
- It is important to decide about the resources before the project gets rolling.
- To organize resources, we need to use **tools. Tools:** aids that make it easier for a project manager of team to manager resources and organize work.
- Tools allow:
    - Track tasks
    - Manage budgets
    - collaborate with teammates

Developing documentation for project kick-off

- A big part of project management is guiding decision making. Even if the project manager is not the one making final decisions on major aspects of the project, it's still your job to keep track of every new decision and use those decisions to create a plan. That is why documentation is a big part of project management role.
- The items to reflect in the documentation (for launch):
    - What problem are you trying to solve?
    - What are the project goals?
    - What are the scope and deliverables, and who are the project's stakeholders?
    - What resources do they need to complete their work?
- Documentation also helps preserve decisions made early on in the project and can serve as a reference point for team members who might join later in the project life cycle.

- There are two types of project documentations:
  - Project proposals
  - Project charters
- **Project proposal** (comes at the very beginning of the project): a form of documentation that persuades a stakeholder to begin a project. A project manager may not write the proposal, but will keep track of the proposal. A proposal, might be a formal documentation, a presentation, or even a simple email. The proposal kicks off the initiation phase by influencing and persuading the company to move forward with the project.
- **Project charter:** A formal document that clearly defines the project and outlines the necessary details needed to reach its goals. A project charter helps you get organized, set up a framework for what needs to be done, and communicate those details to others. The project charter serves a similar purpose and often comes at the end of the initiation phase. However, its goal is to more clearly define the key details of the project. A charter will often serve as a point of reference throughout the life of a project.
- The project charter makes clear that the benefits of the project outweigh the costs. You include the answer to the cost benefit analysis in the charter: Business value created, money saved, and time invested for this project. The charter also helps ensure that you and your stakeholders agree on the details of the project. Project charter approval means that management is supportive, and it's also a key step to ensure that the project matches the needs of the organization.
- Project charters can formatted in different ways, or contain different information. The project charter is a living document and it can evolve as the project progresses.
- Project charters will vary but usually include some combination of the following **key information**:
  - **introduction/project summary** (the goal of the summary is to provide an overview of the project and to outline the goals you hope to accomplish-brief, a few sentences at most)
  - **goals/objectives** (desired results of the project – address the overall result that stakeholders are aiming to achieve. They are determined by input from stakeholders and the project manager.)
  - **Deliverables** (refer to the specific tasks and tangible outcomes that enable the team to meet project goals)
  - business case/benefits and costs
  - project team
  - **Scope** (refers to the boundaries of a project)
  - success criteria/measure of success
  - major requirements or key deliverables
  - Budget
  - schedule/timeline or milestones
  - constraints and assumptions
  - Risks
  - OKRs
  - approvals

- The project charter is also an alignment tool. Alignment: reaching agreement between two or more parties. A common cause of project failure is misalignment among stakeholders about the details of the project. Misalignment can also happen between you and your stakeholders when you have differing visions for the project.
  - Align with your stakeholders before the work begins.
  - Take time during the initiation phase to create a project charter that clearly lays out the details of a project. Usually the initiation phase is the ideal time to make changes in the project.
  - When presenting a project charter to stakeholders:
    - Collect feedback
    - Identify where there are misalignments.
    - Make changes to address those misalignments.
  - Documenting misalignments and their resolutions in the project charter allows you to reference those decisions later on. This can go in the appendix.
- There are many online project charter templates.

Utilizing tools for effective project management

- Tools can help track detailed information about all kinds of tasks and make it easy to communicate with lots of different people.
- Project management tools help you:
  - Track task deadlines
  - Provide visibilities to others
  - Manage a budget
  - Create helpful diagrams

    - Manage contracts
- For small projects, simple tools might be good enough, but for larger projects, teams may have to spend some time to learn more sophisticated tools.
- In some cases, we don't have the option to choose the tools, and we have to use organizational tools.
- Introducing new tools to a team:
    - **Discuss the tool early and often, if possible.**
    - **Ask for feedback from key stakeholders.**
    - **Involve the key stakeholders in demonstrations as you get closer to making the final decision on the project tracking tool.**
    - **Ensure the tool is fully functional before the team is introduced to it.**
    - **Set up training for the tool as needed before you ask the team to actually use it.**
- **Different types of tools:**
    - **Scheduling & work management:** Jira,
    - **Productivity and collaboration:**
        - Online shared document
        - Meeting agendas
        - Status updates
        - Spreadsheets
        - RACI charts
        - Project Plan
        - Presentations
        - Project overviews
        - Email and chats

Course 3 : Project planning: putting it altogether – Started on July 3, 2024

Module 1

- **Objectives**
    - Kicking off the planning phase
    - Setting and reaching milestones and identifying tasks
    - Budgeting process
    - Identifying and planning for risk
    - Documentation

Understanding project resource needs

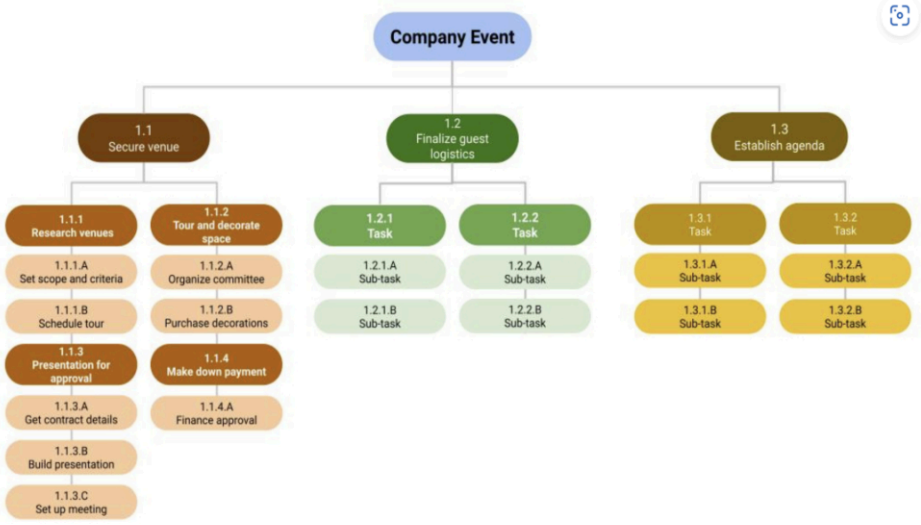
- During the initiation phase
    - Project manager gets assigned
    - Project goals, scope, and deliverables have to be approved
    - Team members get assigned
    - Sign off your project charter
- Next step is planning. **Benefits of planning:**
    - Understand the work needed to achieve your goals
    - Coordinate efforts and timelines with other teams, contractors, and vendors
    - Identify and plan for risk
    - Get buy-in from key members of the project team (getting their supports for your plans)
    - Demonstrates to stakeholders that the team is taking care to start the project with a delighted plan
- Project plan don't have to be perfect at the beginning. Anyways, it is likely that the project goals will change at the course of the project.
- Three major items in planning
    - Schedule: the project timeline, which includes the start date, the end date, and dates for events in between
    - Budget: total cost to complete the budget
    - Risk management plan: searching for possible problems related to the project and planning ahead to mitigate these risks.
- Kick-off meeting: it is important to schedule a formal meeting that serves as the start to project planning. It is the first meeting in which a project team comes together to ground everyone in a shared vision, gain a shared understanding of the project's goals and scope, and to understand each person's individual roles within the team.
- People in the kick-off meeting: all people in the RACI chart (project team, project stakeholders, project sponsor).
- Why kick-off is important:
    - Establish a shared vision
    - Align on scope
    - Build team rapport
    - Ask questions and offer insights
    - Set expectations on how each person contribute to the project
- Kick-off meeting agenda:
    - Introduction
        - Team members individually talk
        - Project roles
        - Fun facts
    - Background of the project
        - How the project came to be
        - Why the project matters
        - Set a shared vision
    - Sharing the goals and scope
        - In-scope
        - Out-of-scope
        - Target launch date
        - Milestones
    - Roles:
        - What work everyone is responsible for throughout the duration of the project

    - Collaboration
        - Shared project tools and documents
        - Communication expectations
    - What comes next
        - Action items to take next
    - QA
        - Gain clarity on meeting topics
        - Ensure the project benefits from diversity of thoughts experiences and ideas.
- Create (or ask someone) to summarizes the team meeting.
- Send a follow-up email, that summarizes the key points and outcomes from the meeting, and any action items to the attendees.
- Invite attendees to reach-out if they have additional questions.
- If you are recording, ask people if there is any objection.
- **Kick-off meeting best practices**
    - **Set the right time.** Choose a meeting time that works for everyone. Be mindful of time zone differences.
    - **Set the right length.** Choose an appropriate meeting length—no more than one hour. You don't want to waste people's time, but you also don't want to run out of time. Kick-off meetings work best when you first share key information and then spend any additional time on questions and team building.
    - **Invite the right people.** Be strategic about including the appropriate people. The goal is to invite attendees who play a role in the development and execution of the project, such as all team members, stakeholders, and the project sponsor. You don't want to leave anyone out, but you also don't want to invite people who shouldn't be there.
    - **Designate a notetaker.** The discussion that takes place during the meeting is important. It is critical that you document any feedback, changes, or questions asked by attendees. If you are leading the meeting, designate someone else to take notes before the meeting starts. You can also use tools like Chorus Notetaker, Google Keep, Google Docs, or Microsoft OneNote.
    - **Set the agenda.** To recap what we discussed in the video, a kick-off meeting agenda should generally include: introductions, the project background and purpose, project goals and scope, roles and responsibilities, the collaboration process and project tools, what comes next (expectations and action items), and time for questions and discussion.
    - **Share the agenda**. Prior to the meeting, share the agenda with attendees via email and identify speakers for each topic. By sending the agenda in advance, everyone will have an idea of what to expect, time to prepare for anything they may need to present or discuss, and time to generate questions or ideas.
    - **Stick to the agenda**. During meetings, discussions can sometimes go off topic or take longer than expected. As a project manager, it is your job to keep the meeting on track by redirecting discussions to the items on the agenda.
    - **Follow up after the meeting**. After the meeting, make sure to send out a meeting summary featuring the meeting notes and any action items.

Defining tasks and milestones

- **Milestone:** An important point within the project schedule that indicates progress and usually signifies the completion of a deliverable or phase of the project. These are checkpoints of the project.
- **Project task:** an activity that needs to be accomplished within a set of period of time and is assigned to one or more individuals. The work of the project is broken down into many different tasks. To reach a milestone, you need to complete multiple tasks.
- Set tasks to identify milestones:
    - **Top-down scheduling:** In this approach, the project manager lays out the higher-level milestones, then works to break down the effort into project tasks. The project manager works with their team to ensure that all tasks are captured.
    - **Bottom-up scheduling:** In this approach, the project manager looks at all of the individual tasks that need to be completed and then rolls those tasks into manageable chunks that lead to a milestone.
- Why setting milestone is important:
    - Setting milestones gives you a clear understanding of the amount of work your project will require.
    - It forces you to break the project down into more manageable chunks. (deliverables -> milestones -> tasks)
    - Milestones, keep your project on track.
    - Milestones help uncover areas where you might need to adjust scope, timelines, or resources to meet your goals. For example, if you realize that reaching a milestone will require more tasks than you'd anticipated, you might ask a stakeholder for permission to reduce the scope of the project and cut down on the number of tasks.
    - Reaching milestones can seriously motivate your team, and illustrate real progress to your stakeholders.
    - Milestones also serve as great check-in point to highlight your progress to stakeholders.
    - Milestones must be completed on time and in sequential order.
- If you fail to complete a deliverable tied to a specific milestone, it could set back your project schedule. We may need additional resources or team need to do extra work to catch up.
- How to set milestones:
    - The first step to setting a milestone is to evaluate your project as a whole.
    - Then, make a list of tasks, to achieve the goals.
    - The big items that indicate progress are your milestones. Signifies major deliverables or phases in the project.
    - Smaller items that stakeholders don't need to review.
- Once you defined the milestones, the next step is to assign each one a deadline. Give the team a fair amount of time.
- When determining deadlines for milestones, you'll also want to consider the needs of your stakeholders.
- **Milestone-setting pitfalls**
    - **Don't set too many milestones**. When there are too many milestones, their importance is downplayed. And, if milestones are too small or too specific, you may end up with too many, making the project look much bigger than it really is to your team and stakeholders.
    - **Don't mistake tasks for milestones**. Remember that milestones should represent moments in time, and in order to map out how you will get to those moments, you need to assign smaller tasks to each milestone.
    - **Don't list your milestones and tasks separately.** Make sure that tasks and milestones can be visualized together in one place, such as a project plan. This will help ensure that you are hitting your deadlines and milestones.
- How to account for the many tasks that ladder up to each milestone. This is happening through Work Breakdown Structure (WBS).
- WBS: a tool that sorts the milestones and tasks of a project in a hierarchy, in the order they need to be completed. We can use a spreadsheet and on column A, we define all the milestones, then in front of each milestone, we define the

tasks required to do achieve this milestone. After preparing WBS:
    - You need a set of discrete project tasks that ladder up to each of your milestones.
    - Team members assigned to each task (consider familiarity with the task, teammate's workload, share the task/workloads evenly, between the teammates).
    - Ensure that teammates are clear on their assigned tasks.
    - Start each task with a verb
    - Assign deadline to each task.
- Assigning tasks to team members has some benefits: Assigning tasks creates a sense of personal responsibility for members of the team. Good to create overall team rapport.



Module 2: components of project plan

- **Objectives**
    - Why it is necessary to create and manage a project plan.
    - Definition of a project plan, and what goes into it (schedule, etc.)
    - How to use time estimation methods to prevent project failure
    - Tools and best practices you can use to build a project plan
    - Examine tools and best practices you can use to build a project plan
- Project plan helps document the scope, tasks, milestones, budget, and overall activities of the project in order to keep the project on track.
- Center of project plan is project schedule (amount of time required to complete the project).
- Project plans contain these five basic elements:
    - tasks,
    - milestones,
    - People: each team member should understand their role and tasks.
    - Documentation: link all project documents, such as RACI charts, project charter, budget and risk management plan.
    - Time: includes dates on which a task should start and end, plus milestone dates.
- Project plan includes the following items:
    - Scope and goals (through the project charter in the documentation)
    - Work Breakdown Structure (and RACI): through tasks.
    - Budget through documentation
    - Management plans
- Previous project plans:
    - ask a colleague with experience launching other products for the same company to share their project plan as an example.
    - Ask colleagues about unrelated projects that also had similar components.
    - Provide helpful inspiration as you create your own list of tasks.
    - Identify possible task durations, subject matter experts, and suppliers.

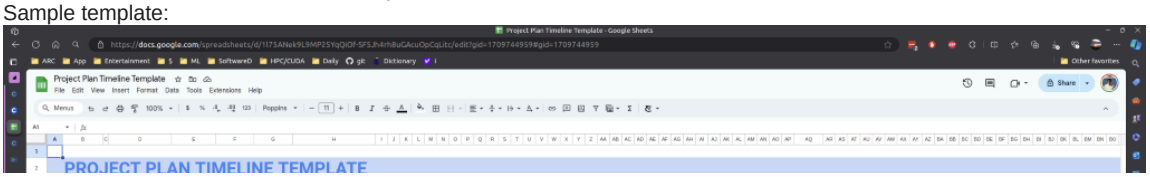
Estimation to set project timelines

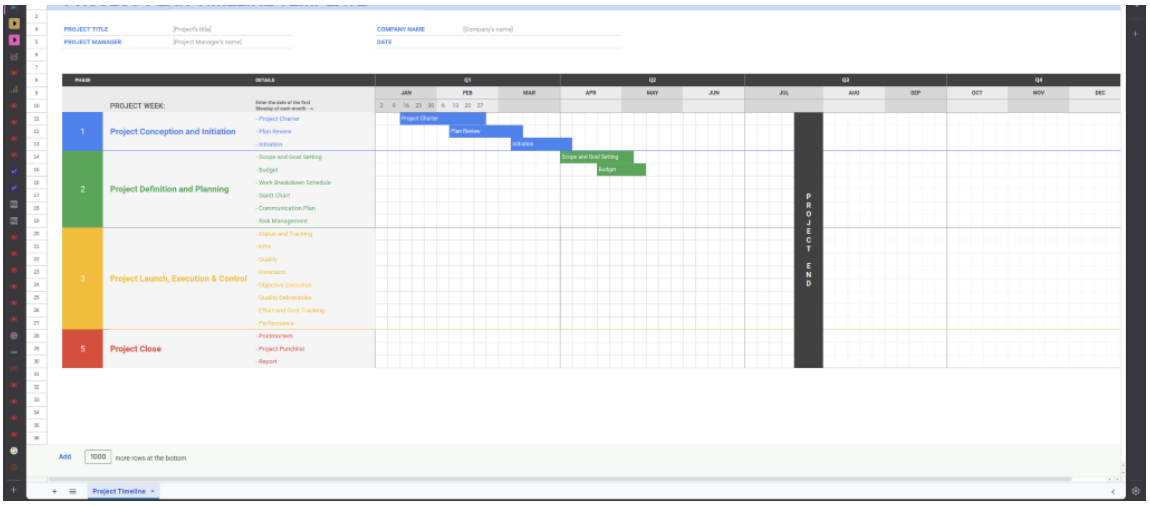
- **Time estimation:** A prediction of the total amount of time required to complete a task.
- **Effort estimation:** a prediction of the amount and difficulty of active work required to complete a task. This is the actual time required to do a task.
  For example, the effort time for paining a wall is 30 mins (effort estimation), but it takes a day for the paint to dry (time estimation). Tuning may take one day, but submitting the PR and CI tests, will take two days (total of three days).
  It's important to understand the difference between time estimation and effort estimation, because it can help you be more efficient with your available resources. If there's idle time baked into a given task, your teammate is effectively free to do other things.
- Unrealistic effort estimates happen when you've underestimated the amount of time it'll take to complete a task. Don't be too optimistic that the project goes exactly as it plans.
- Your teammate will have the most realistic understanding of the amount of work required to complete a task, and will be able to provide you with the best estimate.
- Consider sub-tasks in your planning: sub-tasks are smaller tasks that are required to complete a larger task.
- An estimate might not be very accurate. You need to use a **buffer** in the planning phase, to protect against inaccurate effort estimates.
- **A Buffer**: Extra time added to the end of a task or project to account for unexpected slowdowns or delays in work progress. Using a buffer, your project shouldn't fall off track when task delays inevitably arise.
- **Two types of buffers:**

    - Task buffers: extra time tacked on to a specific task. This should only be used for tasks that are out of project's control & task buffers should be used more sparingly for tasks within the project team's control (maybe for tasks with elements of unpredictability).
      Adding a buffer to every project task could lengthen your project schedule unnecessarily.
    - Project buffers: Extra time tacked onto the end of a project.
- **Planning fallacy and optimism bias:** our tendency to underestimate the amount of time it will take to complete a task, as well as the costs and risks associated with that task, due to **optimism bias**. Optimism bias is when a person believes that they are less likely to experience a negative event.
- Being on the lookout for “what-ifs” is a key project management skill. Considering situations that could affect whether or not the project is completed on time can help you overcome the planning fallacy.
- Finding the right amount of people to get a project done. This is based on capacity planning.
- **Capacity:** The amount of work that the people or resources assigned to the project can reasonably complete in a set period of time (a person can only do so much).
- **Capacity planning** refers to the act of allocating people and resources to project tasks, and determining whether or not you have the necessary resources required to complete the work on time. Based on this analysis, you can decide whether you need more people or not.
- How do you decide where a teammate should focus their priorities and make the most of their capacity? You can prioritize their time by plotting the critical path of your project timeline. A: **Critical path.**
- Critical path: the list of project milestones you must reach in order to meet the project goal on schedule, as well as the mandatory tasks that contribute to the completion of teach milestone. Basically, all must-have tasks, not nice-to-have tasks. In other words, your critical path, includes the bare minimum number of tasks and milestones you need to reach your project goals.
- To find the critical path, list all tasks required to complete the project and the milestones they feed into. Then, form the Work Breakdown Structure, then determine which taskson the list absolutely can't begin until another task is complete. This is called dependency. Then, you'll work with the team to make time estimates for each task and map each task from start to finish. The longest path is your critical path. You need:
    - You need to know which tasks can happen in parallel and which tasks must happen sequentially.
    - Determine which project tasks have **a fixed start date** (a start date, on which you must start work on your task in order to achieve your goal. Identifying whether or not your tasks have fixed start date can help with capacity planning bcs it helps ensure that you'll have the right number of people available to complete tasks on time.
    - Some task might have an early start date (earliest time you can begin working on a task).
    - Identify if a task has float (also called slack). Tasks on the critical path should have no floats.
- You can also calculate the critical path using two common approaches: the **forward pass** and the **backward pass**. These techniques are useful if you are asked to identify the **earliest and latest start dates** (the earliest and latest dates on which you can begin working on a task) or the **slack** (the amount of time that task can be delayed past its earliest start date without delaying the project).
    - The **forward pass** refers to when you start at the beginning of your project task list and add up the duration of the tasks on the critical path to the end of your project. When using this approach, start with the first task you have identified that needs to be completed before anything else can start.
    - The **backward pass** is the opposite—start with the final task or milestone and move backwards through your schedule to determine the shortest path to completion. When there is a hard deadline, working backwards can help you determine which tasks are actually critical. You may be able to cut some tasks—or complete them later—in order to meet your deadline.
- Getting accurate time estimate from your team. This requires soft skills: personal characteristics that help people work effectively with others.
- Soft skills for accurate estimation:
    - Asking the right questions: asking effective, open-ended questions (not yes and no questions). Example
        - How long does it typically take you to mockup a website design like this one?
        - How complex is the task?
        - What are the risks associated with this task?
        - When do you think you can have this ready.
    - Negotiating effectively. This is to make the team member make your project the priority. Asking follow-up questions to reduce the estimate.
    - Practicing empathy: a person's ability to relate to the thoughts and feelings of others. Ask about workload, and work-life balance. Ask about vacation or leave.

Utilizing tools to build a project plan

- An anchor of a good project plan is a clear schedule, containing all tasks of a project their owners, and when they need to be completed.
- You can use excel to create the plan.
- One useful tool to build a project chart is the **Gantt chart**: a horizontal bar chart that maps out a project schedule. Gantt charts are a highly visual representation of a project's tasks, with clear breakdowns of who's responsible for the work and when those tasks are due. Gantt charts are like calendars, they feature the start and end date of a task.
- 5 best practices for building a great project plan:
    - Carefully review deliverables, milestones, and tasks
    - Give yourself time to plan
    - Recognize and plan for the inevitable: things will go wrong
    - Stay curious: you are no expert in all topics, ask lots of questions from the teammate, to learn more about the process.
    - Champion your plan: can your teammates use the tool you used to build your plan? Is the information clear enough for your stakeholders? Will using this plan as a single source of truth save your team and stakeholders the time and energy when they need to find information on the project? If the answer is yes to all questions, then you are on the right track.
    - Use a task ID for each task, to easily refer to the tasks
- Sample template:





Module 3: managing budgeting and procurement

- **Objectives**
  - How to create and manage a real-world project budget
  - Discuss the components of a budget and how stakeholders play a role in the budgeting process
  - Learn about the importance of procurement in project management
  - Learn about vendor management and procurement in Agile and traditional methodology setting.

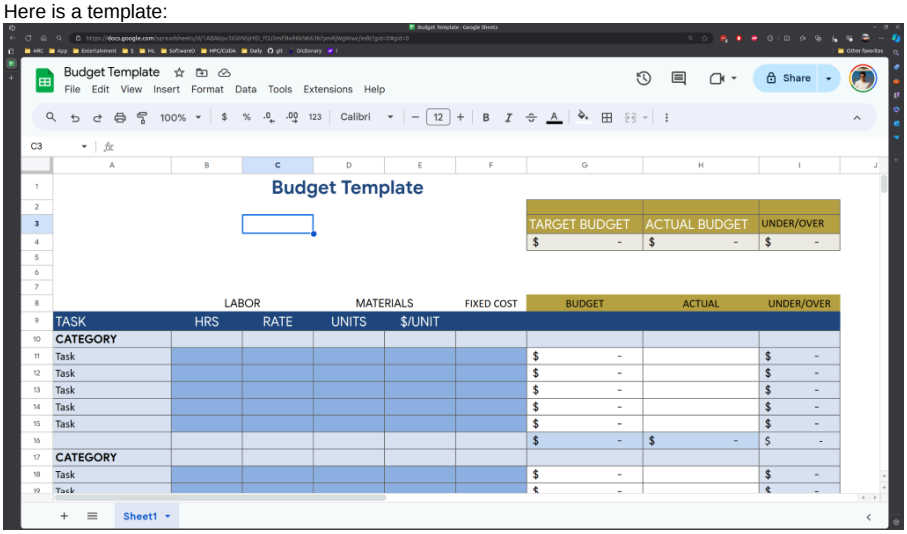
Understanding project budgets

- Project budget: The estimated monetary resources needed to achieve the project's goals and objectives.
- Project managers break the budget by milestones. This ensures that you calculate the correct expenses for a particular period of time (this is considered a forecast).
- Forecast is a cost estimate, prediction over a period of time.
- You need to frequently review and update your budget and it will evolve throughout the project life cycle.
- In project management, a budget is considered a deliverable, not a tool to save money. It is a success metric.
- Budget is a tool to communicate what is needed and when it is needed with the stakeholders.
- Budget creation happens in the initiation phase of the project and in conjunction with the scheduling process.
- This is important because you won't be able to continue with some of your deliverables or action items, if you don't know how much certain activities will cost, and whether you have the necessary funds available.
- Budgeting is not a one-size-fill-all operation and as the project manager, you will have to prioritize where you allocate funds within the project to ensure maximum output.
- Goals of most projects:
  - Improve workforce productivity
  - Increase revenue,
  - Save cost
- You should not go over or under the budget, because that affects how your project is funded next year, and it may leave you with less money next year. A project manager must show the requested amount of money was used in order to secure enough budget for future projects.
- When creating a budget:
  - Understanding stakeholder needs: (their expectations).
  - Budgeting for surprise expenses:
  - Maintaining adaptability
  - Reviewing and reforecasting throughout the project
- Several factors to consider when creating a budget:
  - Forecast: a cost estimate or prediction that helps you calculate the correct expenses for a particular time period.
  - Resource cost rates (cost of resource such as labor, tools, equipment, materials, software)
  - Reserve analysis: account for any buffer funds you may need. It is a method to check for remaining project resources. Review all potential risks and see if you need buffer funds.
  - Contingency budget: Money that is included to cover potentially unforeseen events that aren't accounted for in a cost estimate. This is to compensate for the uncertainty that occurs in cost and time estimates, as well as unpredictable risk exposure.
  - Cost of quality: Costs that are incurred to prevent issues with products, processes, or tasks. It includes:
    - prevention costs,
    - appraisal costs,
    - internal failure costs,
    - external failure costs.
- Categorize different types of costs
  you may need to account for both **direct costs** and **indirect costs** in your project budget. Categorize these different types of costs in your budget so that you can ensure you are meeting the requirements of your organization and customer.
  - **Direct cost**: These are costs for items that are necessary in order to complete your project
    - Wages and salaries of employees and contractors
    - Materials costs
    - Equipment rental costs
    - Software licenses
    - Project-related travel and transportation costs
    - Staff training
  - **Indirect cost:** costs for items which do not directly lead to the completion of your project but are still essential for the project team to do their work. They are also referred to as **overhead costs:**

    - Administrative costs
    - Utilities
    - Insurance
    - General office equipment
    - Security
- Develop a baseline budget: A **baseline budget** is an estimate of project costs that you start with at the beginning of your project. Once you have created a budget for your project and gotten it approved, you should publish this baseline and use it to compare against actual performance progress. This will give you insight into how your project budget is doing and allow you to make informed adjustments. It is important to continually monitor your project budget and make changes if necessary. Be aware that budget updates can require the same approvals as your initial budget. Also, you should “re-baseline” your budget if you make significant changes. Re-baselining refers to when you update or modify a project's baseline as a result of any approved change to the schedule, cost, or deliverable content. For example, if you have a significant change in your project scope, your budget will likely be impacted.

Managing a project budget

- There are techniques to ensure you are not underestimating or overestimating.
    - Historical data: review past projects to get an idea-See what past project managers did right and wrong.
    - Leverage experts: gather expert insights to use those more effectively. Reaching out to colleagues who did similar projects in the past. If you are getting advice from external people, make sure you don't share any confidential info.
    - Bottom-up: Think about all the parts of the project from the beginning to the end. Make a list of everything and adding all of that together.
    - Confirm accuracy: double check all number
    - Baseline: Your baseline is the dollar amount that you'll use to measure against, to find out if you're on track or not, and to measure the success of your project.
- Creating a thorough budget is important to the success of your project. In the bottom-up approach:
    - Break project into tasks
    - Estimate cost of each item (account also for material costs, employee allocation, equipment, etc.)
    - Add estimates together
    - Add contingency and tax
    - Seek approval from key stakeholders
- You also need fixed costs that won't change during the project (job advertisements)
- Travel expenses and meals
- Add buffers and reserves
- In the budget, you also need a planned cost vs actual cost.
- Every project has an estimated cost and the final cost.
- Here is a template:



- Maintaining a project budget (being under or over budget): check on the budget regularly. This is important to enforce accountability.
- By monitoring your budget regularly, you check if the plans you set into action are actually being implemented on both a financial and operational level.
- Milestones are a great opportunity to re-review the budge, to identify if anything needs to be reset or revisited throughout the project. These are checkpoints.
- Cost control: practice where a project manager identifies factors that might impact their budget and then creates effective actions to minimize variances. This is proactive budget management.
- To control the cost:
    - Establish a sign off plan and inform the appropriate stakeholders of any changes that occur. For example, you shouldn't approve a new cost or item if it hasn't been agreed upon or if it isn't within the scope, and you shouldn't be spending money if it's not pre-approved by your stakeholder or project sponsor.
    - Mange changes as they made (track everything).
    - Accept that budget misses will happen
        - Overbudget causes the company to have less money for other projects/items.
        - Underbudget is not a good sign, means the project manager did not do a good job at initial estimating. It is an indicator of less than satisfactory project management. Underbudget may means you could have possibly had extra resources or better quality output. The company may get the impression that if you can do this project under budget, you can do future projects under the budget as well.
    - Adequately account for, adapt, and manage your budget with that risk in mind.
- Budget challenges:
    - **Budget pre-allocation:** You may encounter situations where your budget is already set before you even start the project. Some organizations follow strict budgeting cycles, which can lead to cost estimations taking place before the scope of the project is completely defined. If you are given a pre-allocated budget, it is important to work with

your customer to set expectations on scope and deliverables within the allocated budget. To deliver a great product within your allocated budget will require detailed planning.
    - **Inaccurately calculating TCO (total cost of ownership):** underestimating the **total cost of ownership (TCO)** for project resources. TCO takes into account multiple elements that contribute to the cost of an item. It factors in the expenses associated with a product or service over its lifetime, rather than just upfront costs. For example for a car, buying cost, registration, insurance, gas, maintenance. The same applies to budgeting of a project.
    - **Scope creep:** when changes, growth, and other factors affect the project's scope at any point after the project begins.
- Budget terms:
    - **Cash flow** is the inflow and outflow of cash on your project. As a project manager, this is important to understand because you need **funding** (cash into your project) to keep your project running.
- CAPEX and OPEX
    - Organizations have a number of different types of expenses, from the wages they pay their employees to the cost of materials for their products. These expenses can be organized into different categories. Two of the most common are **CAPEX (capital expenses)** and **OPEX (operating expenses)**.
        - CAPEX (capital expenses) are an organization's major, long-term, upfront expenses, such as buildings, equipment, and vehicles. They are generally for assets that the company will own and keep.
        - OPEX (operating expenses) are the short-term expenses that are required for the day-to-day tasks involved in running the company, such as wages, rent, and utilities. They are often recurring.
- **Contingency reserves** Sometimes, a project hits a snag and incurs additional expenses. One way to prepare for unplanned costs is by using **contingency reserves**. Contingency reserves are funds added to the estimated project cost to cover identified risks. These are also referred to as **buffers**. To determine the amount of your contingency reserves, you will need to go through the risk management process and identify the risks that are most likely to occur.
- **Management reserves:** While contingency reserves are used to cover the costs of identified risks, **management reserves** are used to cover the costs of unidentified risks. For example, if you were managing a construction project and a meteor hit your machinery, you could use management reserves to cover the costs of the damage. Contingency reserves are an estimated amount, whereas management reserves are generally a percentage of the total cost of the project. To determine a project's management reserves, you can estimate a percentage of the budget to set aside. This estimate is typically between 5–10%, but the amount is based on the complexity of the project.

Intro to Procurement:

- **Procurement:** obtaining all of the materials, services, and supplies required to complete the project.
- **Vendors:** Individuals or businesses who provide essential goods and services.
- You search for vendors when a skill does not exist within the company.
- Vendor management (not every project requires vendors):
    - Sourcing vendors
    - Getting quotes for vendors' work
    - Deciphering which vendors will fulfill your needs
    - Negotiating vendor contracts
    - Setting deadlines for vendors
    - Evaluating performance
    - Ensuring vendors are paid
- Not every single project require procurement, but prog manager should be ready if the needs come up.
- There five step for the procurement process:
    - **Initiating**: planning process of defining what help you may need outside of your current resources to hit the project goals. Once you've decided which items you need to outsource, compare each of those items specifications, components, quality measurements, standards, and characteristics with your project's requirements.
    - **Selecting**: deciding what supplies you need and which vendors you'll go through. Research and assess various vendors and suppliers, and try to find out if your preferred vendors have a reputation for delivering quality work on time.
    - **Contract writing**: developing, reviewing, and signing the contracts. Requires excellent attention to detail. Whether the contract is written by you or by the vendor, you will almost always want to consult with a legal and compliance team to ensure that everything in the contract is ethical and legal.
    - **Control**: when you make payment, set up logistics and requirements to maintain quality, and ensure the service agreement is being met.
    - **Completion**: measure the success of the procurement. Ask: Were the materials created good quality? Were there any issues with labor contracts? How were your relationships with vendors?
- There are differences in procurement in the context of Agile and versus traditional.
    - Agile procurement management (can change more easily than traditional method- the team reviews deliverables on a recurring basis and consistently addresses feedback):
        - collaborative with both the project team and the end supplier
        - Emphasis on the relationship between these parties
        - Project team plays a larger role in identifying what needs to be procured
        - Rather than featuring contracts that are based on fixed deliverables, agile procurement management tends to have a living contract that can be adapted based on the evaluation of the project.
        - You should have a good relationship with the suppliers as you may need to renegotiate the contract at multiple points during the project.
    - Traditional procurement management:
        - Focus on standard contracts with clear terms and deliverables
        - Project manager may be responsible for end-to-end procurement
        - Contracts may feature lengthy and extensive documentation. Basically you outlined clearer workstreams and may not have to pay for unpredictable changes.
        - It is much more protected from unforeseen circumstances and may not have to pay for unpredictable changes.
        - You won't necessarily have the room to negotiate contracts if something changes, and you may have start over.
- Procurement documentation:
    - Non-Disclosure Agreement (NDA) at the initiating phase: a document that keeps confidential information within the organization. It is fixed during the project.
    - Request For Proposal (RFP) at the selecting phase: a document that outlines the details of the project. This is to solicit bids from vendors. It is fixed during the project.

- Statement Of Work (SOW) in contracting phase: sent after the vendor is selected. It is not fixed and it evolves as the project goes on.
  A document that clearly lays out the products and services a vendor or contractor will provide for the organization. A description of the needs and the requirements. What is expected from the vendors and contractor.
  Project managers often consults with **Subject Matter Experts (SMEs)** for feedback.

Navigating procurement challenges:

- How you can get support from other departments and team members as procurement goes forward.
- You need to constantly evaluate the terms of the contract with vendors. You can get help from the legal department.
- Importance of ethics when partnering with vendors. There is a lot that can be done to ensure that businesses are operating in an ethical way.
- There are a couple of steps to safeguard ethical procurement.
  - First, knowing your business' legal requirements.
  - Project Manager Institute (PMI) has a code of ethics that you can access as a member of credential holder.
  - Honesty, responsibility, respect, and fairness are the values that drive ethical conduct for the project management profession. If some terms are not clear, don't hesitate to ask the legal team.
- An **ethical trap** is an ethical dilemma that causes us to make a certain decision without regard for our ethical principles. You may face ethical traps throughout the course of a project. However, ethics can be of particular concern when it comes to procurement. Potential unethical risk (ethical traps):
  - Bribery or corruption (depends on the country rules)
  - Sole-supplier sourcing: In some scenarios, you may need to perform non-competitive procurement, which is when a company restricts the bidding process to one supplier. With **sole-supplier sourcing**, vendors may reach out to buyers before a bid is even requested. When the buyer's organization decides to work with that vendor based on their previously-established relationship, that limits competition before the bidding has even begun. When this happens, companies and the public miss out on the advantages of competition, such as reasonable pricing, product quality standards, or speedy delivery options.
  - Interaction with state-owned entities: Government agencies may have tighter restrictions and regulations in regard to sourcing, and you don't want to do anything unethical without even knowing it
- To avoid ethical traps:
  - Understand the legal requirements for your procurement (depends on the country).
  - Stick to your ethical codes. Check PMI code of ethics.
  - Test your ethics: ask yourself: **Shame:** Would you be ashamed if someone knew what you did? **Community:** Would you want your friends to know the decision you made? **Legal:** Would you face legal action if you took this action? **Situation:** Would your actions be justified in this situation? **Consequence:** Would a negative outcome be worth your actions?
- After the contracts have been signed by your contractors, make sure to carry out your assurance duties. This may include things like auditing each task and cost, executing quality control, or even approving invoices.

Module 4: managing risks

- **Objectives**
  - Define and talk about risk management concepts
  - Explain how risk management can help protect your project from failing
  - Identify risk types and how to measure their impact on a project
  - Communicate and resolve identified risks using a mitigation plan

Understanding risk management

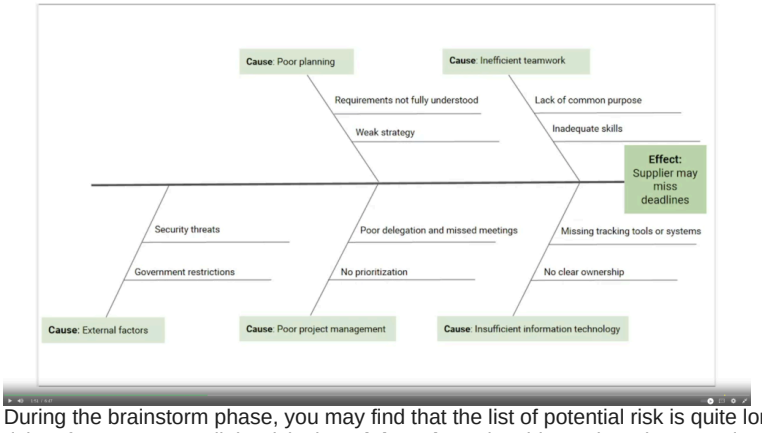
- No project goes 100% by the plan.
- **Risk:** a potential event that can occur and can impact your project.
- As a project manager, you think of risk as a hypothetical. So, these are not events that will definitely happen, but because there is a possibility that they could happen, it is your responsibility as the project manager to identify and plan for those risks.
- **Issue:** a known or real problem that can affect the ability to complete a task. In other words, if a risk actually happens, the risk becomes an issue.
- **Risk management:** the process of identifying and evaluating potential risks and issues that could impact a project.
- Risk management is part of the planning process.
- Risk management provides an understanding of
  - What could go wrong
  - Who you'll need to consult
  - How the risk could be mitigated
- Part of being proactive and planning ahead is identifying potential risks and how to solve them.
- If you don't plan ahead, you may put your project at risk of not meeting its project goal, its timeline, or its success criteria.
- By failing to plan for risk, you also fail to think through the many different ways that your project could pivot and still meet its goals even if an issue does arise.
- Risk can affect projects in a variety of ways that are difficult to foresee.
- Note also that issues will come up throughout the project you did not or could not have planned for, and that is okay. In these situations, figure out the root cause of the problem and come up with a solution.
- Risk management is an ongoing practice throughout the life cycle of your project. It typically involves some variation of these five steps:
  1. **Identify the risk.** The first phase of the risk management process is to identify and define potential project risks with your team. After all, you can only manage risks if you know what they are.
  2. **Analyze the risk**. After identifying the risks, determine their likelihood and potential impact to your project. Serious risks with a high probability of occurring pose the greatest threat.
  3. **Evaluate the risk**. Next, use the results of your risk analysis to determine which risks to prioritize.
  4. **Treat the risk**. During this phase, make a plan for how to treat and manage each risk. You might choose to ignore minor risks, but serious risks need detailed mitigation plans.
  5. **Monitor and control the risk.** Finally, assign team members to monitor, track, and mitigate risks if the need arises.
- When you think about risks, it is likely that you automatically think of potential negative events. But when identifying risks, it is important to also consider the good things that could happen, which are considered **opportunities**. An opportunity is

a potential positive outcome of a risk. It is important to recognize opportunities and to capitalize on them as they appear so you can reach your project goals faster, more cheaply, or with less effort. Some examples of opportunities include:

- Completing a milestone ahead of schedule
- Discounted materials
- Availability of additional resources (people, investments, equipment)

Identifying and assessing risks

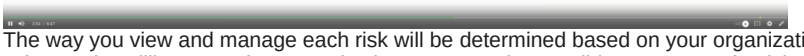
- Tools and techniques to identifying risk.
  - Brainstorming: Using RACI chart to know who evolve in the brainstorm process. The best team is a diverse one, which includes individuals from various roles, backgrounds and experiences. A great tool that you can use during brainstorming is called a **cause-and-effect diagram**, also sometimes known as a (**fishbone diagram or Ishikawa diagram**). Cause-and-effect diagrams show the possible causes of an event or risk and are very useful at risk management.



During the brainstorm phase, you may find that the list of potential risk is quite long. And it is ok. How to know which risk to focus on? Put all the risks in a **risk register** (a table or chart that contains a list of risks). Then you adopt the risk assessment technique as in the next step.

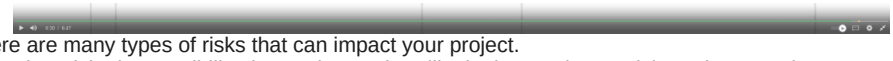
- Risk assessment: the stage of risk management where qualities (how likely it happens) of a risk are estimated or measured. There are a few ways to assess risks, but one we'll focus on is creating a probability and impact matrix. A probability and impact matrix is a tool used to prioritize project risks. **Impact** refers to the damage a risk could cause, if it occurs. High impact (substantially alters the project), Low (slight impact, but not derailing project). **Probability** is the likelihood that a risk will occur. Based on the Impact and Probability, we can calculate the **inherent risk** (measure of risk calculated by its probability and impact). Inherent risk is also measured on low, high and medium scale as indicated in the table.

Inherent Risk				
		Impact		
		Low	Medium	High
Probability	High	Medium	High	High
	Medium	Low	Medium	High
	Low	Low	Low	Medium



- The way you view and manage each risk will be determined based on your organization's **risk appetite**, which refers to the willingness of an organization to accept the possible outcomes of a risk. Based on this table, you need to update the risk register.

ID	Risk Description	Risk to Project	Mitigation Plan
1	Vendor is one day behind schedule to meet an important milestone	Low	Check in with the vendor to determine if the project manager can help remove any blockers to progress
1.1	Vendor is far behind schedule to meet an important milestone	Medium	Hold daily check-in meetings to get updates on progress and remove blockers where necessary
1.2	Vendor misses an important deadline	High	Hire a new vendor



- There are many types of risks that can impact your project.
  - Time risk: the possibility that project tasks will take longer than anticipated to complete
  - Budget risk: the possibility that the costs of a project will increase due to poor planning or expanding the project's scope.
  - Scope risk: the possibility the a project won't produce the results outlined in the project goals.
- External risk: risks resulting from factors outside the company that you have little to no control over (storm, change in the regulatory rules).
- We cannot list/predict all the risks, but if we have a plan, we can better setup to deal with whatever comes your way.
- Single point of failure risk: a risk that has the potential to be catastrophic and halt work across a project. Means no one can work on their tasks until the issue is resolved. As a project manager you need to identify and monitor potential single points of failures, since they can be detrimental to the project timeline, budget, or scope. Ex: power outage/inaccessible database.
- Another source of risk: **dependencies:** a relationship between two project tasks, where the start or completion of one depends on the start or completion of the other. **A dependency** must be addressed before a task is completed. So, they are huge source of risk. If you don't plan for dependencies, you might risk an impact to your budget, schedule, or the project outcome. **There are two types of dependencies:**
  - Internal: dependencies within the project that you and your team have control over
  - External dependencies you don't' have any control over (vendors, ...)
- Four types of **dependencies:**
  - **Finish to Start:** Task B can't start until Task A has finished
  - **Finish to Finish:** Task A must finish before task B can finish
  - **Start to Start:** Task B can't begin until task A begins.
  - **Start to Finish:** Task A must begin before Task B can be completed.

Mitigating and communicating risks

- Risk mitigation plan: finding ways to eliminate or reduce the impact of potential risks to your project.
- Four types of risk mitigation:
  - **Avoid the risk:** by taking action that will eliminate the possibility of risk.
  - **Accept the risk** by accepting the possibility that this risk can happen. You are ok with the risk if it does happen. And allocate more fund for it. **Active acceptance of risk** usually means setting aside extra funds to pay your way out of trouble. **Passive acceptance of risk** is the "do nothing" approach. While passive acceptance may be reasonable for smaller risks, it is not recommended for most single point of failure risks.
  - **Minimize-reduce or control the risk**: Mitigating a risk involves trying to minimize the catastrophic effects that it could have on the project. mitigation strategies referred to as **workarounds.**
    Here we can use a decision tree
  - **Transfer the risk** by shifting the risk from one party to another (outsourcing the risk/task to another supplier.)
- How to document your risk plan decision: Living document that contains information regarding high level risks and the mitigation plans for those risks.
- The risk management plan should be updated regularly to add newly-identified risks, remove risks thar no longer relevant, and include any changes in the mitigation plan.
- After the risk plan is prepared, you need to share it with the stakeholders. If you don't tell your stakeholders about important risks, they may be less equipped to help you if an issue arises (they may not provide you with more money or resources should you require them.).
- How to communicate risks to stakeholders depends on the severity of the risk. For low level risk, maybe use the weekly planning update is enough. For medium level risk, you can use a direct email. The serious nature of high-level risks requires a thorough and direct level communication. Discuss in the meeting and include in the agenda list. Discussing risk with stakeholders may uncover other risks.

Module 5: organizing communication and documentation

- **Objectives**
  - Great communication strategies
  - Creating a successful communication plan for any project

Creating an effective communication plan

- Many times, what contributes to the success or failure of a project team comes down to whether or not everyone understands what's happening and how their tasks contribute to the project's goals.
- What is communication? The flow of information and inclueds what is shared, how it's shared, and with whom.
- Effective communication is:
  - Clear
  - Honest
  - Relevant
  - Frequent (but not too frequent- There is such a thing as communication overload)
- Types of communications:
  - Meetings
  - Email
  - Phone call
  - Written document
  - Formal presentation
- Communication needs to happen throughout the entire life cycle of the project.
- As a project management, you are responsible for creating a consistent flow of communication throughout the project.
- As the project manager, it is important to develop a communication plan for the duration of your project. Good communication helps your project run smoothly, leads to better outcomes, and supports a healthy team culture. You can use these four tips to foster effective communication within your team:
  1. Recognize and understand individual differences
     - You can encourage open, inclusive communication by:
     - Not making assumptions about your audience's backgrounds, identities, or experiences.
     - Being mindful of your own biases.
     - Using appropriate, professional, and neutral language.
     - Including, respecting, and being curious about diverse points of view.
  2. Brainstorm and craft the appropriate message

     In your communications, always be clear about your reasons for reaching out:

    - What channels can your audience use to contact you or the team?
    - Are you conveying information?
    - Are you asking for input?
    - Are you clarifying an issue?
    - Are you resolving a problem?

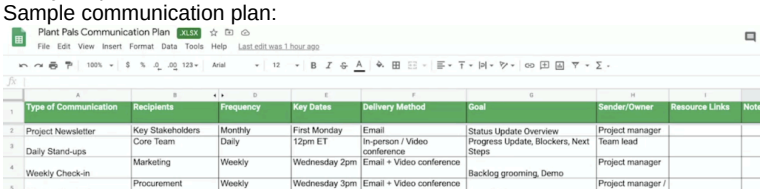
  Some team members may require detailed information, while others may only need an overview of the situation.

3. Deliver your message
   As you craft your message, think about which methods are available and appropriate for communicating with various members of your team, whether that is in person, in a video conference, over the phone, via email, or in a meeting. Choosing the right method is especially important if you have team members or stakeholders in different regions and time zones. Also, be sure to:
   i. Avoid including any sensitive or potentially private information.
   ii. Assume everyone at the company will receive the communication.
4. Obtain feedback and incorporate that feedback going forward

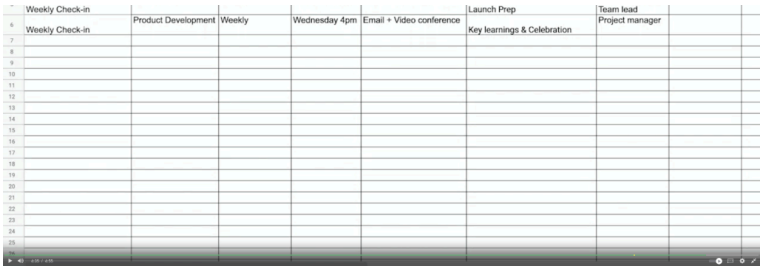
   Communication doesn't end when you deliver your message, so be sure to follow up with your audience by:

    - Checking to make sure your message was clear.
    - Asking them for feedback.
    - Encouraging open communication.
    - Responding to questions quickly.

- Communication plan: organizes and documents the process, types, and expectations of communication for the project.
- Planning communications upfront has the following benefits:
    - Improves communication overall
    - Keeps people engaged and motivated
    - Gets stakeholders involved in effective conversations
- Communication plan helps with effective change management.
- Communication plan is to address these questions (who, what, why, how):
    - What needs to be communicated
    - Who needs to communicate
    - When communication needs to happen (how often)
    - Why and how to communicate
    - Where the information being communicated is stored
- Not everyone needs to receive the same amount of information at the same time. Key stakeholders will get their information less often, like in a monthly, high-level summary, email, or project review meeting. But core team gets detailed info through daily email updates, or check-ins.
- To design communication plan, you can refer to the RACI chart and stakeholder map to find what type of information works best for all.
- People absorb information in different ways. Modes of information processing:
    - Visuals (chart, graph)
    - Listening
    - Reading and Analysis
    - Talk with others
- Tips to create the communication plan:
  1. **Identify, identify, identify** Before you begin creating the plan, answer these questions to ensure that you have all of the relevant information:
     - **Project stakeholders**: Have you created a RACI chart or stakeholder map of all your stakeholders? Who is your audience? Who will need to be informed at different points during the project life cycle?
     - **Communication frequency and method**: When and how often should you check in with your stakeholders? What methods of communication do they prefer? How much detail does each stakeholder need?
     - **Goals**: What is the goal of your communication? Do you need a response? Are you trying to encourage engagement or simply providing an update?
     - **Barriers**: Are there any time zone limitations? Language barriers? Do some stakeholders require time to reply or respond (e.g., an executive)? Are there any privacy or internet access issues?
  2. **Document and develop** Choose a tool or template to document all of your communication needs, and begin developing your plan. Once you understand the basic elements (stakeholders, communication methods, goals, and barriers), it's time to work out the details! Here are some tips:
     i. **Add a column for notes.** Project management is not one-size-fits-all, and there are a lot of pieces that need to be tracked. For instance, if you are reaching out to a senior leader or executive, do you need to copy anyone else on the email? If a stakeholder is out of office or unavailable on certain dates, do you have a backup plan? Add notes to set reminders and any additional relevant details.
     ii. **Use formatting to highlight any key details in the plan.** Is there a launch announcement or an urgent decision needed for the project to move forward? Highlight these pivotal elements in a different font color or size to stress their importance.
     iii. **Ensure that the team can access your document.** Share the plan with your team. Allowing your team to review the document ensures that they are aware of the plan and gives them a chance to offer feedback. Sharing the document also serves as an extra check to make sure you aren't missing any crucial pieces.
     iv. **Test your plan.** If you are sending a team-wide email or link, send a test email to yourself or a colleague. If you are planning a virtual presentation, be sure to test the visual, audio, and other technical aspects in advance. That way, you can minimize any technical problems.
  3. **Check in** Once your communication plan is out in the world, check in with your audience about the effectiveness of your plan. Scheduling routine check-ins will help you understand what is and is not working so you can improve your plan.
- Sample communication plan:



Type of Communication	Recipients	Frequency	Key Dates	Delivery Method	Goal	Sender/Owner	Resource Links	Not
Project Newsletter	Key Stakeholders	Monthly	First Monday	Email	Status Update Overview	Project manager		
Daily Stand-ups	Core Team	Daily	12pm ET	In-person / Video conference	Progress Update, Blockers, Next Steps	Team lead		
Weekly Check-in	Marketing	Weekly	Wednesday 2pm	Email + Video conference	Backlog grooming, Demo	Project manager		
	Procurement	Weekly	Wednesday 3pm	Email + Video conference		Project manager /		



	Weekly Check-in				Launch Prep	Team lead	
6	Weekly Check-in	Product Development	Weekly	Wednesday 4pm	Email + Video conference	Key learnings & Celebration	Project manager

Document project planning resources

- To keep all teams on the same page, it was important for everyone to store their plans and reports in one centralized place.
- Documentation storage and sharing is very important. Having plans in one place makes communication quicker easier, and more streamlined.
- Documenting and organizing plans provides visibility and accountability.
- Having up-to-date plans will help ensure there's no room for miscommunication.
- Managing permissions of your files and folders: If someone isn't a core part of the project team, you might not want them to have full access to all of the meeting notes. Instead summarize the relevant information into a status report for those who need to stay informed of final outcomes but don't need all background information.
- Continuity is another reason to keep all the project documents in a place. Let's say you got sick and needed to take leave of absence. Another project manager needs to step in, and it is good that all your documents are in the one place.
- Make sure people in relevant roles are granted access to documents so that even in your absence, the project can carry on.
- Documenting your plan and making them available is part of project management best practice called **knowledge management**. It is a way of ensuring that project data can be accessed in the future by others who need it for informing decisions or planning similar projects.
- Figuring out what information to share is even more important when you are working on a project that have sensitive data. Protect sensitive data from unauthorized viewers.
- Only share information on a need-to-know basis. It is your job to present the right information at the right time to the right people.
- Personally Identifiable Information (PII): Information that could be used on its own to directly identify, contact, or precisely locate an individual (email addresses, mailing addresses, phone numbers, precise locations, full names). Know who show have access to this level information.
- Have all of your project resources documented and linked so that you or anyone on the project can access what they need quickly. Use a spreadsheet that links all the files to the storage like share points.

Coursera: Google Project management II

Monday, July 22, 2024 7:45 AM

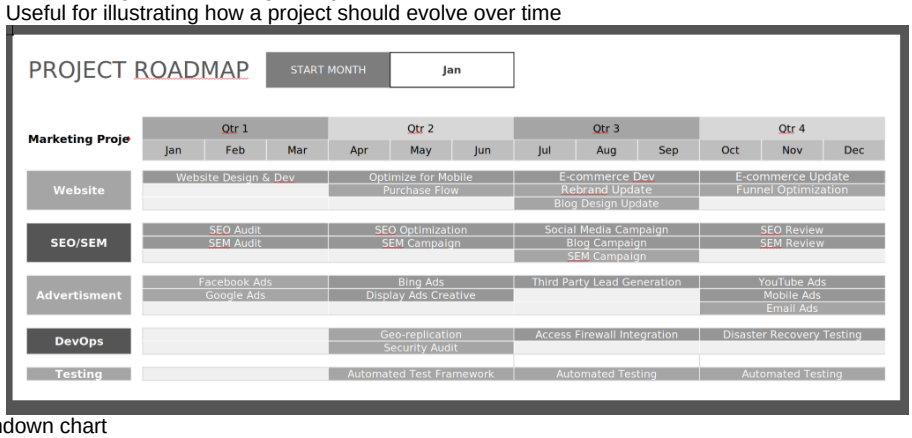
Course 4- Project Execution: Running the project – July 22

Module 1: Intro to project execution

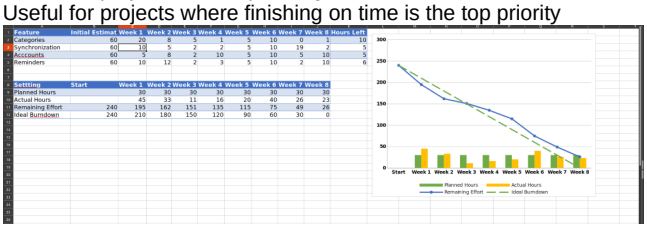
- **objectives**
  - How to put a project plan into action
  - Watching risk and unforeseen changes in the project (what to do when a risk actually materializes)
  - How to track and measure your project's progress
  - Use continuous improvement and quality management techniques
  - Use and analyze data to inform your decision-making
  - Team management and the fundamentals of influencing
  - Effectively lead your team to the finish line
  - Tools for effective team communication
  - Organizing and facilitating meetings
  - Close a project
  - Celebrating a job well done with your team

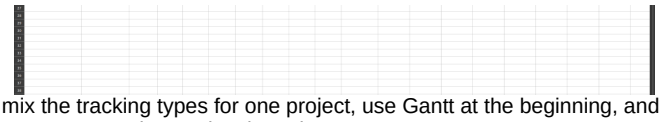
Tracking and measuring project progress

- Tracking: a method of following the progress of project activities.
- Deviation: anything that alters your original course of action. Deviations from the project plan can be positive or negative (ahead of schedule or behind the schedule).
- Tracking:
  - makes key project information transparent, and transparency is essential for accurate decision-making.
    There are many aspects in each project, tracking helps keep all team members and stakeholders in touch with deadlines and goals.
  - also crucial for recognizing risks and issues that can derail your progress.
  - helps build confidence that the project is set to be delivered on time, in scope and within budget.
- Commonly tracked items
  - Project schedule (deliverables on time)
  - Status of action items, key tasks and activities
  - Progress toward milestones
  - Costs
  - Key decisions, changes, dependencies and risks to the project
- Various types of tracking methods:
  - GANTT chart
    - Useful for staying on schedule
    - Useful for project with many dependencies, tasks, activities, or milestones
    - Useful for larger project teams, large teams, because ownership and responsibilities are explicitly laid out visually
    - Can be used for all types of projects, but mainly used in waterfalls project management
  - Roadmap
    - Useful for high-level tracking of large milestones
    - Useful for illustrating how a project should evolve over time

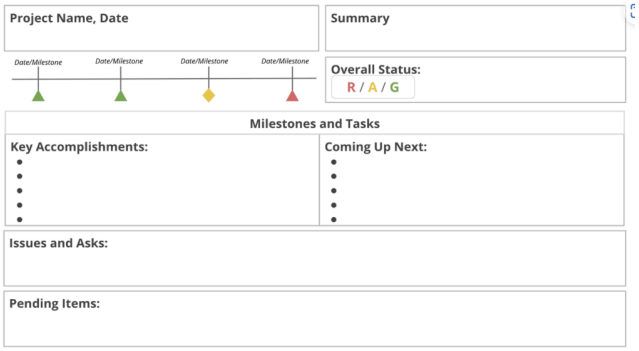


  - Burndown chart
    - Burndown charts are typically used by Agile Scrum teams.
    - Burndown charts reveal how quickly your team is working by displaying how much work is left and how much time remains to complete the work. The main uses of a Burndown chart are to keep the project team on top of targeted completion dates and make them aware of scope creep if it occurs.
    - The most granular chart
    - Measures time against the amount of work done and the amount of the work remaining
    - The goal to keep the project team on top of targeted completion dates and to keep the team aware of scope creep as it occurs.
    - Useful for projects that require a granular broken-down look at each task.
    - Useful for projects where finishing on time is the top priority





- You can mix the tracking types for one project, use Gantt at the beginning, and burndown as you get to the end of the project.
- **Project status report:** it contains these items:
  - **Project name**
  - **Date**: PM creates many status report during the course of the project. Reports can be created weekly, monthly depending on the stateholders.
  - **Summary:** The summary condenses the project's goals, schedule, highlights, and lowlights in one central place for easy stakeholder visibility. Usually, the summary section will be followed by, or grouped with, the timeline summary and the overall project status.
  - **Status**: The status of the project illustrates your actual progress versus your planned progress. In project management, a common way to depict this is through **RAG** (red, amber, green), or Red-Yellow-Green, status reporting**.** RAG follows a traffic light pattern to indicate progress and status. Red indicates that there are issues that need resolution and that the project may be delayed or go significantly over budget. Amber/Yellow means that there are potential issues with schedule or budget, but that the issues can likely be resolved with corrective actions. And green means the schedule and budget are doing fine and that the project is on track. You can use RAG to indicate the overall project status, as well as milestone status.
  - **Milestones and tasks:** In a project plan, you will typically depict the tasks and milestones as 'not started,' 'in progress' or 'completed*'* at an item-by-item level. But, in the project status report, it is common to summarize these items into two categories to better communicate the status. You'll use **key accomplishments** to detail what has happened, and **upcoming** to detail what big milestones you will accomplish next.
  - **Issues:** The issues include your project's current roadblocks and potential risks. Status reports are an important opportunity to set expectations with your stakeholders. If your project status is red or amber, you can flag what is preventing you from being where you planned to be. You can also use this opportunity to state your plan to get the project back to green, and ask for any resources or help you may need to do so.
- If you need to share a status report with your team for a project that contains multiple layers of complexity, it may be best to format the report in a **spreadsheet** in order to keep track of all the moving parts.
- Sample status report



Managing changes, risk and dependencies

- Risk: a potential event that might occur and could impact your project.
- Examples of project risk:
  - A contractor misses a deadline
  - A new tool leads to a communication breakdown
  - Workload increases due to the implementation of an unforeseen policy
- When a risk happens, it causes a change to the project plan: anything that alters or impacts the tasks, structures, or processes within a project. Changes are unexpected. Most of the time, change has a negative impact on the project (triangle: cost, scope, timeline).
- Few types of changes that can impact the project:
  - New or changing dependencies (tasks, activities, or milestones that are reliant on one another)
  - Change in priorities: scope change, etc.
  - Capacity and people
  - New limitation on budget and resources.
  - Scope creep
  - Force majeure (due to national and international crisis: an unforeseen circumstance that prevents someone from fulfilling the contract due to a major crisis.) It is uncommon (Union strike, pandemic, etc.)
- The project manager is in charge of the scope creep. To manage the scope creep, you need to refer to Statement of Work or RACI chart.
- You need to create or familiarize yourself with the process for requesting changes for your team or organization. The process may include:
  - A change request form: You and your stakeholders will use these forms in order to stay on top of, and adequately manage, any changes. This should be a self-explanatory document. Here is a sample of change request form, it should have all the items in the form:
    Project plan change summary template

Project Name	
Discussion Owner	Who's taking the lead in this discussion from the team?
Discussion type	Risk- opportunity
Teams Involved	List stakeholders and other teams involved
Expected outcome	What are you looking for from this discussion? For example: Other resources Priority call Technical help Schedule change awareness/approval Open discussion with stakeholders
Target date for discussion	When is this discussion happening? (most likely dedicated meeting but could be just an email thread)

Impacted Milestones/Goals	Which milestones are involved in the discussion? If possible reference the items from the project plan and use the same wording to help reviewers connect the dots.
Short description	Provide a short description of the situation. Are differences to the plan of record being proposed? If so, what is the basic change?
In-depth proposal	Proposed trad-offs with current plan
Background information	Describe which events or information drove this discussion request

- **Dependencies**: the links that connect one project task to another and are often the greatest source of risk to a project. The start of one task depends on the other tasks.
  - Internal dependencies: The relationship between two tasks within the same project.
  - External dependencies: Tasks that are reliant on outside factors, like regulatory agencies or other projects. They are not always in PM control, but PM should know about them.
  - Mandatory dependencies: Tasks that are legally or contractually required, like inspections.
  - Discretionary dependencies: Tasks that could occur on their own, but the team chose to make them reliant on one another.
- **Dependency management:** The process of managing interrelated tasks and resources within the project to ensure the overall project is completed successfully, on time, and in budget. Its four major steps:
  - Proper identification: Brainstorm all dependencies with the team and categorize them accordingly.
  - Recording dependencies:
    - a risk register should be created. A table or chart that contains your list of risks and dependencies. It should include the risk of dependency, the date, and all activities and task that might be impacted by the dependencies.
  - Continuous monitoring and control: schedule regular meeting to check in on the interrelated tasks, staying up-to-date on any progress being made and double checking for changes that will impact other tasks.
  - Efficient communication: Keep the team and stakeholders updated
- Risk: one way to manage risks, and hopefully, prevent any risk from materializing is to focus on managing the **changes and dependencies** as well as any **scope creep** in your project. If you can manage those two things, both changes and dependencies and scope creep, other types of risks become much easier to manage. If your dependencies are met on time, your team is less likely to fall behind schedule. If your scope is tightly-managed, you're less likely to incur changes to your budget or be forced to extend your timeline.
- To better manage risk, you need a risk register (as described before). To help prioritize risks within your risk register, you can calculate your **risk exposure:** a way to measure the potential future loss resulting from a specific activity or event. A good method to calculate risk exposure is to build a matrix like this one.

Inherent Risk				
		Impact		
		Low	**Medium**	**High**
Probability	**High**	Medium	High	High
	Medium	Low	Medium	High
	Low	Low	Low	Medium

- Whatever strategy you use to examine your risk exposure, your risks will need to be prioritized so that you know and your team knows which ones to give immediate attention to. For anything that has a high impact on your project, even if it has a low probability of occurring, make sure to have a mitigation plan in place.
- How will you handle this risk if it actually materializes? While a risk register is a great tool, it's still likely that some unforeseen risk will arise.
- It's almost impossible to account for every single risk over the course of a project. That's where the ROAM technique can help.
- In a ROAM analysis, you identify project issues and put them into one of the following four categories:
  - Resolved: The issue has been eliminated and no longer poses a problem.
  - Owned: The issue has been assigned to a team member who will monitor it through to completion.
  - Accepted: The issue is minor or cannot be resolved, so the team chooses to accept and work around it.
  - Mitigated: The team has taken action to reduce the impact of the issue (or reduce the likelihood of a risk that has not yet materialized).
- The ROAM technique—which stands for Resolved, Owned, Accepted, and Mitigated—is used to help manage actions after risks arise. Once a risk has materialized, you need to decide what to do with it. If a risk has been eliminated and will not be a problem, it goes into your "resolved" category. If you give a team member ownership over a certain risk and entrust them to handle it, that risk goes into the "owned" category and is monitored through to completion. If the risk has been "accepted," it has been agreed that nothing will be done about it. Finally, if some action has been taken such that the risk has been mitigated, either reducing the likelihood of it occurring or reducing the impact to the project, it goes into the "mitigated" category. After each risk is placed into a category, the team will discuss each risk and decide which should be prioritized.
- Contingency plan == mitigation plan

Communication issues to stakeholders

- Escalation: the process of enlisting the help of higher level project leadership or management to remove an obstacle, clarify or reinforce priorities, and validate next steps. Escalation is not a negative event in project management, should be encouraged, used often, even celebrated.
- Escalations are healthy and
  - act as a checks and balances tool to make sure appropriate action is being taken.
  - Generate speedy decision making
  - Reduce frustrations
  - Encouraging participation in solving the issue.
- Before starting work on a project, the project manager, the team, and the project sponsor should establish escalation standards and practices.
- How do you know when to escalade? A project manager should escalate an issue at the first sign of critical problems in the project.
- Critical problems are issues that may (anything that affects time, budget, and scope)
  - cause a delay to a major project milestone,
  - Cause a budget overruns
  - Can result in the loss of a customer
  - Push back the estimated project completion date
- Escalation is great to prevent two common issue within a project:
  - trench wars: when two peers or groups can't seem to come to an agreement and neither party is willing to give in.
  - bad compromises: when two parties settle on a so-called solution but the end product still suffers. We should not settle, just because it is a mean to end. You may need to make hard choices for the greater good.

- How to communicate change with your project team members and stakeholders?
- Which communication tactic is appropriate? Use your own judgement.
  - When communicating a small change that will affect an individual, it's a good idea to send an email.
  - When there is a big change within your project that impacts more than one person and is likely to change the budget, deadline, or scope of the project, you'll want to have a team meeting.
  - One useful tactic to keep in mind when navigating these changes in your project is called a timeout.
    - Timeout: taking a moment away from the project in order to take a breath, regroup, and adjust the game plan. A timeout may temporarily disrupt your momentum, but it may be absolutely necessary to set you up for success in the long run.
    - You may want to take a timeout when the client wants to redefine the scope of the project or if team members get reassigned to other project and your need a plan to backfill them.
    - This timeout is a chance for the project team to evaluate the changes so they can adjust the plan as needed. Throughout the process, you will want to hold meetings in order to discuss successes, setbacks, and possible future improvements to the project.
    - These meetings are called retrospectives. **Retrospectives** are held throughout the project's life cycle. A **retrospective** focuses on identifying the contributing causes of an incident or pattern of incidents without blaming one individual.
- Effective **escalation** emails:
  - **Maintain a friendly tone:** You may feel tempted to get straight to the point, especially when dealing with a stressful and time-sensitive problem. But keep in mind that it is important to address issues with grace. Consider opening your email with a simple show of goodwill, such as “I hope you’re doing well.” When describing the issue, aim for a blameless tone. Above all, keep the email friendly and professional.
  - **State your connection to the project:** Introduce yourself early in the email if you have less familiarity with the project stakeholders. Be sure to clearly state your name, role, and relationship to the project.
  - **Explain the problem:** Clearly state the problem you need to solve. Provide enough context for the reader to understand the issue, but aim to keep your message as concise as possible.
  - **Explain the consequences:** how this issue is negatively impacting the project or how it has the potential to negatively impact the project later in the project timeline.
  - **Make a request:** This is the central piece of a strong escalation email. In this section, you propose a solution (or solutions) and state what you need from the recipient. A thoughtful solution accompanied by a clear request lets the recipient know how they can help and moves you toward a resolution.
- Sample email:
- To: knelson@graciousgiftbaskets.com, gabrielmendoza@graciousgiftbaskets.com ***[Your stakeholders]***

  Subject: ***[Action required]*** Decision needed to make progress on Holiday Scents project

  Hi Karen and Gabriel,

  [Keep it friendly and state your connection to the project] I hope you are doing well. As you may know, I have been managing our Holiday Scents product line, which is scheduled to launch in October.

  [Explain the problem] I would like to bring an issue to your attention. The baskets in this product line will include scented candles, and we placed an order with Candlemakers, Inc. for 5,000 candles to be delivered to the warehouse by Friday to prepare for our first customer shipment. To date, we have received 3,000 of the 5,000 candles. Unfortunately, many of the candles we have received so far fail to meet our quality standards. The packaging is damaged, or the candles themselves are broken.

  [Explain the consequences] This puts our customer satisfaction rates at risk. Failure to meet the quality requirements for the candles by Friday will result in postponing the product launch by three weeks. If this delay occurs, we will incur an additional cost of $20,000 because we will need to order a new shipment of candles and review the quality standards of each to ensure that they meet our contractual agreements.

  [Propose a course of action and make a request] I have sourced two backup suppliers that have five-star reviews and a track record of on-time deliveries. I propose we meet with them both right away so we can onboard one of them quickly. That way, we can avoid major delays. Are you available for a meeting tomorrow to discuss options and come to an agreement on next steps? Please respond with the times that work best for you.

  Thank you in advance for your consideration and insight,

  Sayid

  End of email

Module 2: Quality management and continuous improvement

Objectives

- Manage quality and meet quality standards
- Quality assurance and quality control
- Continuous improvement
- Data-driven framework such as DMAIC and PDCA
- Conduct retrospective
- Maintain a positive, blameless tone.

Understanding quality management

- Consider the triple constraints: timeline, budget, scope. There is a distinction between quality and done. Finishing a project is not enough.
- Quality: When you fulfill the outlined requirements for the deliverable and meet or exceed the needs or expectations of your customers.
- To meet customers need, you need to know quality management concepts and oversee the implementation of a project management quality plan.
- Four main concepts of quality management:
  - Quality standard (step one of quality management-just at the beginning of the project): Provide requirements, specifications, or guidelines that can be used to ensure that products, processes, or services are fit for achieving the desired outcome. These standards must be met in order for the product, process, or service to be considered successful by the organization and the customer.
  - Quality planning (just at the beginning of the project): The actions of the project managers or the team to establish a process for identifying and determining exactly which standards of quality are relevant to the project as a whole. It should include regular audits to confirm that everything is going to plan and the necessary procedures are being followed. For this planning you need to ask:
    - What outcome do my customers want?
    - What does the quality look like for them?
    - How can I meet their expectations?
    - How will I determine if the quality measure will lead to project success?
  - Quality assurance (QA-spans the whole project lifecycle, rather than taking at a specific phase): Evaluating if your project is moving towards delivering a high quality service or product. Regular check-ins and reporting to stakeholders will help boost their confidence and yours along the project. Makes sure client gets the exact product you contracted for.

    - Quality control (QC): techniques are used in order to ensure quality standards when a problem is identified, or if the quality plan is not executed in the desired manner and corrective actions should be affected. It involves monitoring project results and delivery to determine if they are meeting desired results or not. Quality control is a subset of quality assurance activities. While QA seeks to prevent defects before they occur, QC aims to identify defects after they have happened and also entails taking corrective action to resolve these issues.
- How should a project manager approach communication with a customer?
    - Negotiation
    - Empathetic listening
    - Trust building
- Ask open-ended questions and actively listen to understand the customers' current statue versus their desired state.
- You just learned that up to 90% of a project manager's job is communication.
- If there is an issue for a product, communicate the issue to them calmly and with empathy. Present a solution, and share it with the customer.
- Exhibit empathy for your client
    - Understand their frustrations
    - Address those frustrations
    - Find a solution that's beneficial for both of you.
- Get feedback from the customers. We need to get the idea of what the customer wants. There are few ways to get that information:
    - Feedback surveys: A survey in which users provide feedback on features of your product that they like or dislike.
    - User Acceptance Tests (UAT): A test that helps a business make sure a product or solution works for its users. It takes place near the end of the product. This is the overall user experience test of the entire product. Here are the steps:
        - Welcome users and thank them for participation
        - Present your product
        - Start UAT tests cases to take to audience to the **critical user journeys** (The sequence of steps a user follows to accomplish tasks in your product):
        - Walk users through a demonstration (mock-up)
        - Identify **edge cases** (Rare outliers that typically pertain to software based projects. They deal with the extreme maximus and minimums of parameters.)
        - Recap findings, identify issues, prioritize which issues should be addressed first.
- UAT also allows the project team to record information about how users feel about their experience with a product, service, or process. Through testing, the team can learn about the emotions it evokes, identities it conveys, appeal it holds, and so on.
- Here are the steps to design UATs:
    - **Define and write down your acceptance criteria**. **Acceptance criteria** are pre-established standards or requirements that a product, service, or process must meet. Write down these requirements for each item that you intend to test. For example, if your project is to create a new employee handbook for your small business, you may set acceptance criteria that the handbook must be a digital PDF that is accessible on mobile devices and desktop.
    - **Create the test cases for each item that you are testing**. A **test case** is a sequence of steps and its expected results. It usually consists of a series of actions that the user can perform to find out if the product, service, or process behaved the way it was supposed to. Continuing with the employee handbook example, you could create a test case process in which the user would click to download the PDF of the handbook on their mobile device or desktop to ensure that they could access it without issues.
    - **Select your users carefully**. It is important to choose users who will actually be the end users of the product, service, or process.
    - **Write the UAT scripts based on user stories**. These scripts will be delivered to the users during the testing process. A **user story** is an informal, general explanation of a feature written from the perspective of the end user. In our employee handbook example, a user story might be: As a new employee, I want to be able to use the handbook to easily locate the vacation policy and share it with my team via email.
    - **Communicate with users and let them know what to expect**. If you can prepare users ahead of time, there will be fewer questions, issues, or delays during the testing process.
    - **Prepare the testing environment for UAT**. Ensure that the users have proper credentials and access, and try out these credentials ahead of time to ensure they work.
    - **Provide a step-by-step plan to help guide users through the testing process.** It will be helpful for users to have some clear, easy-to-follow instructions that will help focus their attention on the right places. You can create this plan in a digital document or spreadsheet and share with them ahead of time.
    - **Compile notes in a single document and record any issues that are discovered**. You can create a digital spreadsheet or document that corresponds to your plan. It can have designated areas to track issues for each item that is tested, including the users' opinions on the severity of each issue. This will help you prioritize fixes.
- Managing UAT feedback: This feedback might include positive comments, bug reports, and change requests. As the project manager, you can address the different types of feedback as follows:
    - **Bugs or issues:** Users might report technical issues, also known as **bugs**, or other types of issues after performing UAT. You can track and monitor these issues in a spreadsheet or equivalent system and prioritize which issues to fix. For instance, critical issues, such as not being able to access, download, or search the employee handbook, need to be prioritized over non-critical issues, such as feedback on the cover art of the handbook.
    - **Change requests:** Sometimes the user might suggest minor changes to the product, service, or process after UAT. These types of requests or changes should also be managed and prioritized. Depending on the type and volume of the requests, you may want to share this data with your primary stakeholders, and you may also need to adjust your project timeline to implement these new requests.
- Ensure accessibility
    - Offer to provide accommodations
    - Examine the space with an accessibility lens
    - Check that the systems you are using are fully accessible
    - Make accessibility part of the conversation from the beginning.

Pursuing continuous improvement

- Continuous improvement: an ongoing effort to improve products or services
- Continuous improvement begins with recognizing when processes and tasks need to be
    - Created
    - Eliminated
    - Improved
- Process improvement: the practice of identifying, analyzing, and improving existing processes to enhance the performance of your team and develop best practices, or to optimize consumer experiences.

- Control an experiment or observation designed to minimize the effects of variables. Control groups are representative samples that help you to determine that the differences between your experimental groups and the norm are due to your changes rather than something else.
- Data-driven improvement frameworks: Techniques used to make decisions based on actual data. We can name two options here:
  - DMAIC (Define, Measure, Analyse, Improve, Control)
    - Define the problem, goals, resources, project scope, and project time line
    - Measure: conduct performance metrics, and data collection to stablish baselines and measure success.
    - Analyze: work to find the root cause of the problem, and understand their impact.
    - Improve: implementing reasonable solution to the problem
    - Control: implement the changes, and monitor.
  - PDCA (): a four step process that focuses on identifying a problem, finxing that issue, assessing whether the fix was successful, and fine-tuning the final fix.
    - Plan: identify the issue and root cause, and brainstorm solutions to the problem
    - Do: or fix the problem
    - Check: compare your results to the goal to find out if the problem is fixed.
    - Act: fine-tune the fix to ensure continuous improvement.
- These two methods, allow to identify issues, reduce errors, optimize your processes

Differentiating projects from programs

- Project: one single-focused endeavor
- Program: a collection of projects
- Portfolio: a collection of projects and program across the whole organization
- A program manager supervises groups of projects, and even other project managers, and focuses on long-term business objectives.
- A portfolio manager supervises grouping of projects and programs and provides centralized management to them.

Using project retrospectives for project success

- How to avoid the same missteps? One way of continuous improvement is to conduct retrospective.
- Retrospective: a workshop or meeting that gives project teams time to reflect on a project. Usually implemented after major milestones, or after a project is completed. This is a change to discuss successes and setbacks.
- Because a retrospective is a specific type of meeting, it is crucial to have an agenda to help guide the discussion, organize the meeting, and document learnings.
- Retrospective serves three main purposes
  - Encourage team building
  - Facilitate improved collaboration
  - Promote positive changes
- The emphasis in retrospectives is on continuous improvement and change, instead of recycling old and potentially bad habits, procedures, and process.
- Reasons to hold a retrospective:
  - Missed deadlines or expectations.
  - Miscommunication between stakeholders
  - Reached the end of the sprint.
  - After product launches and landings.
  - Record key lessons that other people can learn from.
- No exact way to conduct the retrospective: The way you choose to structure your retrospective will depend on your team and workplace.
- Retrospective best practices:
  - Ensure discussion is blameless, we need giving feedback candidly- switch from you language to we language – change perspective (putting yourself in someone else shoes)
  - Anonymous/private feedback to navigate through awkward situations or sensitive subjects.
  - *Reflect on positive aspects of the project as well as the negatives.*
- Conducting retrospective:
  - Maintain a positive tone throughout the retrospective.
  - The retrospective should be considered a positive experience, where team members feel comfortable sharing their feedback.
  - Be considerate of teams outside of your own. This is when working with other teams. It they choose not to get involve in the retrospective, you need to share the results.
  - Check the retrospective template (things went well, need improvement, got lucky).
- Retrospective can be a bit intimidating: retro draws attentions to the project success, but also challenges. If a team feels uncomfortable voicing challenges, then they might not be very eager to participate during a retrospective discussion. Effective techniques for encouraging participation in a retrospective:
  - Establish a safe environment for the team (what said here stays here-what's learned here leaves).
  - Model the kind of participation you would like to elicit from your team (start the discussion with your own successes and challenges). If you made a mistake on a project, say it out loud.
  - Pose a group question and ask for individual responses:
    - What about this project should we start, stop, and continue?
  - Review the project timeline, to encourage everyone to talk about past experiences and challenges, instead of very recent events.
- Techniques for encouraging accountability during a retrospective:
  - Accountability: being responsible for decisions associated with a project or task.
  - Accountability and blame are two very difficult things, and only accountability belongs in a retrospective. Blame shuts people down instead of empowering them to share honestly.
  - Accountability:
    - encourages the team to think holistically about mistakes and challenges.
    - Identifies solutions for the future.
    - Encourages ownership
  - Techniques to encourage accountability:
    - Come prepared with specific challenges to discuss as a group
    - Turn team complaints into SMART action items. (Action items can be SMART too).
    - Push the team to identify its role in creating a given challenge.
      - Constructive criticism: a respectful form of feedback that is intended to help the recipient improve a piece of work.
    - Detach the challenge being discussed from any specific person in the room.
- Retrospectives are a great way to build trust, honesty, and direct communication with a team. Learn how to address negativity in a retrospective:
  - Aim to set a positive tone at the start of the meeting.
  - Determine how you'll set the tone of the meeting.
  - Try anticipating potential negativity by meeting one on one with team members before the retrospective happens.

        - Ask yourself:
            - Does this person feel insecure about the value they add to this team? Reassure them their value.
            - Does this person receive negative feedback on the quality of their work?
        - A single negative voice and derail a productive discussions.
    - Consider asking team members individually to share their thoughts.
    - Call a meeting break.

3: Data-informed decision making

Objectives

- How data impacts decisions, some of which occur during a project journey
- How do I use data in my project?
- Which types of data should I search for?
- How much do I determine what stakeholders need to know?
- Project data informs decision-making and helps prevent both major and minor issues.
- How project-related data can be used to reach success metrics

Gathering data for a project

- Explain the value of data and how it impacts your projects
- How you'll use data to communicate with stakeholders
- Data: a collection of facts or information
- Benefits of using data: make better decisions, solve problems, understand performance, improve processes, understand your users.
- Common types of data that project managers collect and analyze
- Tools you need to organize this data for your projects.
- To see how data can help us make informed decisions, we need metric: a quantifiable measurement that is used to track and assess a business objective.
- Types of project metrics:
    - **Productivity metrics:** productivity measures progress and output over time. Productivity metrics: metrics that allow you to track the effectiveness and efficiency of your project. Productivity metric includes:
        - Milestones: an important point within the project schedule that indicates progress and usually signifies the completion of a deliverable or phase of the project.
        - Tasks: an activity that need to be accomplished within a set period time
        - Projections: How you predict an outcome based on the information you have now
        - Duration: the total time it takes to complete a project from start to finish.
    - **Quality metrics**: metrics that relate to achieving acceptable outcomes.
        - Number of changes: helps to monitor risks. Metrics that show inconsistencies from the initial requirements of the project. Use a change log to record changes in the project.
        - Issues: a known and real problem that may affect the ability to complete a task.
        - Cost variance: The difference between the actual cost and the budgeted cost.
        - Other metrics for quality metrics:
            - Project managers at Google use a sub-set of metrics called **happiness metrics** that also relate to quality**.** These are metrics that relate to different aspects of the user's overall satisfaction with a product or service, like **visual appeal**, how likely they are to **recommend**, and **ease of use**. Happiness metrics can generally be captured with a well-designed survey or by tracking revenue generated, customer retention, or product returns.
            - **Customer satisfaction scores** reflect user **attitudes**, **satisfaction**, or perceived **ease of use.** These scores measure how well the project delivered what it set out to do and how well it satisfies customer and stakeholder needs. Customer satisfaction scores generally represent a combined metric—the sum of several different happiness metrics. For example, on a satisfaction survey, a customer might separately rate a product's appearance as 6/10, ease of use as 7/10, and likeness to recommend or use again as 8/10. The overall customer satisfaction score would then be 7/10.
            - Another set of metrics related to quality are adoption and engagement. **Adoption** refers to whether or not a product, service or process is accepted and used. **Engagement** refers to the degree to which it is used—the frequency of use, amount of time spent using it, and the range of use.
                - Each project will need to define its own set of successful adoption metrics, such as:
                - Conversion rates
                - Time to value (TTV)
                - Onboarding completion rates
                - Frequency of purchases
                - Providing feedback (rating the product or service)
                - Completing a profile
            - **Engagement metrics** tell you to what degree a product, service, or process is being used. They reveal the frequency and type of customer interaction and participation over time. Engagement metrics might include the daily usage rate of a design feature or tracking orders and customer interactions.

Prioritizing and analyzing data

- Signal: an observable change that helps determine the overall health of the project and identify early sign that something isn't quite right.
- As a project manager, it is up to you to look for signals and prioritize data to deliver positive results. How to observe signal?
    - Identify which task contribute most to the overall goal. It shows which activity or task you should focus on.
    - Prioritize the data or metrics that are most valuable to stakeholders.
- Stakeholders can look to your project plan for a high-level overview for answers to important questions, determined success criteria, artifacts, and the overall health of your project.
- Data ethics considerations:
    - The data you collect will usually hold **PII (personally identifiable information)**—information that could be used to directly identify, contact, or locate an individual.
    - **Data ethics:** is the study and evaluation of moral challenges related to data collection and analysis. This includes generating, recording, curating, processing, sharing, and using data in order to come up with ethical solutions. Businesses apply data ethics practices so they can:
        - Comply with regulations
        - Show that they are trustworthy
        - Ensure fair and reasonable data usage
        - Minimize biases
        - Develop a positive public perception
    - Data ethics is rooted in several principles. In this reading, we will focus on two of these principles: **data privacy** and **data bias**.
    - **Data privacy:** the proper handling of data. This includes the purpose of data collection and processing, privacy preferences, the way organizations manage personal data, and the rights of individuals. It focuses on making sure the ways we collect, process, share,

archive, and delete data are all in accordance with the law. To do that:
    - **Increasing data privacy awareness**. Make sure every member of your project team—plus the vendors, contractors, and other stakeholders from outside of your company—are made aware of your organization's data security and privacy protocols.
    - **Using security tools**. Free security tools, like encrypted storage solutions and password managers, can decrease your project's vulnerability to a data breach. In a lot of applications, like ones that are part of Google Workspace and Microsoft OneDrive, privacy settings can be adjusted to only give access to specific individuals.
    - **Anonymizing data**. Data anonymization refers to one or more techniques such as blanking, hashing, or masking personal and identifying information to protect the identities of people included in the data. This helps protect individuals' personal information by keeping them anonymous. Once the information has been anonymized, it can then be used and shared freely. Types of data that should be anonymized include names, telephone numbers, social security numbers, email addresses, photographs, and account numbers.
  - **Data Bias:** a type of error that tends to skew results in a certain direction. Maybe the questions on your survey had a particular slant to influence answers, or maybe your sample group was not fully representative of the population you want to study. Bias can also happen if a sample group lacks inclusivity. For example, if your sample does not include people with disabilities. The way you collect data can also bias a dataset. Say you give people only a short time to answer questions, this can lead to rushed responses. When people are rushed, they tend to make more mistakes, which can affect the quality of their data and create biased outcomes.
    - **Sampling bias** when a sample is not representative of the population as a whole. For example, maybe your sample did not include people above the age of 65. Or maybe you excluded people from certain socioeconomic groups.
    - **Observer bias** the tendency for different people to observe things differently. For example, stakeholders from different parts of the world might view the same data differently and draw different conclusions from it.
    - **Interpretation bias** the tendency to always interpret situations that don't have obvious answers in a strictly positive or negative way, when, in fact there is more than one way to understand the data. Data that does not provide an obvious set of conclusions makes some people feel anxious, which can lead to interpretation bias. For example, a team member might interpret inconclusive survey results negatively, while other team members might be able to think more carefully and assess the data from different angles.
    - **Confirmation bias** the tendency to search for or interpret information in a way that confirms pre-existing beliefs. For example, you might ask only specific stakeholders for feedback on parts of your project because you know they are the most likely to have the same perspective as you.
- As a project manager, it is your responsibility to as a project manager to select appropriate data to help inform your decision-making. This process is called "data analysis".
- **Data analysis:** The process of collecting and organizing information to help draw conclusions. Businesses use data analysis to reveal important insights and patterns within their data that help inform actions and drive results. Project managers will often apply data analysis to look for repeated behaviors and to find a solution based on data predictions.
  - Two types of data:
    - Quantitative data: statistical and numerical facts.
    - Qualitative data: subjective qualities that can't be measured with numerical data (example feedback from customers).
- There are six main steps involved in data analysis: **Ask, prepare, process, analyze, share** and **act**.
  - **Ask:** ask key questions to help frame your analysis, starting with: What is the problem? When defining the problem, look at the current state of the business and identify how it is different from the ideal state. Usually, there is an obstacle in the way or something wrong that needs to be fixed. At this stage, you want to be as specific as possible. You also want to stay focused on the problem itself, not just the symptoms.
    Another part of the **Ask** stage is identifying your stakeholders and understanding their expectations. There can be lots of stakeholders on a project, and each of them can make decisions, influence actions, and weigh in on strategies. Each stakeholder will also have specific goals they want to meet. It is pretty common for a stakeholder to come to you with a problem that needs solving. But before you begin your analysis, you need to be clear about what they are asking of you.
  - **Prepare** This is where you collect and store the data you will use for the upcoming analysis process.
  - **Process** you will "clean" your data, which means you will enter your data into a spreadsheet, or another tool of your choice, and eliminate any inconsistencies and inaccuracies that can get in the way of results. While collecting data, be sure to get rid of any duplicate responses or biased data. This helps you know that any decisions made from the analysis are based on facts and that they are fair and unbiased. For example, if you noticed duplicate responses from a single gym member when sorting through the surveys, you would need to get rid of the copies to be sure your data set is accurate.
  - During this stage, it is also important to check the data you prepared to make sure it is complete and correct and that there are no typos or other errors.
  - **Analyze** you take a close look at your data to draw conclusions, make predictions, and decide on next steps. Here, you will transform and organize the data in a way that highlights the full scope of the results so you can figure out what it all means. You can create visualizations using charts and graphs to determine if there are any trends or patterns within the data or any need for additional research.
  - **Share** you use **data visualization** to organize your data in a format that is clear and digestible for your audience. When sharing, you can offer the insights you gained during your analysis to help stakeholders make effective, data-driven decisions for solving the problem.
  - **Act** the business takes all of the insights you have provided and puts them into action to solve the original business problem.

Presenting and visualizing data

- Presenting is a powerful way to communicate your ideas and support your decisions throughout the project journey.
- Storytelling: The process of turning facts into narrative to communicate something to your audience.
- Stories have a beginning, middle and an end. There are six main steps for storytelling:
  - Define your audience: who you are presenting to (stakeholders, team members, etc.)
    - What would my audience like to know about the project?
    - What are their most urgent concerns?
    - Which key data points influence the story and project outcome?
  - Collect the data: to support the point you want to make.
  - Filter and analyze the data: vet for credibility.
  - Choose the visual representation: visualization are a great way to help people remember the information you are presenting and are an essential piece of storytelling.
  - Shape the story: what you hope to achieve, the points you want to make, questions you want to answer.
  - Gather your feedback: before you present, you do a trial run and find areas of the presentation that is not clear, to make adjustment.
- Data visualization: graphical representation of information to facilitate understanding.
- Why data visualization matters? Because
  - It filters information by focusing the audience on the most important data points and insights.
  - Condense long ideas and facts into a single image or representation.
  - Make sense of the information being presented.

- Some types of data visualization:
  - Dashboard: type of user interface that provides a snapshot view of your project's progress or performance. A centralized location for stakeholders for a quick insight. It can display a tight summary of metrics, stats, and key performance indicators, or KPIs. KPI: a measurable value or metric that demonstrates how effective an organization is at achieving key objectives. You may have top KPIs in your dashboard. May have countdowns until launch. Efficient status updates.
  - Burndown chart measures time, against the amount of work done. Shows the amount of work requires to complete.
  - Column charts: useful to compare different activities or progress over time.
  - Pie charts: good for showing the composition of something.
  - Info graphics: visual representation of information or data intended to present information quickly and clearly (one pager). Good for showing complex data.
- Visualization:
  - Be clear on what you want to show your audience, what data and why.
  - Why can be
    - inform,
    - show relationships between data
    - Compare values
    - Understand the composition
    - Analyse trends and behaviors over set periods of times.
  - To show relationships
    - Use scatter plots: dots for data points plus a line drawn across its center. This line is known as the trend line and highlights the direction the points are trending towards.
    - Comparing values: bar graphs, use size contrast to compare two or more values.
    - Demonstrate composition: Pie chart.
    - Analyzing trends and behaviors: Tracking trends can help us understand shifts or changes in our data.
- When preparing the presentation:
  - Public speakers work a lot on their craft.
  - When preparing your presentation: what do I want my audience to know, or do as a result of this presentation.
  - Create your presentation around the big picture & keep it simple
- Effective presentation techniques:
  - Be precise:
    - use the technique called "designing for five seconds". The audience should understand your visual in 5 seconds.
    - Identify the problem you're solving for your audience
    - Remove any content that dilutes your message. Just keep the most relevant data, and don't overload the audience with lots of data.
  - Be flexible (as a project manager) for your presentation
    - Consider the approach you'd take if you had to shorten your presentation unexpectedly
    - Know the most important items, and be prepared to only share those important items.
    - Practice to avoid mistakes that could distract from your message
    - Identify and come up with answers to potential audience questions.
    - Imagine and prepare for possible objections
  - Be memorable:
    - Develop a strategy that helps make your narrative unforgettable.
    - This is the point where you want to tie in your data analysis, effective visualization, and put the finishing touches on your narrative to bring it all together.
    - Use stories or repetition to help your audience remember information
    - Beware of your body language.
      - Posture, upright. Rest hands on your side.
      - Change the tone of voice for emphasis.
      - Pace yourself by using intentional pauses.
      - Speak slowly and keep your sentences short.
      - Eye contact
      - Warm and friendly facial expressions.
      - Confidence
    - Start with a strong intro. Spend extra prep time on the beginning. The beginning is when your nerves are typically the highest, and delivering the introduction successfully can help you quickly gain confidence.
- Preparing effective presentation:
  - **Preparation**
    - **Get clear on your goals and the purpose of your presentation.**
    - **Seek input and set expectations.** Ask your manager or check with stakeholders regarding your presentation goals. Get their input and feedback ahead of time. If you were invited to present, make sure you understand in advance exactly what the requestor is hoping to gain from your presentation.
    - **Create a delivery plan.**
      - Identify a headline for each slide, which is the one-sentence main point that you are trying to illustrate with that slide.
      - Create a couple of supporting points that add interest to the headline, such as anecdotes, charts, data, etc.
      - Build in signposts. These are ways to clue the audience in to where you are going and what to expect with your presentation.
      - Limit the number of slides in the main presentation. At the same time, consider creating backup slides for potential challenges, difficult questions, trade-offs, or alternative solutions. You can hide these backup slides at the end of your presentation if you don’t need them, or add them into your presentation if you do.
    - **Be mindful of your audience’s time.**
      - Invite only participants who need to be there.
      - Send the presentation ahead of time, if possible.
  - **Practice:**
    - **Guide your audience through your presentation** Help them notice what you notice, and transition between slides by using phrases like “Building on this point . . .” or “As I mentioned before . . .”
    - **Do a mock presentation with your team.**
      - If there will be more than one presenter, coordinate what each person will cover and how you will manage handoffs.
      - Practice a question-and-answer (Q&A) session, anticipating the kinds of questions your participants might ask so you are prepared with a quick and confident response. In addition, practice what you will say if you are asked a question that you don’t know the answer to.
      - Be prepared to run the whole meeting yourself. If a co-presenter fails to show up, are you prepared to step in?

        - **Schedule time to practice.**
            - Once you've outlined what you want to say, practice it—ideally in front of a mirror—or record yourself. This may help you identify awkward phrasing that could be improved and other issues.
        - **Be prepared for surprises.**
            - Show that you can adapt and that you know your subject matter.
            - If time runs short, can you quickly summarize the key points?
            - Can you pivot the content according to what is most important to your audience?
    - **Presentation and pace**
        - **Get right to the point.**
            - Identify what problem you are solving and state it up front.
            - Tell the audience why you are in the room with them and what you will be covering.
            - Lay down the ground rules. For example, how do you want to handle questions and comments? Will you take them throughout your presentation or afterwards?
        - **Check your pace.**
            - Be mindful of clues from your audience and adjust accordingly.
    - **Follow up**
        - If appropriate, send a follow up email with summary notes, action items, and time frames.
        - Debrief with your manager or key audience members on what they heard from the presentation. Ask them what went well and what could have gone better.
        - Review next steps.
- Your presentation and slides-make them accessible to everyone (visual and hearing impairment):
    - Create clear and simple slides, not much text and graphs. Avoid flashing animations, it is distracting.
    - Add alt text for images, drawings, or diagrams (for visual impaired people so that they can use devices to read for them). For charts, use a proper font.
    - Use text for critical information (don't rely on colors (for color blinds)).
    - Provide captions, for audios/videos.
    - For contrast and text size, more contrast between background and text, make it easier to read, especially for color blinds, low vision people.
    - Avoid using all caps
    - Share your content in advance.

Module 4: Leadership and influencing skill

Objectives

- The value of a high-functioning team
- How teamwork can help you reach project goals
- Stages of team development
- Managing team dynamics
- Motivating project team members to succeed
- How to provide personalized levels of engagement
- Influencing techniques.

Cultivating effective teams

- Leadership is a big part of project management, but being a great project manager is about more than simply leading a team to complete a project. It is about:
    - supporting the people on your team to do their best work,
    - and enabling people to build things they are proud of.
- Best leaders make people to work together.
- Team: a group of people who plan, solve problems, make decisions, and review progress in service of a specific project or objective.
- Teams differ from work groups. Workgroup: people in an organization who work toward a common goal. Work groups are more like to coordinated, controlled, or assigned by a single person or entity. Work groups are based on organizational or managerial hierarchy.
- Teams and work groups each have unique benefits within a larger organization.
- Project managers develop and lead effective teams by fostering a culture of teamwork.
- Teamwork: an effective collaborative way of working in which each person is committed to and heading towards a shared goal.
    - Teamwork maximizes the individual strength of each team member to bring out the best in each person.
- Why teamwork matters in project management:
    - Fosters creativity (diverse expertise and skill of members to devise better solutions)
    - Encourages accountability
    - Helps you get stuff done
- Teams are made of individuals, which are driven by different motivators. You need to know about your team to learn how to motivate everyone.
- Five factors that affects team effectiveness:
    1. Psychological safety: and individual's perception of the consequences of taking an interpersonal risk (believe to take risk within the team, and don't label as ignorant, incompetent, negative or disruptive). If feel comfortable, seeking differing opinions and resolving interpersonal conflict when it comes up. Be direct and kind.
    2. Dependability: team members are reliable and complete their work on time. Creating a dependable team requires the combination of setting, negotiating and meeting expectations.
    3. Structure and clarity: an individual's understanding of job expectations, knowledge of how to meet those expectations, and the consequences of their performance. Each team member has a clear sense of their individual role, plans and goals. And they have a sense of how their work affects the group.
    4. Meaning: finding a sense of purpose either in the work itself of in the results of that work. Examples: supporting themselves financially, helping the team reach its goals or wanting their products to reach a new community of users.
    5. Impact: the belief that the results of one's work matters and creates change. Part of the project manager role is to help individual teammates identify how they drive impact both within the team and beyond it. Example: meeting the milestones.

Effective project leadership

- Project managers:
    - Create systems that turn chaos into order: creating, implementing, and improving-standardize, measurable, repeatable and scalable workflows and processes for your team. Define points/time where people should report.
    - Communicate and listen: make sure everyone in the team is on the same project regarding the status of the project (example: team meetings, regular email status updates, etc.). Team meetings provide also provide a space for listening, whether you are gathering feedback on a workflow or process. Solicit feedback or questions via status update email (some people prefer private conversations). ***It is also important to regularly connect with individual members.*** Everyone communicates differently.
    - Promote trust and psychological safety:

        - Psychological safety: an individual's perception of the consequences of taking an interpersonal risk.
        - Team members need to trust that they are safe and speaking up if they have feedback or concerns about the project as a whole or about their individual tasks.
        - It is your job to create a team atmosphere where different opinions are welcome, and all members remain respectful of one another during challenging conversations.
        - Providing and accepting feedback is healthy part of project management and usually makes for a better project outcome.
    - Demonstrate empathy and create motivation: ***There is no "I" in team,*** but notice that a team made up of individuals whit differing motivations and lives outside of work.
        - Be present
        - Listen
        - Asking questions
        - Create motivation by recognizing a job well done through public forums.
    - Delegate responsibility and prioritize: most jobs have multiple tasks taking place simultaneously, it is your job to keep teams focused and heading toward the project goals and deliverables. By delegating responsibility for specific tasks to individuals on your team, you provide your teammates with opportunity to add value using their particular set of skills.
        - By prioritizing tasks, you reduce ambiguity, and provide clarity.
    - Celebrate team success: big and small wins. Reaching Milestones, etc.
        - Group lunch
        - Small gift,
        - Talk in the meeting.
- Project managers should provide **air cover.** Air cover refers to support for and protection of a team in the face of out-of-scope requests or criticism from leadership.
- Much of project management involves overseeing the work of others, but it also involves managing the needs and expectations of those above you. Those people are your stakeholders, project sponsors, and other leaders within your organization. Though the needs and requests of your stakeholders are crucial to the project's success, there may come a time when you will need to prioritize the needs of your team over the wants of your stakeholders. This is called providing "air cover" for your team, and it is an important part of managing a project. The ability to effectively provide air cover requires a trusting relationship between a project manager and their stakeholders. In this relationship, the project manager aims to demonstrate their abilities to lead a team and communicate effectively. There is some risk involved in providing air cover. Sometimes a project manager provides air cover and the project team is still unable to deliver on the goals of the project. In this case, stakeholders may question the project manager's ability to complete projects successfully. So, when preparing to defend your team against out-of-scope requests, be sure that you are confident in your team's progress toward the project goal.
- One way to provide air cover to your team is to say "no" to your sponsor's request without explicitly saying "no." There are a few ways to do this:
    - You can gently push back with a polite explanation that their request won't be possible to complete under the current constraints—the scope, time, and/or cost—of the project.
    - You can politely offer to get back to the stakeholder with your response. This gives you time to better understand the request and to consult with trusted team members to lay out the benefits and costs of this request. And, if you are lucky, this might even give the stakeholder the opportunity to reconsider their request or forget about it entirely.
- Whether you choose to push back immediately or get back to your stakeholder with your response, it is crucial to offer alternative solutions. Maybe the project timeline can expand to accommodate the request. Or maybe you and your team have a strong relationship with another team at the organization that can help fulfill the request.
- While a simple "no" response might frustrate the person making the request, gentle pushback paired with alternative options can protect your team from new work while preserving your professional relationship with stakeholders. If your stakeholders trust your leadership abilities and perspective, then they will be more likely to accept your pushback and alternative solutions.
- To avoid causing the extra stress that might come with the knowledge that the stakeholder wants to increase their workload, you avoid sharing this request with your entire project team. This doesn't mean you need to come up with a solution all by yourself, however. Instead of calling a team meeting to discuss the stakeholder's request for a new flavor, you consult with only two trusted members of your team to help brainstorm solutions.
- Bruce Tuckman's stages of team development:
    - Forming:
        - teams get to know one another
        - Project manager should clarify project goals, roles, and context about project
    - Storming:
        - After interactions, frustration emerges, especially for more complex and challenging work.
        - Project manager should focus on conflict resolution, listen as the team addresses problems to solve, and share insights on how the team might better function as a unit.
    - Norming
        - At this stage, conflicts is mostly resolved and team is working together
        - Project manager should codify the team norms, ensure that the team is aware of those norms, and reinforce them when needed.
    - Performing
        - Teams works together seamlessly
        - Project manager should focus on delegating, motivating, and providing feedback to keep up the team's momentum
    - Adjourning
        - Project wraps up
        - Team disbands
        - Celebrate final milestones and successes
- Team dynamics: the forces, both conscious and unconscious, that impact team behavior and performance. It is important to reflect on the dynamic of the team. Why managing team dynamic is so important:
    - Teams have individuals with different skill sets, varying degrees of autonomy, and competing priorities
    - Create a collaborative and psychologically safe environment
    - Helps you understand how to motivate your team.
- Definitions of ethical and inclusive leadership: a form of leadership that promotes and values honesty, justice, respect, community and integrity
    - Promoting ethical leadership:
        - Defining and aligning values within your team
        - Demonstrating how adhering to those values benefits the mission of the organization
    - Create forums where employees can
        - Raise viewpoints
        - Feel heard
        - Receive follow-ups on their concerns

    - Ethical leadership is closely related to inclusive leadership.
    - Ethical leadership's aim is to create forums where employees' concern can be heard.
    - Inclusive leadership aims to put what we've heard into action to create an environment that encourages and empowers each and every member of our community.
    - Inclusive leadership: a form of leadership where everyone's unique identity, background, and experiences are respected, valued, and integrated into how the team operates.
    - Diversity: the set of differences each of us possesses, whether visible or invisible, that give us each a unique perspective on the world and our work.
    - Inclusion: What the team does with the diversity of thought and perspective.
    - Project managers lead inclusivity by
        - Fostering a culture of respect
            - Modeling the values of your organization
            - Taking appropriate action
            - Creating a comfortable environment for communication
            - Recognizing team contributions.
        - Creating an equal opportunity to succeed
            - Regular communication
            - Accessible documentation
            - Regular check-ins with the team
        - Inviting and integrating diverse perspective
            - Create a sense of psychological safety
            - Invite teammates to share thoughts, ideas, and concerns
- A common framework for ethical decision-making
    - Recognize an ethical issue: Could your decision negatively impact another person or group of people? Does the issue go beyond what is legal or efficient? From there, you can proceed onto fact gathering.
    - Get the facts: Decide what you should do about the issue, and seek answers as needed. Consult with the right people to consider all of the options available to you.
    - Evaluate alternative actions: You can evaluate alternative actions by asking yourself the following questions:
        - “Which option will produce the most good and do the least harm?”
        - “Which option best respects the rights of all who have a stake?”
        - “Which option treats people equally or proportionally?”
        - “Which option best serves the community as a whole, not just some members?”
        - “Which option leads me to act as the sort of person I want to be?”
    - Make a decision and test it: Once you have chosen an option, test it by imagining the reaction to your choice from a person whose opinion you value.
    - Act and reflect on the outcome: Consider how to carry out your decision with thoughtfulness and care, and after you act, consider the results of your decision.

Influencing people around you

- Influencing: the ability to alter another person's thinking or behaviors.
- Four tried steps of influencing:
    - Establish credibility
        - Make your case why the audience should listen to you. Credibility comes from two sources: expertise (knowledge and research) and relationship (honest and trustworthy).
    - Frame for common ground
        - Make your case how your idea benefit the audience. Here, you need a strong understanding of your audience and their values, what idea will appeal to them, and how will they stand to benefit from agreeing to your idea.
    - Provide evidence
        - Make your case through hard data and persuasive storytelling
    - Connect emotionally
        - Demonstrate to your audience that you are emotionally committed to your idea
- Four common mistakes when attempting to influence people
    - Approaching the audience aggressively
    - Resisting compromise
    - Focus too much on developing their argument for the idea and not enough time establishing credibility, framing for common ground, providing evidence and connecting emotionally.
- Two buckets of power sources
    - Organizational sources of power
        - Role: your position within an organization or team
        - Information: your level of access and control over information
        - Network: the people you are connected with, professionally and personally.
        - Reputation: how others perceive you overall. Good collaborators boost their reputation by becoming known to easy to work with keeping your commitments, and helping others achieve their own goals.
    - Personal sources of power
        - Knowledge: the power you draw from your expertise in certain subjects, your unique abilities and skill sets, and your ability to learn new things.
        - Expressiveness: the ability to communicate with others. Great story teller. Good at connecting emotionally with people.
        - History: the level of personal history that exists between you and another person. Strong relationship with the person you want to connect, go a long way.
        - Character: other people's view of your personal qualities – honesty, integrity

Module 5: Effective project communication

Objectives

- Importance of project communication
- How to effectively communicate
- Different methods and tools for communicating

Communication tools and techniques

- Project manager serves as the main resource for your team when it comes to communicating and clarifying goals, action items, progress, and updates. Everyone in the team knows what the current state of the project is, and what comes next.
- Project documents such as project plans including schedules, tackers, and meeting notes, they are also bubs for team communication.
- Project document responsibilities:
    - How documents get used

    - Who has access to those documents
    - How often the documents get updated.
- Emails, instant messages, meetings, in-person meetings are other tools of communication.
- You'll need to communicate certain information to your team multiple times and in various ways. Communicate info with the team a format that is easy and digestible.
- People learn by watching, or listening, or doing (or a combination).
- Emails are easy to misunderstood. Four principles of email writing:
    - State what you want clearly: You might want to receive a simple answer, to persuade someone of something, or to arrange a meeting. Before composing an email, think about what you want, when you need what you want, and the best way to get what you want when you want it. Some tips:
        - Include your request in the subject line.
        - State your request within the first two paragraphs
        - Indicate the specific call-to-action associated with your request (for example, reply, review, RSVP)
        - Write clear, concise sentences
        - Define terms, avoid using acronyms and terminology that users may not know.
    - Keep the content short and concise: remove any writing that does not help to define what you want to contribute to your reader's needs
        - Summarize the content, remove anything that does not contribute to your goal.
        - Aim to write "question-less" and "self-=standing" emails, i.e. contains enough information to stand on its own. Reader should not have any question about what you want and when.
        - Know your audience: busy leaders won't read your email if it is more than a few lines, or they won't click on the links.
    - Structure your writing: visual flow, aesthetics. A well-structured email conveys critical info quickly and allow the reader to scan the explanatory text, or ignore it.
        - Use bullets,
        - Use labels
        - Add hyperlinks (for additional info)
        - Write strong topic sentence: place the main idea of the email in the topic sentence.
    - Check grammar, punctuation, and spelling.
- Common communication tools
    - email. Email best practice:
        - Carefully select who you're sending emails to and why
        - Make sure the subject field clearly previews what the email is about. Add Urgent or Action required to the title.
        - Keep it short and stay on topic
        - If there are a lot of info to share, attach or link large amounts of info separately.
        - Clearly state action items
        - Correct grammar and spelling. Avoid slang, acronyms, and shortcut words.
        - Write in the appropriate tone.
        - Be friendly, motivating, clear, and specific.
    - Instant messages
        - For quick questions and updates
        - To avoid back and force email and miscommunications.
        - Consequences: distractions, sharing non-work related info, or sharing sensitive info. Difficult to track.
    - Virtual meetings
        - Effective
        - Interaction in real time, if physical meeting is not possible
        - Highly engaging. File sharing,
    - Work management and collaboration tools
        - Jira, asana, etc.
- These tools allow to get work in real time.
- Encouraging your teams to check in and update their progress regulrly helps to maintain the real-time feel of intecting with coworkers.
  Organizing and facilitating project meetings.
- Effective meetings
    - Structured
        - Start and end on time
        - Carefully selected attendees
        - Prioritized topics.
            - Time boxing: setting a time limit for each topic
        - Designated notetakers: decide also where and who to share the meeting notes.
    - Intentional
        - Clearly stated purpose and expectations (should be in the meeting agenda, and invite)
        - Everyone understands why they are attending
        - Agenda should set clear expectations for what needs to occur before and during the meeting. Helps attendees prepare, keep everyone focus on the right topic. Say the purpose of the meeting (info, discussion, decision making)
        - The purpose of your meeting might be to make a decision, assign tasks, propose/
        - invent an idea, or something else.
        - Send any pre-reading materials in advance of the meeting, so that everyone shows up prepared to participate.
        - Meetings can be formal or informal.
    - Encouraging a collaborative environment
        - Let everyone know that they are encouraged or welcome to respond verbally, through chat, in the meeting notes, or other formats you'd like to include.
    - Inclusive
        - The practice or policy of including people who might otherwise be excluded or marginalized.
        - Use moderators: guide the meeting, help participants ask questions in real time,
        - Leave space for the participant who are quite. Ask everyone in the meeting to comment on a question.
        - A key component of inclusivity is ensuring that your meetings and presentations are accessible (for people with impairment)
        - Have a phone dial option for people don't have access to the meeting.
- Creating an inclusive environment can be particularly challenging in meetings because they can be intimidating for participants. As a project manager, it is part of your job to facilitate meetings that are inclusive of all participants and that create a sense of emotional safety and value for everyone’s active input.
    - **Formalize initial check-ins for the group that build understanding and ensure everyone knows their input is needed.** Create a process that consistently asks each person for an update on their work and/or how they are doing in their daily lives. Questions should

be open-ended and vary over time to include some humor, analogies, and “finish the sentence” opportunities.
    - **Give everyone your full attention**. Listen carefully to what everyone has to say and be careful not to interrupt someone who is speaking. Body language—such as maintaining eye contact and turning your body in the direction of a speaker—can help someone feel safe in voicing their opinion. Avoid head shaking, looking away, or looking at your phone when someone is speaking.
    - **Help all participants to be heard**. Solicit ideas from participants, and ask questions to encourage participation. If someone gets interrupted, redirect everyone’s attention to that person and prompt them to finish their thought. If someone has not spoken yet, ask them what they think. You may also find that people who are entry-level may be nervous about speaking up too since they are just beginning their careers. You can help people feel more comfortable and supported by letting them know ahead of time that they will be asked to share during a meeting so that they can prepare in advance. You may also find that people who are entry-level may be nervous about speaking up too since they are just beginning their careers. You can help people feel more comfortable and supported by letting them know ahead of time that they will be asked to share during a meeting so that they can prepare in advance.
    - **Help participants feel comfortable sharing different perspectives.** Encourage differing or opposing ideas by making clear that alternate viewpoints are valued. To set the tone for this, start the meeting by encouraging competing perspectives.
    - **Use images that reflect the diversity of the world.** In your presentation materials and handouts, select images that illustrate diversity in race, gender, age, ability, cultural background, religion, geographical location, and so on.
- When planning your meetings, you should consider the needs of people experiencing the following types of disabilities:
    - **Visual impairments and blindness**
    - **Hearing loss and deafness**
    - **Mobility disabilities**, which means having difficulty getting around, such as people who require wheelchairs or canes
    - **Neurological disorders**
- **People with visual impairments**
    - **Presentation materials**
        - Use a large font size (minimum 22 points).
        - Use high-contrast colors.
        - Provide alternative text descriptions for all images, pictures, graphics, tables, and so on.
        - Provide low-vision or blind attendees with an accessible electronic format of the presentation.
        - Provide presentation materials in an accessible electronic format to participants ahead of time.
        - Describe all meaningful graphics in your presentation (such as photos, images, charts, and illustrations).
    - **Handouts and printed materials**
        - Use a large font size (minimum 18 points).
        - Use black lettering on white, matte paper.
        - Use a simple font and avoid compressed fonts and italics.
        - Use 1.25 to double spacing between lines.
- **People who are deaf or hard of hearing**
    - Always face the person you are communicating with. This is especially helpful for audience members who are speech readers.
    - Speak clearly, at a moderate pace and volume, and allow the other person time to respond. Avoid exaggerating, slowing your speech, or speaking loudly.
    - Ask for clarification if you don’t understand something the person is communicating.
    - Include all of the information presented in a spoken presentation on slides.
    - Add closed captions or subtitles to videos. YouTube Help provides instructions for adding your own closed captions to your videos.
- **People with mobility impairments**
    - Provide ample circulation space in your meeting room so that people using mobility devices can easily pass through.
    - Offer accessible seating locations throughout the room.
    - For presentations, use half-round seating so that all participants may face in the direction of the speaker.
- **People with neurological disorders**
    - Provide an agenda or task list to allow time for participants to understand content and expectations
    - Make sure any video call platform you use allows closed captioning
    - Be sure to record the meeting, and provide easy access to the recording to all meeting participants
    - For handouts or presentations, use simple page layouts that are easy to understand and use.
    - For resource materials, break up passages of text with images, graphs, or illustrations to highlight the context
    - Avoid using presentations with moving or flickering content, or background audio that cannot be turned off
- Plenty of things can make meetings unproductive, but an internal study at Google revealed that productive meetings have three elements in common:
    - Active participation from attendees
    - A clear and concise agenda that is followed throughout
    - The correct attendees (meaning the participants can contribute to achieving the meeting’s goal)
- Follow this checklist to help achieve these aims and facilitate more productive meetings for you and your project team:
    - **Before the meeting**
    - Prepare an agenda that states the purpose and goals of the meeting, and share the agenda with participants.
    - Only invite people who need to be there and who can help reach the goals of the meeting. Make participants’ roles and responsibilities for the meeting clear. Add non-essential participants as optional to the meeting invitation.
    - If you are working with people in different time zones, share the time zone burden by alternating recurring meeting times.
    - Evaluate the need for the meeting and cancel if it isn’t necessary. Consider whether the meeting content can be covered via email.
    - Schedule shorter meetings. Meetings tend to expand to the time allotted to them, so try to get more done in a shorter amount of time.
    - Set aside time to prepare for the meeting. Read the necessary materials, review the agenda, and come ready to participate.
    - **During the meeting**
    - At the beginning of the meeting, clearly state the meeting goals. Stick to the agenda throughout the meeting to avoid getting derailed. For recurring meetings, review the action items from the previous meeting to ensure accountability.
    - Encourage participants to put phones and laptops away during meetings and silence notifications, if possible.
    - Practice and demonstrate active listening. Respond verbally (e.g., “That makes sense. Tell us more.”) and non-verbally (through head nodding and eye contact) to show engagement.
    - Encourage participation and give everyone a chance to speak**,** including remote participants. Ask open-ended questions like, “What does everyone think?” instead of “Does everyone agree?”
    - Help everyone relax and feel more comfortable by starting meetings with open-ended, personal questions like, “How was your weekend?”
    - Capture key points, action items, and decisions from the meeting, and assign action items to the appropriate meeting participants.
    - **After the meeting**
    - Recap key decisions, action items, timelines, and notes and send out to participants.
    - Schedule necessary follow-up meetings with relevant context.

- Assess the need for and frequency of recurring meetings. Schedule meetings less frequently, if possible.

- Types of project management meetings
  - Project kick-off: official beginning of a project and serves as a way to align the team's understanding of the project goals with actual plans and procedures.
  - Status updates: this category includes regular team meetings where the primary goal is to align the team on updates progress, challenges, and next steps. This is to check-in on the project. Most PM recommend a fixed agenda and time for this meeting. PM should conduct the status meeting regularly to have the update on the project, so that PM can report to the stakeholders. Good for recognizing milestones, sharing information, and raising concerns.
    - For status update's meetings
      - Task updates
      - Schedule status
      - Budget status
      - Current anticipated issues
        - Changes
        - Risks
        - Resource issues
        - Vendor issues
      - Action items: every action item has an owner and a due date.
    - Factors for determining status update frequency
      - Project complexity
      - Number of team members
      - Level of information required by the project sponsor, clients and others.
  - Stakeholder reviews/meetings: to get buy-in and support. Winning and sustaining the support of your stakeholders is important to your project's success.
    - In some cases, you might want to have stakeholder meetings on a one-on-one basis. This allows you to dive deeper on relevant details with each stakeholder.
    - If you have a large number of stakeholders to manage, focus the meeting on your project's most influential stakeholders. Identify appropriate stakeholders for high touch communication. For example, you may focus the meeting on senior managers from each of the groups you need to engage.
    - Stakeholder review topics:
      - Present a project update (short, 2~5 min)
      - Seek and listen to feedback
      - Make a decision or resolve a major issue
    - This is a formal meeting, send documents ahead of time.
    - Can be a recurring or one-off meeting. The frequency depend on why the stakeholder is involved in the project.
  - Project reviews: how the project unfolded. It is retrospective.
    - Retrospective meeting agenda topics:
      - Lessons learned-what worked
      - Lesson learned- what to improve.
      - Celebrate the project success.

Module 6: closing a project

Objectives

- Explain why closing a project is important
- Determine when a project is complete
- Outline the project closing process
- Completing and closing a project are two completely different process
- How stakeholders, and team members play a role in closing a project.

Project closure

- Explain what the project closure is: The process performed to formally complete the project, the current phase, and contractual obligations.
- Completing a project is not the same thing as closing the project.
- There are three criteria that make up the project closing:
  - All work is done (all tasks). Review the project, double and triple check that all tasks.
  - Agreed upon project management processes are executed. The procedural or administrative work that needs to take place afterwards might slip your mind.
  - Get formal recognition and agreement that the project is done by key stakeholders.
- Closing a project is important because it ensures that nothing has fallen through the cracks. If a project isn't closed, your team's efforts, time, and credibility may be negatively impacted. An improper closing of the project may leave you on the hook for incomplete contracts or incomplete scope, but also because you want stakeholders to feel like their needs were met.
- To avoid negative impacts to your team, there are a couple of different types of projects that you'll want to know about and avoid:
  - Never-ending project: when the project deliverables and tasks cannot be completed. When tasks delegated to team members who don't have the skills to finish the task. Scope changes, not satisfied clients, etc. Maybe, it is easier to close the current project, and close the current one.
  - Abandoned projects: when inadequate handoff or transition on the project deliverables occurs. Final deliverable never makes it to the customer.
- You want to do everything you can to properly close a project because it may leave you on the hook for incomplete contracts, incomplete scope, or non-compliant practices.

Steps of the closing process (it has two parts, closing process for clients and stakeholders and closing process for the team)

Closing process for clients and stakeholders

- How can you make sure that clients and key stakeholders are happy with the project closing?
- First, decide if your project warrants a small closing process at the end of each milestone or a formal and more comprehensive closing phase near the very end. You may decide to have both.
  - Closing at the milestone, you need to decide if a particular milestone is final. First, you'll ensure that the project has satisfied the strategic goals that it was intended to meet. Here are the steps to conducting a closing process after each phase or milestone:
    - Refer to prior documentation (Statement of Work (SOW), Request for Proposal (RFP), Risk register, RACI chart)
      - Ask was all of the required work in the elapsed phase done?
      - Were all identified issues addressed?
      - Did every team member complete their assigned tasks?
    - Put together the closing documentation, such as creating closeout reports.
    - Conduct administrative closure of the procurement process
    - Make sure all stakeholders are aware that a phase or project is ending.

        - Execute necessary follow-up work
    - Closing at the very end of your project:
        - Provide the necessary training, tools, documentation, and capability to use your product
        - Ensure that the project has satisfied its goals and desired outcomes.
        - Document acceptance from all stakeholders
        - Review all contracts and documentation (Statement of Work (SOW), Request for Proposal (RFP), Risk register, RACI chart)
        - Conduct a formal retrospective (document your lessons learned). Include your team, any other teams involved, your stakeholders, and outside vendors in this meeting.
        - Disband and thank the project team.
    - Impact reporting for stakeholder: presentation that is given at the end of a project for key stakeholders. The purpose of impact recording to demonstrate how the project went and discuss the impact of your product or service. It's important for the project manager because you'll be able to demonstrate the success of your project on your terms and present the work you did to add value to the business. In this presentation, you'll cover how the project landed in terms of time, scope, and budget. You'll state when the new service or product launch and discuss any available feedback from users, and you'll explain how the desired outcomes were achieved.
- Highlight these key performance areas to demonstrate to your stakeholders how you achieved successful results and outcomes:
    - First, describe the goals and objectives you set for the project and what you hoped to have achieved by the end.
    - Then, describe how you met those objectives against your KPIs. A **KPI** is a measurable value that demonstrates how effective a company is at achieving their objectives. In your impact report, review how you defined the success of your project at the beginning, and highlight the outcomes you achieved that demonstrate this success.
    - Finally, showcase your schedule and budget performance by outlining your cost savings and efficiencies. Demonstrate that you met the deadlines set in your project scope and that your project was completed within budget.
- Use facts and statistics to highlight the results you achieved related to the performance areas described in the section above. Examples of common metrics you might include to demonstrate a positive impact could include:
    - Improvement in schedule performance
    - Revenue growth
    - Positive return on investment (ROI)
    - Increased external user counts
    - Increased percentage of internal users
    - Cost vs. margins
    - High percentage of customer satisfaction
    - Reduction in overhead
    - Reduction in technical issues
    - Time saved
- **Prepare an effective impact report presentation** An effective presentation can help your stakeholders understand your project's impact. In order to successfully convey all of the information you have prepared:
    - **Be concise**. While you should share metrics that illustrate how you achieved your project goals, you do not need to include extraneous details. For clarity, organize information by using bullet points instead of paragraphs.
    - **Understand your audience**. Make sure that your report does not use too much technical language or jargon to help your stakeholders understand it.
    - **Use visuals.** Use a digital presentation application, such as Google Slides, Microsoft PowerPoint, or Canva to present your impact report. Add diagrams, such as charts and graphs, to illustrate your results. Use images to add visual interest. Add icons to draw attention to information and help your stakeholders quickly understand information.
    - **Describe your learnings.** Discuss lessons you learned during the course of the project and any areas you have identified for improvement.
    - **Keep your stakeholders engaged**. Grab and keep your stakeholders' attention by varying the way that you present your data:
    - **Show**: Play videos of demos, testimonials, or case studies.
    - **Storytell**: Tell a story or anecdote related to the data in the report.
    - **Engage**: Ask for audience participation through questions, surveys, or quizzes.

Closing process for team members (celebrate, get the feedback)

- Retrospective: a meeting aimed to discuss successes, failures and possible future improvements on the project.
- Retrospectives are such an important aspect of the project. There are some formal retrospective, and some informal.
- Three main retrospective benefits
    - Encourage team building
    - Facilitate improved collaboration
    - Promote positive changes
- There may be temptation within your project team to resist reflecting before forging ahead into the next phase, but you can't grow and improve if you don't spend time reflecting. Reflecting is a great way to learn which practices you should keep doing and which ones you can improve upon. This means that you'll need to solicit feedback that will help you to do better in your next project. It's important to create a safe space for that feedback so that folks can really share what they're thinking and the team can grow together.
- Celebrate: Taking a moment to reward yourself with a token of appreciation turns the celebration into a team-building exercise.
- Formal retrospective, and how they tie to project closure:

Closing process for project managers

- Project closeout report. A document created by project managers for project managers. It severs three purposes:
    - It is a blueprint to document what the team did, how they did it, and what they delivered.
    - It provides an evaluation of the quality of work
    - It evaluates the projects performance with respect to budget and schedule
- Project closure report is like the transfer of knowledge from you to future project managers.
- Your closeout report could include things that worked out well and things that did not work out so well.
- See this closure report template

Course 5- Agile project management – August 22

- **objectives**
    - History of agile
    - Introduction of scrum
    - Core roles that makeup a scrum team
    - Best practices and real world scenarios

Module 1: the fundamentals of agile

Objective

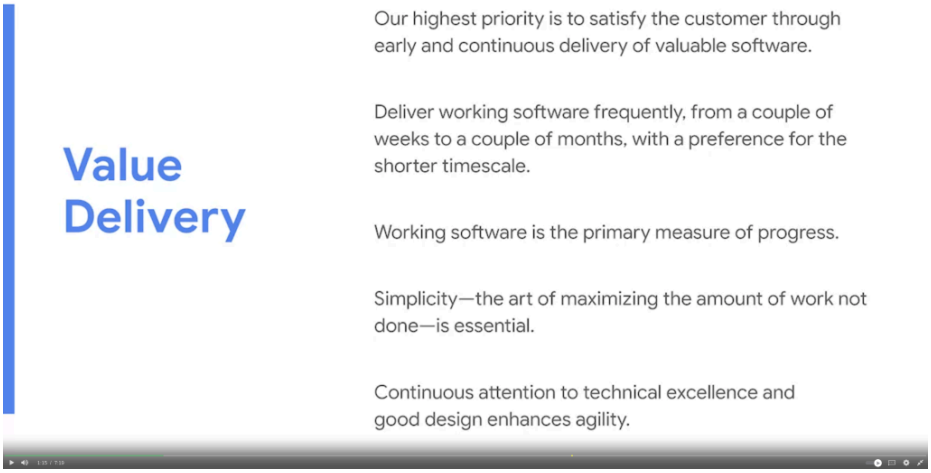
- History of agile
- Introduce the agile values and principles
- Agile in different industries

Intro to agile

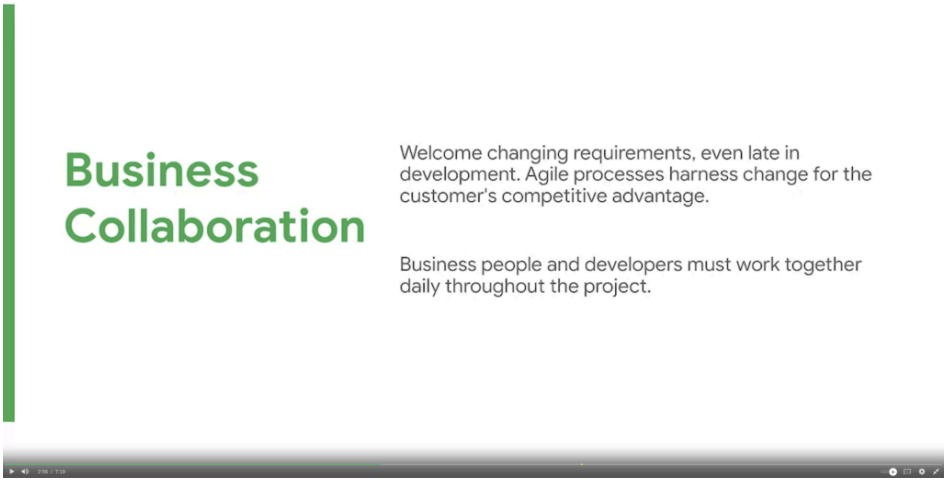
- Agile is the most interesting and flexible approach to project management. Agile is not a project management methodology in and of itself but more of an overarching approach and philosophy to deliver value to customers, which is the goal of most projects.
- We have waterfall & agile.
  - Waterfall: the sequential of linear ordering of phases, does not encourage changing
  - Agile: flexibility, repetition, and openness to change
    - being able to move quickly and easily
    - Flexibility and the willingness and ability to change and adapt
    - They take repetitive approaches: project process are repeated.
    - Team operates in shorter blocks of time, called iterations, a subset of tasks are done in each iteration.
    - The iterative approach enables a project to move quickly, as well as making it adaptive to change.
- Agile project management: an approach to project and team management that embodies agility and is based on the agile Manifesto.
- The Manifesto is a collection of **4 values and 12 principles** that define the mindset that all agile team should strive for.
- Agile started in 1990, as the software industry started and booming.
- Agile was created in response to the strict linear process of waterfall. It a response to the reality that the world, customer markets, and users are uncertain and unpredictable.
- Agile aims to get customer feedback more quickly.
- Agile values, principles, and frameworks have been applied to every industry.
- Agile methods draw heavily on lean manufacturing principles.
- Working with an agile mindset means always finding ways to work more efficiently by focusing on streamlining the process without reducing product quality or value.
- Agile aims to reduce waste. Unnecessary documentation is a form of waste. More collaborations is needed to reduce the waste.
- Aspects of a project:
  - Requirements: Conditions that must be met or tasks that must be finished to ensure the successful completion of the project.
    In a Waterfall project, you'll probably need a product requirements document, which lists the scope and requirements of the project. You need to have several formally approved project plans, and you might have a team of people whose job it is just to write and approve these plans. You might also set up a change control board—a formal and rigorous process to manage any changes to requirements. All this is designed to protect the team from building something that the client or stakeholders don't want and aims to minimize any changes that could lead to scope creep. Formally-approved project plans work well when the desired end product is known and understood.
    In agile, requirements are more dynamic, and expected to change. The team will get feedback on the work quickly and frequently. The team adjusts the requirements based on the feedback, before continuing to the next task.
  - Documentation:
    Waterfall method, use lots of documentation because there are a lot of handoffs between phases and handoffs among different teams within the project.
    In Agile, there is an emphasis on real-time, person-to-person conversations. Less documentation here, shorter documents that are just short enough to detail to achieve their purpose.
  - Deliverables: a tangible outcome from a project.
    In waterfall, you don't release deliverables until the very end. The final product release feels like a big event, major announcement.
    In Agile, there are more smaller frequent releases. The steady release of a project, in a new emerging industry or market, the steady release, allows getting feedback.
- Agile manifesto, four values of agile (core principles and values of agile project management):

- Agile values and principles inform the why, how, and what of agile project management planning and processes
- Instead of an email thread, directly discuss with people, work together, collaborate, help each other achieve the best outcomes possibles.
- Value individual perspectives and creativity as important contributions to the success of the project.
- Working software over documentation: work on things that create value, avoid spending time, on creating document, debating.
- Customer satisfaction is considered the highest priority.
- Collaborate with customers early and often. React and adapt.
- Acknowledge that change is inevitable.
- Agile is about delivering value in a world with high degrees of uncertainty, risk, and competition.
- Agile works best in industries or projects that are susceptible to or that encourage change and uncertainty.
- Adapt to changes at any time during the project.
- 12 principles of Agile methodology (these are different from the four values). They can be categorized into four themes.

- Value delivery:
  - Delivering the work as quickly as possible in order to get feedback and mitigate time risk.
    5 principles of value delivery
  - Simplicity allows a team to work on the things that matter most.

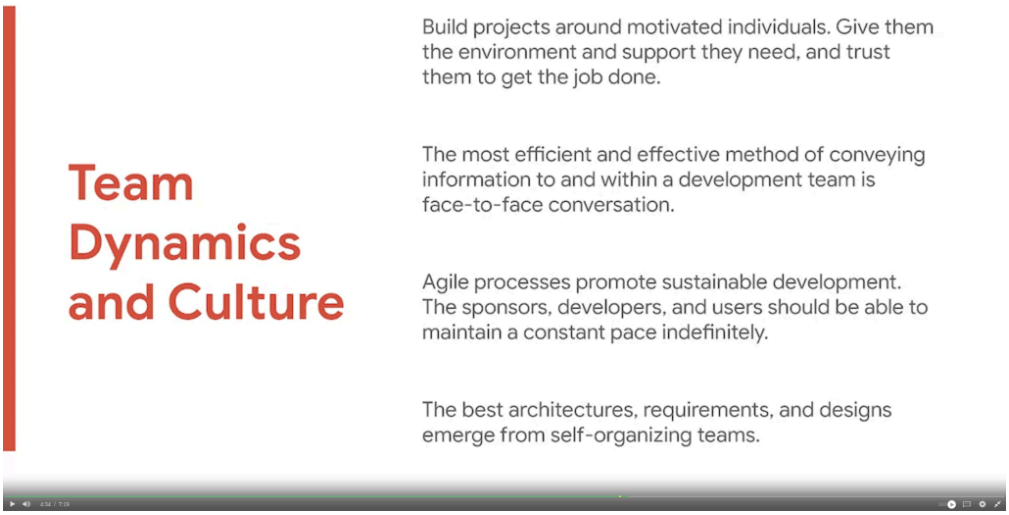


- Business collaboration: collaborating with your customers helps the team get critical business information immediately, allowing them to adjust and adapt to any new information instantly.
  Business people: those involved with things like sales, marketing, customer support, and account management.
  Developer: those who involved with making and creating products.

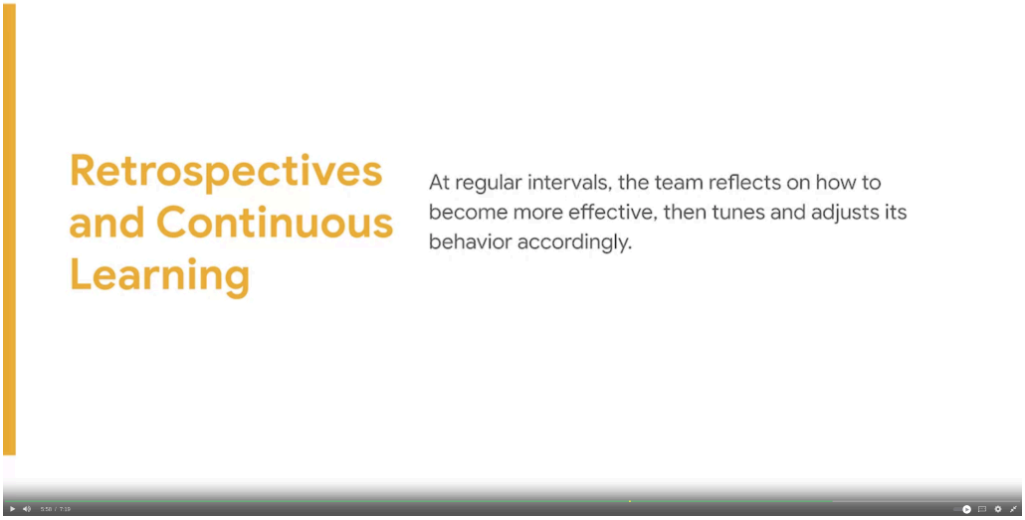


- Team dynamics and culture: create an effective team culture that is inclusive supportive, and empowering.
- Make sure your team:
  - Is motivated to do the right thing

- Fells trusted to do the right thing
- Has the resources and space to work closely together on their goals
- Works at a sustainable pace



- Retrospectives and continuous learning: Strive to continuously learn and adapt to what's working and what's not.
  - Questions for improvement:
    - How is the team doing?
    - Are the customers happy?
    - Are there processes we could optimize? Are our tools working for us?
    - Are we following the values?



- Other industries that may adapt agile methodology: bio, vaccine, media, food industry, fashion. Even this can be applied to agriculture, aerospace, manufacturing, mining.
- VUCA: an acronym that defines the conditions that affect organizations in a changing and complex world. Volatility, Uncertainty, Complexity, and Ambiguity.
  - it can help you decide which project management approach is best for you.
  - Volatility: rate of change and churn in a business or situation.
  - Uncertainty: lack of predictability or high potential for surprise. In this situation, it is difficult to plan.
  - Complexity: high number of interrelated forces, issues, organizations, and factors that would influence the project.
  - Ambiguity: possibility of misunderstanding the conditions and root causes of events or circumstances.
- When starting a new project, see the environment and conditions. If your project has high levels of VUCA parameters, it is a good sign you should consider an agile approach.

Popular agile framework

- Scrum: the term is coming from Rugby. Scrum refers to a formation in rugby, where all of the players on the team lean forward, lock their heads together, and then work as one unit to try and gain precision yards towards the scoring line.
- Backlog: The central artifact in scrum, where all possible ideas, deliverables, features, or tasks are captured for the team to work on.
- Sprint: a time-boxed iteration in scrum where work is done (1~4 weeks).
- Daily scrum/standup: a meeting of 15 or fewer minutes every day of the sprint.

- Roles:
  - Scrum master:
    - Responsible for ensuring the team lives agile values and principles.
    - Responsible for ensuring the team follows the processes and practices that the team agreed to.
    - Responsible for sharing information to the larger project team.
    - Responsible for helping the team focus on doing their best work.
  - Product owner:
    - Responsible for maximizing the value of the product and the work of the team.
    - Responsible for the inventory of work and has final say on how to prioritize the work.
  - Development team:
    - Responsible for how a team will deliver that product
- Reason's for scrum's popularity:
  - Clear roles and responsibilities, while continuously emphasizing the power of the team as a whole.
  - Regular and predictable meeting and delivery schedules, formats, and outcomes.
  - Supports and reinforces the agile values and principles, while adding structure and foundations that help new agile teams get started and more experienced teams get better.
  - Free and open for all to use. Huge amounts of online guidance and support, as well as scrum-specific training and certifications.
  - A scrum team should be cross-functional, with around three to nine team members (pizza-size team). A smaller team, does not have the diversity of skills, for the larger team, it is difficult to distribute the information.
  - Scrum works best for projects where the team and management are open-minded, adaptable, and value continuously learning how to be a better team.
- Throughout the paper, the authors continue to point out which characteristics of a team help to move the Scrum downfield. Those are:
  - **Built-in instability:** In the Scrum world, teams are given the freedom to achieve important outcomes with “challenging requirements.” Takeuchi and Nonaka explain that this gives teams “an element of tension” necessary to “carry out a project of strategic importance to the company.”
  - **Self-organizing teams:** Scrum Teams were intended to operate like their own start-up, with a unique order that lacks true hierarchy. These teams are considered self-organizing when they exhibit autonomy, continuous growth, and collaboration.
  - **Overlapping development phases:** Individuals on a Scrum Team must “work toward synchronizing their pace to meet deadlines.” At some point throughout the process, each individual’s pace starts to overlap with others, and eventually, a collective pace is formed within the team.
  - **Multi-learning:** Scrum is a framework that relies heavily on trial and error. Scrum Team members also aim to stay up-to-date with changing market conditions and can then respond quickly to those conditions.
  - **Subtle control:** As we mentioned, Scrum Teams are self-organizing and operate like a start-up, but that doesn’t mean there is no structure at all. By creating checkpoints throughout the project to analyze team interactions and progress, Scrum Teams maintain control without hindering creativity.
  - **Organizational transfer of learning:** On Scrum Teams, everyone is encouraged to learn skills that may be new to them as they support other team members.
- Different agile methodologies:
  - Scrum: already described.
  - Extreme Programing (XP): It took software developers to the extreme level. But it can be applied in non-software environment.
    - Aims to improve product quality and the ability to respond to changing customer needs.
    - Takes best practices for the development process to extreme levels.
    - There are four basic activities that are performed during the product development process that the XP method tries to enhance. XP activities:
      - Designing: write a design doc for the code or various pieces you want to deliver for non-software activities.
        XP want to ensure that all of the pieces of the product will fit together properly, so it stresses simplicity. Simple design takes less time to complete.
      - Coding:
        XP demands clear and concise code so that others can easily read and understand the program.
      - Testing: test for flaws. The goal is to test for and eliminate any flaws in a feature before building it and continuing on.
      - Listening: listening to the customer and ensuring that the requirements are integrated into the product.
    - XP innovative practices:
      - Pair programming: two team members work together at the same time on one task.
      - Continuous integration, and continuous refactoring. Merging product changes into a shared version of the product.
      - Avoid big design up front: design is just enough to get started and should be continuously improved as the product evolves.
      - Write tests, not requirements: embed product requirement into the test plan.
  - Kanban: Comes from two Japanese words: Kan = sing, Ban = board
    - Provides transparent visual feedback
    - Displays the progress of a project as to do, in progress, and done.
    - Ensures that the project team only accepts a sustainable amount of in progress work.
    - Work In Progress (WIP) Limit (called in short WIP limit): tasks are limited to what the team can actually handle during a certain amount of time. By focusing on less work, the work is done is faster. This is to maximize efficiency, which is called **FLOW,** a core principle of Kanban that aims to maximize efficiency.
  - Lean: consists of five principles
    - Define value: identify and focus on what the customer wants and include the customer.
    - Map value stream: map out the steps to production and challenge all wasted steps.
    - Create flow: ensure the product flows through the value stream efficiently, eliminating waste throughout the cycle.
    - Establish pull: Ensure the customer is pulling on the product through this stream by asking for features and incremental deliveries.
    - Pursue perfection: push the team to continuously improve the first four process steps.
- Agile as a way of thinking about the project-delivery process through the values and principles outlined in the Agile Manifesto.
- Agile values and principles can be achieved through certain project delivery frameworks and methods.
- The real power of agile comes from not only adopting certain processes but also from adopting a certain mindset that is different from traditional waterfall models.
- How to use agile in a waterfall method? Even though these two approaches have differences, but both have the same steps and phases and blending them makes a lot of sense. Waterfall project management phases:
  - Initiation
  - Planning
  - Executing and completing tasks
  - Closing out the project.

- Reasons to blend waterfall and agile styles
  - Your stakeholders, customers, or sponsors are more comfortable with traditional approaches and workflows, but your project team is already established in scrum.
  - Regulatory requirements insist of certain traditional work processes.
  - A vendor is already following a traditional approach and the integration between the teams requires some blending of methods.

Module 2: scrum 101

Objective

- Scrum: the most commonly used agile framework.
- Scrum guide: a main source of truth for scrum team and is available for free at https://scrumguides.org/
- Scrum is so prevalent that people sometimes use the term scrum and agile interchangeably.
- Agile is the foundational philosophy and mindset, while scrum is a framework that materializes or brings that philosophy to life.
- Scrum theory:
  - 3 pillars
  - 5 values
- Scrum team roles
  - Product owner
  - Scrum master
  - Development team
- Apply scrum concepts
- Introduction to scrum artifacts

The pillars and values of scrum

- Scrum: a framework for developing, delivering, and sustaining complex products.
- Scrum is iterative and incremental approach:
  - Iterative: Repeating cycles of delivery. It is time-boxed,
  - Incremental: work is divided into smaller chunks that build on each other. Each instance of the work is called increment.
  - Iteration and increment allows us to keep checking in on our progress throughout the life cycle of the project.
- Scrum is founded on a scientific theory called empiricism: the idea that true knowledge comes from actual, lived experience. Don't assume things go as planned, or try to predict the future in an uncertain world. Instead, if you are using scrum, you are ensuring that each decision you make in your project is based on real experience and hard data.
- Empiricism is built on three foundation pillars:
  - **Transparency**: make the most significant aspects of our work visible to those responsible for the outcome.
    Transparency inside a scrum team is critical to the team's productivity and the project's completion. Encourages more collaborations, and fewer mistakes.
  - **Inspection**: conducting timely checks towards the outcome of a sprint goal to detect undesirable variances. The more inspections that take place, the more improvement a team experiences in their work.
  - **Adaptation**: adjusting project, product, or processes to minimize any further deviation or issues. Although adaptation includes immediate fixes to problems, it may also be about implementing a change, so future projects don’t repeat past mistakes.
- Five values of scrum:
  - Commitment: personally committing to achieving the goals of the scrum team
  - Courage: the scrum team members must have the courage to do the right thing and work on tough problems. Like working on a task that require you to learn a new skill. Courage means telling your teammate, you stuck and you need help.
  - Focus: everyone focusing on the work of the sprint and the overall goals of the scrum team.
  - Openness: the scrum team and its stakeholders agree to be open about all of the work and challenges with performing the work.
  - Respect: team members should respect the opinions, skills, and independence of their teammates.
- In order for a team to bring the three pillars of scrum to life, they must act in accordance with the five scrum values.

Scrum roles and responsibilities

- One main scrum goal is motivation. The best way to motivate individuals, is t give them a mission and product vision, that they really care about.
- Mission: a short statement that stays constant for your team throughout the process and give them something to work toward. A mission tells me why we are doing the work. A product vision helps me imagine what the work will be like when we are done.
- **Product vision**: when you set a vision, you're making it clear what the team is responsible for and where your team's boundaries are.
- Product backlog: the single authoritative source for things that a team works on to achieve the project goal. It contains:
  - Product features
  - Product requirements
  - Activities associated with product deliverables
- Scrum team roles (3~5 roles)
  - **Scrum master: builds the thing fast**. When a team deliver the product to the users. This role is roughly equivalent to the project manager role, in traditional projects. The scrum master promotes and supports the scrum process by helping everyone understand and implement scrum. Helps the team to be the very best. Coaching the team to manage external forces, as well as maximizing the team's internal potential.
    - Scrum master responsibilities:
      - Coaching team members on agile and scrum practices, rules, and values.
      - Helping to find ways to manage the product backlog effectively.
      - Facilitating scrum events, such as retrospective.
      - Helping the team remove blockers.
      - Preventing unhelpful interactions from outside of the team.
    - Scrum master skills
      - Organizational skills.
      - Supportive leaders (who focus on the needs of others and the needs of the team before their individual needs. They're not aiming to raise themselves up as a manager of the team who bosses people around; rather, they're always asking questions like "How can I help?" or "What would help the team go forward on this project?"
      - Facilitate productivity and collaboration.
      - Coach team members
      - Great communicators
    - If the role of a Scrum Master differs from a traditional project manager. The answer is yes, the two roles can be quite different, although they may be played by the same individual and require a similar skill set. That work may include things like budget management, risks spreadsheets, or Gantt charts. But as I've said, it's common for traditional project managers to take on the role of a Scrum Master.
  - **Product owner: build the right thing** and makes sure everyone understands the why. A product owner is tasked with ensuring that the team is building the right product or service.

    - A product owner responsibilities:
        - Continuously maximizes the value of the product delivered by the scrum team.
        - Helps the scrum team understand why their work matters within the overall goal and mission.
        - Prioritizes the product backlog to optimize delivery and value to customers.
        - Ensures the backlog is visible and transparent to all.
        - Makes sure that product or service fulfills the customers' need.
    - Key character traits:
        - Customer focused
        - Decisive
        - Flexible
        - Optimistic and positive
        - Available
        - Collaborative
        -
- **Development team: build the thing right.** How a team deliver the product. These are the people who do the work to build the product (3~9 people).
    - Their responsibilities include:
        - Creating a plan for the Sprint, the **Sprint Backlog** (the set of Product Backlog items that are selected to be completed during the upcoming Sprint)
        - Instilling quality by adhering to a Definition of Done
        - Adapting their plan each day toward the Sprint Goal
        - Holding each other accountable as professionals
        - Executing sprints by designing, building, and testing Product Backlog items in increments
    - Traits of the development team:
        - Cross functional
        - Self-organizing
        - Supportive
        - Customer-oriented
        -

- Scrum team must exhibits a few specific skills.
- Scrum teams are cross-functional. When scrum team delivers something, it's the accomplishment of the entire team (different expertise in the same team).
- Scrum team are self-organizing (or self-managing). Although teams are self-organizing, high-performing scrum teams often have a manager who sits outside of the scrum team and provides strategic leadership and individual career development without disrupting the self-organizing nature of scrum.

Module 3: Implementing scrum

Objective

- Setup and day-to-day execution of a scrum team
- Popular tools, methods, tips, and tricks for working with a scrum team
- Product backlog
- Estimation (relative effort estimation)
- Five scrum events:
    - Sprint
    - Sprint planning
    - Daily scrum
    - Sprint review
    - Sprint retrospective

Product backlog

- Product backlog: the single authoritative source for things that a team works on. It contains all of the features, requirements, and activities associated with deliverables to achieve the goal of the project.
- Three key feature of the product backlog:
    - Living artifact
    - Owned and adjusted by the product owner
    - Prioritized list of features
- The sprint goal is the long-term objective for the scrum team that is included in the product backlog.
- The product backlog is the guide and roadmap of your product. There are a few best practices and pieces of data to capture when working with product backlog:
    - Description
    - Value
    - Order
    - Estimate (effort time)
- To capture and manage the backlog items, we can use **user stories (task):** User stories short, simple descriptions of a feature told from the perspective of the user.
- User story is made up three elements:
    - User
    - Action
    - benefit
- Here is how you write the user story: As a <User role> I want this <action> so that I get this <value>.
- Each user story should meet six different criteria (INVEST):
    - Independent (story should be started and ended by itself)
    - Negotiable (there should be room for negotiation and discussion for this item).
    - Valuable (completing the user story should deliver value)
    - Estimable (definition of done must be clear, so that each team can give the user story an estimate)
    - Small (it should fit withing one sprint)
    - Testable (test can be written to check and make sure it meets the acceptance criteria)
- While the product owner is the main person responsible for writhing user stories, the team has responsibility to give feedback on whether the user story is clear and fits the invest criteria before they invest any time into it.
- Epic: a group or collection of user stories. It is like a very large user story, one that cannot be delivered in a single iteration, and may need to be split into smaller stories.

- With the user story, the product owner creates something called the **acceptance criteria:** the checklist you will use to decide whether the user story is done.
- Backlog refinement: the act of keeping the backlog described, estimated, and prioritized so that the scrum team can operate effectively.
- For the backlog refinement, the product owner (and probably the team), review the product backlog to ensure:
  - It contains the appropriate items, and that nothing new is needed or nothing needs to be removed.
  - That the items are prioritized by the product owner, this is also called setting the order field.
  - That the items at the top of the backlog are ready for delivery with clear acceptance criteria.
  - And the backlog items include estimates or an informed assessment about how much work a particular backlog item will be.
- One major task for the backlog is estimation. Through estimation, we can find out how much work we have ahead of us. Here we use **relative estimation**, instead of absolute estimation (time and effort).
- Relative estimation: instead of trying to determine exactly how long a task will take, we compare the effort of that task to another task, and that becomes the estimate. There are two methods for relative estimation:
  - T-shirt sizes: small, medium, large.
  - Story-points: the picks an item as the anchor item, and conduct their estimation relative to that item. Team should use the Fibonacci sequence and continues on to infinity! This is helpful because, as the estimate gets higher, the uncertainty and risk also higher.
- It is up to the team to decide when and how often to conduct backlog refinement.
- Some examples of Agile estimation techniques are:
  - Planning Poker
  - Dot Voting
  - The Bucket System
  - Large/Uncertain/Small
  - Ordering Method
  - Affinity Mapping
- **Characteristics of effective estimation** Regardless of which technique your team chooses, there are several important characteristics the techniques share that lead to effective estimation:
  - **Avoids gathering false precision of estimates.** In Scrum, assigning rough estimates results in more accuracy across the project. Therefore, if the team focuses on identifying relative estimates—rather than a team having a lengthy debate about whether a task will take seven or 10 days of work—the team saves time and avoids potentially missing deadlines.
  - **Avoids anchoring bias**. Many of these techniques (e.g., Planning Poker) keep the initial estimate private, which allows team members to form an independent opinion on the estimate before sharing their thoughts with the team. This prevents a known phenomenon called *anchoring bias*, where individuals find themselves compelled to put forth estimates similar to others in the room to avoid embarrassment.
  - **Promotes inclusivity**. These group estimation techniques not only lead to better estimates but also help the team develop trust and cohesiveness.
  - **Leads to effort discovery**. Estimating in these dynamic ways can help the team uncover strategies to get items completed which might otherwise not have been revealed.
- Five scrum events:
  - Sprint/iterations: within a sprint, the amount of work is planned based on the historical capacity of the team and is made ready for the sprint planning event. We can assume each sprint as a mini project: planning, execution, delivery, closing, retrospective. Sprint timebox is from 1~4 weeks. To find out, think about what you expect the frequency of changes to be. Also, think about how much focused time your solution developers need to build a product backlog item. Additionally, think about how much overhead goes into a delivery of your product.
  - Sprint planning: the entire scrum team comes together and meets to confirm how much capacity, meaning time and people, are available during this sprint. The key delivery of the sprint planning is the sprint backlog (the set of product backlog items that are identified for completion during the upcoming sprint).
  - Daily scrum/standup: time for the scrum team to synchronize and prioritize activities for the day. 15 min every day or less. Each member answers these questions:
    - What did I do yesterday?
    - What will I do today?
    - Do I notice any impediment/blocker? Scrum master should unblock the team with the minimum delay.
  - Sprint review, happens at the closing, important for inspection and adaptation pillars of the scrum and demonstrate openness, courage and respect. This is a meeting with the entire scrum team where the product is demonstrated in order to determine which aspects are finished and which are not. The development team and the product owner will play the main role.
    - Sprint review covers:
      - Exploration of which items should be considered done in the product backlog.
      - Demonstrate and inspect the product.
    - Allows to review what they have accomplished.
    - Team also unveils the product increment: what is produced after a given sprint.
    - A product is releasable when the team has developed a minimum viable product, which has a set of implemented features of requirements.
    - A minimum viable product is a version of a product with just enough features to satisfy early customers.
  - Sprint retrospective: an essential meeting of up to 3 hours for the scrum team to take a step back, reflect, and identify improvements about how to work together as a team.
    - In the retrospective:
      - What is working or not working for the team regarding the people, processes, and the tools?
      - What improvements are worth exploring in the next sprint?
      - What improvements were put in place for the past sprint? Were they helpful or not?
    - Environment:
      - Blameless: create a safe space for candor by acknowledging potential awkwardness, and if needed, create a space for anonymous or private feedback.
      - Participation is key! Retrospectives only work if participants feel that their input matters.
      - Balance the negative with the positive: don't just ask where you can improve, but also ask, where did we notice success?
      - Act on it search for improvements or simply convert the things that worked best into your team's habits and norms.
    - Pitfalls:
      - Avoid too many gimmicks
      - Try not to only focus on the negative
      - Avoid changing processes after each retrospective
    - Best practices
      - Ask open-ended, probing questions
      - Consider diverse styles of communication and participation

        - Cover many aspects of the sprint when conducting a retrospective
        - Consider reflecting periodically on scrum theory and values by asking specific questions.
- Timeboxes:
    - create a sense of urgency which will drive prioritization.
    - Provide a window of focus which will translate into productivity gains.
    - Help the team develop a predictable rhythm to their work.
- Definition of done: refers to an agreed upon set of items that must be completed before a user story or backlog item can be considered complete. Some example:
    - The code or solution itself is reviewed by an independent peer group.
    - The product or unit passes all testing requirements, which could include security or performance testing.
    - Documentation is completed.
    - All user story acceptance criteria specified by the product owner is met.
    - The product owner accepts the user story.
- Having a potentially releasable Increment also allows the team to get early feedback on the product, ensure that the work is high quality, and have the opportunity to respond to change. You should always focus on a potentially releasable product increment as your sprint goal.
- Potentially **releasable** (or shippable) Product Increment is a handy way for teams to think about the desired result of a Sprint.
- A **minimum viable product (MVP)** is a version of a product with just enough features to satisfy early customers. Eric Ries, an entrepreneur and author, coined the term in this guide and defined an MVP as “that version of a new product which allows a team to collect the maximum amount of validated learning about customers with the least effort.” In other words, gathering insights from an MVP enables quicker feedback from users than developing a full-featured product that may not be 100% tested or secure. A minimum viable product is a package of features that may take several sprints to develop, but every sprint’s goal is to produce a **product increment**.
- Scrum concepts that allow teams to manage their work as they progress through a sprint: burndown charts and velocity.
- Burndown chart: measures time against the amount of work done and amount of work remaining. For the T-shirt size method, map the size to a number and use it for the burndown chart.
- Velocity: the measure of how many points the team burns down in a given sprint. Based on the velocity:
    - How long it will take to complete the entire product backlog.
    - How much of your backlog will be completed by a particular time.
- When we refer to story points, we are referring to a unit of measurement that expresses the estimated effort required to implement that Product Backlog item.
- Do/Don't of velocity and burndown chart:
    - Do: be careful when sharing velocity with external stakeholders
    - Don't: use velocity as a performance metric
    - Don't: use velocity as a comparison metric
    - Do: proceed with caution when using velocity as a metric for project delivery date.
- Kanban board, another good tool:
    - Visualization
    - Work in progress limits: constraints on how many work items the team actively works on at any given time.
    - Flow of work

Module 4: Applying agile in the organization

Objective

- How to use scrum and agile in your daily life
- Help thinking agile in job interviews and potential work scenarios.
- Techniques to respond to risks and team dynamics
- Agile applied to broader project management discipline.

Understanding value driven delivery

- Explore the result of the project and the end product you deliver.
- Define value as it relates to project management
- Strategies and tactics to maximize the value of your end product.
- Value can mean different things for each customer based on what they expect the product to accomplish. Value could be financial benefits, user growth, engagement or compliance adherence.
- Value driven delivery means you and your team are focused on delivering a product of high value. If you just deliver a product, it does not mean it is valuable. Agile redirects the team focus on to be about the product and ensures that the process for producing the product supports the goal of delivering value.
- How to confirm your team is focused on value-driven delivery?
    - Build the right thing:
        - Understand what your customers want, ask about their goals.
    - Build the thing right.
        - Ensure that the team only builds the requested or approved features.
    - Run it right.
        - Your team has thought how the user will interact with the product once it is been delivered.
        - How do users get support?
        - How does the product add value to users long after they initially received it?
        - How do you make users that new features and capabilities reach the existing users?
- One way to help team make sure they are staying focused is by following a value roadmap. Value roadmap:
    - an agile way of mapping out the product development process. It can be used for all types of businesses.
    - The value roadmap is a guide that demonstrates:
        - Where to go
        - How to get there
        - What to accomplish along the way
    - Team gathers input from customers and stakeholders and apply their findings to each iteration of the product.
    - Helps the team explain the vision of the product
    - Used to identify important milestones
- Components of a value roadmap:
    - Product vision: this is a critical step to start any new scrum project (this is based on user interviews and market analysis). It defines:
        - What the product is
        - How it supports the customer's business strategy
        - Who will use it.
    - Product roadmap: created and maintained by the product owner.
        - High-level view of the expected product and its requirements
        - Estimated schedule for reaching milestones

- Each team or company may interpret the roadmap slightly differently. Here are some of the various types:
  - Project roadmap
  - Product roadmap
  - Value roadmap
  - Lean roadmap
  - Agile roadmap
- Tips Creating an effective product roadmap:
  - Ensure product release dates are only rough estimates (because as an agile team, things can and do change, and it may set the team to failure.).
- The **benefits** of developing and maintaining a product roadmap are numerous:
  - Clarifying the sequence of deliverables
  - Showing teams how their efforts relate to the north-star vision. In other words, their ultimate goal.
  - Showing stakeholders the incremental value that will be achieved over the course of the project (rather than reviewing it as one big delivery at the end)
  - Helping stakeholders roughly understand the layout of the work behind the deliverable
- There are also some **pitfalls** around roadmaps to avoid:
  - Letting stakeholders think the roadmap is set and unchangeable. This may cause stakeholders to impede teams' ability to adapt in response to new information, as well as put a lot of pressure on teams to achieve deadlines no matter what it takes.
  - Spending too much time fine-tuning delivery dates versus keeping them rough and improving specificity as the dates get closer
  - Putting all the work into creating the roadmap rather than producing the deliverables
- Here are some **best practices** to help you get the most from your roadmaps:
  - Make it highly noticeable to the team and refer to it frequently.
  - Clearly indicate the highest priority items.
  - If possible, clearly indicate the highest value items.
  - Make it visible to your wider stakeholder group so that they can use it for their planning.
  - Conduct regular reviews of the roadmap with sponsors, stakeholders, and the team to ensure that it is still providing the blueprint for the project.

- Release plans: product owner and the project manager worked together to get this. Product releases occur when the team has developed a basic working version of a given feature or requirement. A release plan includes the approximate date when the team is expected to release and deliver certain features to the customer or user. An agile team may have several releases over the course of a project until their project is considered done. A release plan contains:
  - A release goal, which is an overall business goal for the features you plan to include in the release.
  - List of backlog items (epics, user stories, and features you require for that release).
  - Estimated release date
  - Other relevant dates that impact a release
- Tips Creating an effective release plans:
  - Product owner and project manager or scrum master must work together.
  - Release plans need to connect the product roadmap with the team's capacity and velocity. Capacity and velocity: the measure of the team's ability to complete work at a certain pace.
  - Factor in any hard dates or deadlines.
  - Scrum master or project manager should always review the release plan before starting a sprint planning session.
- Common factors that may affect the release plan:
  - Team velocity changes
  - Change to product scope
  - Improving the understanding of how much effort is needed to build certain features.

- Responding to change over following a plan. The best way to think about changing your plan is to break it down into three stages:
  - Identifying a needed change: Here are some aspects of your project that may be candidates for change: scope, time, and costs (or resources). As we previously learned, these are called the "triple constraint," and they provide a great framework for evaluating change in Agile and traditional projects.
    - In Agile, scope refers to the contents of the product roadmap, the items in the Product Backlog, the intended deliverables of the project, and the intended users or customers. This is the "what" of the project.
    - Time refers to the elements of time or layout of the deliverables over a period of time. This could include the product roadmap timeline, release schedule, or even the Sprint duration. This is the "when" of the project.
    - Costs or resources refer to the makeup of the Development Team, project managers, and product owners, and other "business people" as well as the equipment available to create the deliverable. This is the "how" of the project.
    - Agile projects are open to change in any of these three areas, and a needed change could be identified by any project stakeholders, including the Product Owner, Project Manager, Scrum Master, or the Development Team themselves. Sources of identified changes could include:
      - Customer feedback on early prototypes results in new features and some deleted features (scope change)
      - Sprint Retrospective identifies an area of understaffing (cost or resource change)
      - Critical project dependencies or deliverable dates have shifted, resulting in a change to the project roadmap (schedule or time change)
  - Deciding to make the change: There are many decision-making models available to reference. Here are the basic steps involved in most of these models:
    - **Identify the "decider."** It is best to have a single person—generally the Product Owner or a senior stakeholder—in the role of decider to ensure consistency and accountability.
    - **Develop and share what factors are important to the decision**, and gather supporting data that will help the decider make the decision.
    - **Openly discuss the benefits and costs of the decision.** Identify areas of uncertainty and capture assumptions.
    - **Document the decision.**
  - Implementing the change: Once changes are approved, it is important to do several things:
    - **Document the change and decision-making process.** Include meeting notes, pros/cons lists, assumptions, and data that went into making the decision to change the project.
    - **Capture the change in any affected artifacts**. Update any roadmaps, Product Backlogs, staffing plans, and integration dates, and include a reference to the source of the change so that stakeholders can refer back to it. Consider using revision labels or dates on affected documents like "version 1.2" or "updated on December 20th" so that the team can clearly recognize that the document has changed.

        - **Share the change with all affected stakeholders.** You can do this through many types of forums: in person at meetings, in documentation and meeting notes, and through email announcements.
        - **Monitor the change for a certain amount of time.** This ensures that the team is supportive and aware of the change.

Leading through changes and challenges

- Understanding organizational culture and the change management process is crucial when introducing new ways of working.
- Organizational culture
    - Based on shared workplace values
    - Demonstrated through people's behaviors, activities, the way they communicate, and how they work with each other. A change that is out of sync with the organizational culture is much more difficult to complete.
- Change management: The process of getting people to adopt a new product, process, or a new value system.
- Change takes patient persistence.
- To bring agile/scrum to a team: increase a sense of interest, engagement, and motivation with the project outcome.
    - Create a sense of ownership:
        - find an executive sponsor who also feels a sense of ownership for the change you are creating.
        - Having buy-in from someone at the top increases your chances of successfully driving any change in organizational culture.
    - Create a sense of urgency:
        - Ask questions about what is working and what is not working right now.
            - What is preventing us from providing the best possible product to our customers?
            - What is allowing our competitors to outperform us in this market?
            - How can we help our teams become more productive and supported in their work?
- Influencer **change framework:** it is about someone's ability to lead and influence others to change their behaviors, hearts, and minds to produce meaningful, sustainable results. To influence is different than to persuade. Persuasion is short-term, while influence is lasting. In order to have real influence, you need others to trust you, consider you an authority, and have confidence in your decisions.
- **Three keys to influence:**
    - **Clarify measurable results:** You can't influence others to change until you know what you want, why you want it, and when you want it. Use SMART goal settings.
    - **Find vital behaviors:** the action an individual takes at a pivotal moment in the context of the change they are seeking. For example, if a member of the Development Team is seeking to increase involvement of the Product Owner throughout the development process, they might exhibit a vital behavior when they have just finished mocking up a new feature. Instead of just continuing on to the next item on their to-do list, they might send an email to the Product Owner to review their work and provide feedback. By choosing to include or exclude their Product Owner at a pivotal moment, the developer is taking a small action to enact the change they want to create.
    - To determine vital behaviors, you might consult experts, scan the best and most-cited articles and research, or perform a culture assessment by identifying norms and customs within the team. When identifying the behaviors, evaluate which behaviors are constructive to the change you wish to promote and notice examples of those who succeed where most others fail.
    - **Use the six sources of influence:** When determining how to influence your target audience to create change, you should consider using all of these sources to increase your chances of success. You may even consider prioritizing these based on your knowledge of your audience. For example, some target audiences may be most swayed by financial incentives, while others may be more incentivized by social justice impacts.
        - **Personal motivation**: Are the individuals motivated internally to engage in the new behavior? Can you help them "love what they hate"? *Example*: Ensure the Product Owner is timely, appreciative, and effective while giving their feedback.
        - **Personal ability**: Are the individuals capable of performing the behavior? Do they have the ability, knowledge, and skills to "do what they can't"? *Example*: Ensure that the developer knows how to use the available demo tools and can easily send a quick video of the new feature in their email to the Product Owner.
        - **Social motivation**: Are there social contacts or networks encouraging or discouraging this new behavior? *Example*: Have the Development Team members remind each other in the Daily Scrum to email the Product Owner before they finalize the work.
        - **Social ability**: Does the team have resources within their social network to help them carry out the new behaviors? *Example*: Give the Development Team a tool to track all of their demos to the Product Owner during the Sprint.
        - **Structural motivation**: Are there rewards or incentives that they will receive if they perform the new behaviors? *Example*: Provide a coffee gift card Sprint award that the Product Owner gets to award after each Sprint.
        - **Structural ability**: Are there environmental factors at play that either deter or support the new behavior? Can you make the incorrect behavior harder to do than the correct behavior? *Example*: Add a rule to the content management system that pre-populates the name of the Product Owner in the reviewer list.
    - Conger's steps to effectively influence:
        - Establish credibility
        - Frame for common ground
        - Provide evidence
        - Connect emotionally
    - To apply all Conger's steps, you can form a coalition: a temporary alliance or partnering of individuals or groups in order to achieve a common purpose or to engage in a joint activity. When two or more people advocate together for an idea, they are able to exert more influence that if they attempted to act alone.
    - Forming a coalition is an effective negotiation technique. Creating a coalition:
        - Boost your credibility
        - Find common ground and provide evidence
        - Can connect emotionally (including someone who either has a positive relationship with the stakeholder or understands the stakeholder and the goal well enough to make a connection)
    - An effective coalition includes people with the right mix of influence or power and interest. You want to balance your coalition with people who have a high level of power in your organization to help influence and get things done.
    - Persuasive coalition request:
        - Clearly state the issue
        - Ask the person for their support
        - Refer to the source of power you identified for that person.
- Coaching an agile team:
    - Design the plays with the team: how to run sprint review, working day-to-day, publishing plans to stakeholders.
    - Provide feedback to the team: provide guidelines all the time. It is not only for fixing broken things, but finding processes and activities that worked really well and encourage the team to continue using the things that work.
    - Celebrate and learn with the team: in case of failure, still acknowledge the loss. It is important for the team to feel positive about any disappointment and think of it as a learning opportunity.

- Both managing and coaching play important roles in project management. The difference in each approach is in communication. Management is about giving direction, while coaching is about teaching. Some situations will call for coaching, and others will call for management.
- At its core, managing requires overseeing the work of others and can include:
    - Onboarding and orienting new employees
    - Conducting meetings
    - Delegating tasks and assignments
    - Monitoring progress and performance against those tasks
    - Making high-level decisions
- In Agile project management, however, teams are designed to be self-managing. A self-managing team has the autonomy to choose how best to accomplish their work, rather than being directed by others from the top down. Agile team members should also feel empowered and equipped to problem-solve on their own.
- Your role as an agile project manager or scrum master is similar to the role of a coach.
- Coaching is a two-way communication style aimed at influencing and developing team members' skills, motivation, and judgment. Coaching empowers team members to arrive at solutions on their own by teaching them critical thinking and decision-making skills. This is achieved through offering feedback and providing opportunities for professional development. When challenges arise, coaches will offer guidance, then get out of the way. Coaches don't jump in during times of crisis in a way that a manager would. Coaches ask questions to help team members arrive at conclusions on their own.
- Coaching is about building confidence and capabilities so that individuals can continuously grow and improve. There are a few principles to keep in mind when coaching:
    - **Motivate**: Coaches motivate team members to take action. They point out the value in others' work and instill within them a sense of pride in what they do.
    - **Support:** Coaches are an accessible resource for their team to come to when they experience problems or if they have an idea they want their feedback on.
    - **Encourage and appreciate:** When someone on their team is struggling with a heavy workload, a coach will acknowledge and validate the weight of their efforts and assure them that they are capable of handling the challenges ahead.
- Coaching is appropriate in many circumstances, especially when you need to build up the confidence of an individual or a team. The most effective leaders strike a healthy balance between managing and coaching based on the needs of the situation, individual, and project they are leading.
- Agile team challenges, during the change process-4 themes of agile principles:
    - Value delivery is about making sure the team is delivering working solutions frequently.
        - Signs of value delivery issues:
            - Missing expected delivery dates.
            - Burned out
            - Too many items in progress
        - Solutions to value delivery issues:
            - More demos of the solution (finding areas to improve and speedup)
            - Use retrospectives: anything slowing down the team
            - Make sure that everyone understands what done means
            - Focus on only a few user stories per sprint.
    - Business collaboration
    - Team dynamics and culture
    - Retrospectives
- Business collaboration is about making sure the developers are collaborating with business people on how to build the right product.
- Sign of business collaboration issues:
    - You might notice that the team is overwhelmed with critical feedback or change requests.
    - Us vs Them mentality between the team doing the work and management.
- Solutions to business collaboration issues:
    - Addressing critical feedback and change requests by doing more demos.
    - Conducting a solution design sprint.
    - Ensuring changes to the backlog are introduced only in between sprints.
- Team dynamics and culture is about how human beings are complex creates with a log of different motivations and styles of working.
    - Low team morale.
    - Lots of conflict.
    - Low conflict (if the team never has disagreements, a sign that it might be worried about starting a conflict because they don't feel like it is a safe environment.
- Solutions to team dynamics and culture issues
    - Run a team brainstorm session
    - Change up the workflows
    - Take a training class together.
    - Use retrospective technique
- Some other common coaching challenges:
    1. Managing a stable product roadmap
        i. Agile project always experience changes in the roadmap. Responding to these changes quickly is a core agile value. But if there are too many changes, it leads to instability. There are two main causes of an unstable product roadmap;
            i. product ambition: product leadership is overly ambitious about what the team can realistically deliver. They may want to make the stakeholders happy, and overpromise what the project can deliver. Here are three ideas to maintain a healthy roadmap management plan between you and the product owner-Product ambition solutions:
                a. Agree up front how to handle new opportunities (define when they are review and estimated)
                b. Setup regular roadmap reviews with the entire team.
                c. Promote sharing knowledge between the product owner and the development team.
            ii. product assumptions: when there is uncertainty in the product, you may be required to make some assumptions to move things forward but making too many assumptions can jeopardize the team's success. Product assumptions solutions:
                a. Document the assumptions and make them transparent.
                b. Check assumptions against unbiased user research. Unbiased user assumption
                    i. gathers information about what users really want.
                    ii. It allows you to confirm or reject assumptions.
                    iii. And helps you move forward with confidence
    2. Incomplete implementation of scrum (or implementation of scrum practice without proper support and coaching).
        i. It may cause to the loss of clear roles and responsibilities.

ii. You might also be tempted to skip some events or blend them to save time.
iii. Not providing the team with the scrum coaching they need.

The solution to all these challenges is to

i. implement the scrum completely.
ii. Make sure roles are well defined and properly fulfilled.

3. Experiencing a lack of stability within the team.
   i. Changes in team composition (people join and leave frequently)

Lack of team stability solution:

i. Have a quick onboarding process
ii. Use pair programming style (new member teams us with an experience member).
iii. Have shorter sprint to manage people that are joining and leaving.

Agile opportunities

- Being able to blend methods will be a super useful skill to have as you start your project management career. The reason agile is so popular is that we are in a VUCA (volatility, Uncertainty, Complexity, ambiguity) world.
- One agile framework is Dev Ops, which combines software development and IT operations. DevOps: an organizational and cultural movement that aims to increase software delivery velocity, improve service reliability, and build shared ownership among software stakeholders. DevOps aims to shorten the product lifecycle and deliver software products continuously and with very high-quality.
- DevOps emerged when software companies were faced with trying to figure out how to ensure their software products would run reliably for billions of people across the world, 24 hours a day, seven days a week. DevOps is about growing and managing teams and organizations that can build and evolve large-scale systems at a rapid pace.
- Business agility: incorporating agile principles into the wide sphere or management.
  - Scrums of scrums
  - Scaled agile framework
- Agile methodology reached out to many industries beyond software and technology.
- Agile vs DevOps and this.

- Five frameworks that scale the Agile approach to address the needs of large initiatives or solutions:

Scaled Agile Framework (SAFe)

- The most popular scaled framework is the **Scaled Agile Framework** or **SAFe**. SAFe is a Lean-Agile scaling framework that draws heavily on concepts from Kanban, Scrum, Extreme Programming (XP), DevOps, and Design Thinking methodologies. SAFe puts the goal of delivering value above all else—the first principle of SAFe is "take an economic view." The framework organizes all work and teams into "Agile Release Trains" based on value streams; for example, sales. The SAFe framework is mature and provides detailed guidance on all elements of using SAFe, but some elements are more critical than others. Be sure to check back to the Agile principles and values in the manifesto to be sure you are preserving agility.
- SAFe, like most Agile practices, is founded on a set of core values:
  - **Alignment**: Synchronize the planning and execution of SAFe activities at all levels of the organization.
  - **Built-in Quality**: Build quality into all stages of solution development.
  - **Transparency**: Make execution activities visible at all levels to build trust among teams and across the organization.
  - **Program Execution**: Focus on working systems and business outcomes.
  - **Leadership**: Model the values and principles of SAFe.
- Read this article to learn more about the core values of SAfe.

Scrum of Scrums

- **Scrum of Scrums is a technique for integrating the work of multiple, smaller Scrum teams working on the same project or solution. Coordination among teams is critical to ensuring the deliverables from each team can be integrated into one larger, cohesive deliverable.**
- Scrum of Scrums involves the following elements:
  - A group of at least 12 or more people divided into Scrum Teams of five to ten people each
  - Scrum of Scrums meetings, which are held once a week, twice a week, or daily. These meetings follow the same format as a Daily Scrum meeting but focus on the Scrum team. In these meetings, you'll discuss questions like: "What did the team do yesterday? What problems occurred, if any, that are negatively affecting your team? What does your team want to accomplish before we meet again? Is your team blocked from moving forward on any tasks?"
  - A **Scrum Master** or designated "ambassador" for each team that participates in the Scrum of Scrums meetings and a **Scrum of Scrums Master** who focuses on the overall Scrum process across multiple teams
  - Sprint Planning, Sprint Review, and Sprint Retrospective meetings
- Beyond these very basic guidelines, there is no official framework or methodology to implement Scrum of Scrums. Scrum of Scrums assumes that teams have a good working understanding of Scrum and are able to apply the scaling principles to how they work. Building on this knowledge, they design and iterate their own approach to coordinate multiple teams working on the same product.

Large-Scale Scrum (LeSS)

- **Large-Scale Scrum (LeSS) is a framework that aims to maximize the Scrum team's ability to deliver value and reduce waste in larger organizations. LeSS grew out of more than 600 experiments that expanded the practice of Scrum to larger groups.**
- LeSS includes ten principles for applying the value, elements, and overall purpose of Scrum across an organization. These principles were designed to create more customer- and collaboration-focused teams. LeSS teams prioritize learning, transparency, and customer needs. The ten LeSS principles are:
  - **Large-scale Scrum is Scrum:** Apply the values and principles of Scrum to a larger team.
  - **Empirical process control:** Inspect, adapt, and learn from experience to improve processes.
  - **Transparency:** Ensure clarity and accessibility across a project.
  - **More with less:** Create only necessary processes, roles, artifacts, and waste when scaling.
  - **Whole-product focus:** Think holistically about the product, making sure that all the parts serve the whole.
  - **Customer-centric:** Keep the customer's needs and values at the heart of your process.
  - **Continuous improvement towards perfection:** Improve the product—and your process—during every single Sprint.
  - **Systems thinking:** Think about the system as a whole; Don't get lost in the details.
  - **Lean thinking:** Seek continuous improvement, aim for perfection, and respect people.
  - **Queuing theory:** Embrace the Lean principles of "flow,' manage queue size," and "minimize multitasking" to keep delivering value.
- The LeSS toolkit provides two frameworks—one for up to about 50 people (called **Basic LeSS**) and one for 50–6000+ people (called **LeSS Huge**). More information on the LeSS frameworks can be found at less.works.

Disciplined Agile Delivery (DAD)

- **Disciplined Agile Delivery (DAD) is a hybrid approach that combines the strategies from various Agile frameworks, including Kanban, LeSS, Lean Development, Extreme Programming, Agile Modeling, and more. DAD guides people through the process-related decisions that frameworks like SAFe and Scrum of Scrums leave open. DAD helps you develop a scaled Agile strategy based on context and desired outcomes.**
- DAD is organized into four "layers":
  - **Foundations** discusses the principles, guidelines, Agile concepts, roles and team structure definitions, and Way of Working (WoW).
  - **Disciplined DevOps** ensures that solutions are delivered to customers effectively and safely, with data and security management always at the forefront.
  - **Value Streams** ensures that solutions are aligned with the organization's business strategy, connecting customers, sales, and portfolio management to the framework.
  - **Disciplined Agile Enterprise (DAE)** connects the industry marketplace with corporate governance and larger enterprise activities.
- Project managers wishing to implement DAD can read more about the framework in this article: Going Beyond Scrum.

The Spotify Model

- Another approach you may encounter is the "Spotify Model," which we discussed in a previous reading. It is important to note that Spotify's model is not a true Agile framework. There is no standard guide on how to implement it. The model began as a description of how Spotify overcame the challenges of scaling Agile. By focusing their efforts on culture, team autonomy, communication, accountability, and quality, they increased their agility over time. Spotify's approach has had a huge impact on workflows and team structures across the tech world. Some of the key components include:
  - **Squads:** Like Scrum teams, Squads are autonomous teams of 6–12 people working toward the same outcome. All Squads include a coach (similar to a Scrum Master) and a Product Owner.
  - **Tribes:** When multiple Squads work on the same feature area, they form a Tribe of 40–150 people. Each Tribe has a Tribe Lead who fosters collaboration and coordination.
  - **Chapters:** Squads may be autonomous, but specialists (e.g., JavaScript developers) should still align across an organization. Chapters establish best practices and, where necessary, set standards.
  - **Guilds:** Any group of people interested in a certain topic can form a Guild, where people with shared interests can come together as a community.
- While some organizations have had success with this model, be aware that it evolved from Spotify's already significant Agile experience. It is the product of extensive introspection and adaptation and draws heavily on the company's culture of trust, transparency, and autonomy. Therefore, the value of Spotify's approach to scaling is not in team names like Squads and Tribes but in how they developed practices that supported and served their organizational culture. To learn more about the Spotify Model, check out this video from Henrik Kniberg.

Best practices for scaling Agile

- No matter which framework you choose, it's important to keep a few basic principles in mind:
- Treat scaling models like SAFe, Scrum of Scrums, LeSS, etc., as general frameworks, not instruction manuals.
- Different situations require different solutions. It's okay to mix and match elements from multiple frameworks, as long as you apply the principles and values of the Agile Manifesto.
- Don't try to scale without prior Agile experience. Going straight from Waterfall to scaled Agile can be risky without a knowledgeable guide.
- Finally, and most importantly, don't scale if it isn't necessary. The larger your team, the more complex and difficult your project becomes.

- Types of agile project management positions:
  - Agile project manager
  - Scrum master
  - IT agile project manager
  - DevOps project manager

Course 6 – capstone Applying project management in the real world – Sept 8

- **objectives**
  - Create project documents based on an imagined scenario
  - Learn project details though conversations, emails, and other materials
  - Develop a portfolio of project management documents.
  - Key project management concepts studied in this course:
    - Analyzing materials
    - Applying negotiation techniques and influencing skills
    - Listening with empathy
    - Practicing stakeholder communication skills.

Module 1: project charters: purpose and components

- Strategic thinking involves analyzing documents and talking with stakeholders to inform decisions based on the information available to you.
- Common project negotiations:
  - Scope
  - Costs and benefits
  - Timeline
  - Success criteria
  - Roles and responsibilities
  - Resources
- The following strategies can help you get to know your stakeholders' interests, concerns, and communication preferences and enlist their help throughout your project's life cycle:
  - **Find out what stakeholders care about and why**. Ask your stakeholders: What are your most important priorities and goals? What role would you like to play in this project? How will this project support you and your most important priorities?
  - **Adjust your communication frequency and approach based on stakeholder roles and preferences.** Tell your stakeholders: Here's how I plan to keep you informed—does that work for you?
  - **Enlist the help of senior stakeholders when necessary.** Ask your stakeholders: Who else do you recommend I reach out to regarding this project?

    - **Once stakeholders have a vested interest, bring project problems to them**. Ask your stakeholders: How would you handle this situation? What solutions come to mind?
- Stakeholder analysis grid:
    - Higher power, higher interest: These people are your highest priority. You must manage them closely and make every effort to fully engage with them.
    - Higher power, lower interest: These people require a high level of effort to keep satisfied, as far as the success of the project is concerned, but do not want to be overburdened with project communications.
    - Lower power, higher interest: Show consideration to these people by keeping them adequately informed. Talk to them to ensure that no major issues are arising. These people can often be very helpful with the details of your project.
    - Lower power, lower interest: Monitor these people, but do not overload them with excessive communication. These people require minimal effort.
- Persuasion and negotiation are constructive tools you can use to
    - enhance communication,
    - clarify wants and needs
    - Achieve workable solutions for everyone involved
- View the people you are negotiating with as your colleagues and peers, not as opponents.
- When you experience conflict or disagreement among your stakeholders, it's in your best interest to address those challenges, build consensus among the stakeholder groups, and deescalate conflict. One way to do this is to find solutions that are mutually beneficial. **Mutual benefit** is when all parties involved gain some kind of benefit or advantage.
- The goal here is to reach a solution that maximizes benefits, minimizes losses, and is fair for all. You need to know a clear understanding of the project priorities.
- **Tips for navigating scope with stakeholders**
    - **Understand motivations.** Before your discussion, consider each stakeholder's motivations for wanting to adjust the project's scope. Some of those motivations are budgetary (such as wanting to reduce the project's costs), some are interpersonal (such as wanting more time to complete tasks), and some are related to personal career goals (such as maintaining their current position or striving for a promotion). Understanding your stakeholders' motivations can help you work together to find a compromise.
    - **Set the scene.** Start the discussion with a reflection on why you are meeting. Remind your stakeholders why you are engaged in this project, and assure them that you all share a common goal.
    - **Listen first.** Hear what your stakeholders have to say before you present your views. This will demonstrate your desire to understand the other party's perspective. Acknowledging their point of view may make it easier for them to accept your suggestions or solutions when their ideas or opinions differ from yours.
    - **Ask questions to define goals.** Be thorough and ask as many questions as you feel necessary to understand what the stakeholder wants. This might include getting them to define their customer or business goals. Strive for getting specific, measurable details from your stakeholders, so that later, you'll be able to determine whether you've successfully met their goals. Eliciting language that is measurable (rather than subjective or unclear) will help you define goals. An example of a specific, measurable goal could be: "We want to cut the amount of time it takes customers to sign up for our newsletter by at least 30 percent."
    - **Explain the "why" before the "what."** When attempting to persuade stakeholders—or anyone, for that matter—to see things your way, explain the reasons for your request *before* describing what you want. For instance, start by explaining the value that could be added to your company or project by defining scope in a certain way. If stakeholders understand where you're coming from first, they're more likely to grant your request when you ask for it.
    - **Do not oversell.** Sometimes it's best to state your case and give others some time to respond. After you have presented your reasons, position, and request, withdraw slightly to give your audience time to process what you have said. Think of your silence, in this situation, as a sign of respect for your stakeholders; it shows them you want to hear from them. And, if they are quiet for a while, it means that you have stimulated thought.
    - **Be creative.** Working to find alternative solutions can quickly turn a heavy negotiation into an inspiring team effort. To find real solutions to negotiation stalemates, think creatively about all the aspects of the project. You may find that there is more than one solution to differing opinions.
    - **Do not make it personal.** Always focus on what is good for the project. If personal considerations enter into the discussion, reframe the conversation by bringing up objective facts.
    - **Seek a win-win outcome.** Finally, consider what it will take for the other side to be satisfied. Then, try to identify a way to ensure you are satisfied as well. There will be times when one party may have to compromise more than the other, but a **mutually beneficial agreement** (an agreement that benefits all parties involved) should always be the goal. The next reading will cover strategies for achieving mutually beneficial agreements with stakeholders.
- **Best practices for reaching a mutually beneficial agreement**
    - **Share information.** Sometimes in negotiations, one or both parties might think they need to withhold information in order to not give too much away. This isn't very effective, though. It is best to strive for open lines of communication, where each party shares their worries and preferences. For instance, if your team's last supplier provided you with low quality products, you might voice this as a concern so your expectations around quality are clear.
    - **Ask questions and listen actively to responses.** Just like you shared your concerns and expectations, you can ask the other party questions to clarify what their concerns and expectations are. That way, both parties will have shared all the necessary information to achieve a mutually beneficial agreement.
    - **Propose multiple options whenever possible.** In negotiations, presenting only one option or solution can set you up for failure because the other person might think your first offer is the only one. If the other party rejects all of your proposals, ask them to communicate which one they like best, as that may point you in the direction of finding a solution that works for everyone.

Module 2: building out a project plan

- Learn to analyze project documentation to identify tasks for a new project.
- **Guiding Tips and Questions:**
    - Are there multiple tasks implied by a single sentence? For example, "Launch a reservation system" implies that the team selected, installed, tested, and *then* launched the reservation system.
    - Always ask yourself what decisions might need to be made before an action is taken and what testing might need to be done to verify the success of that action. These decisions and tests might also be considered tasks for the project plan.
- Domain knowledge: knowledge of a specific industry, topic, or activity. How do you identify tasks and monitor progress for a project or industry that you are not familiar with?
- Another key to success when working o a unfamiliar project is knowing where to find useful info that can help you increase your domain knowledge.
- You don't need to be an expert on your project, but becoming more familiar with different industries and types of projects is a valuable skill that demonstrates your versatility.
- One way to help build up your domain knowledge when you get started with project planning is through online research. Online research can help increase your knowledge of industry terms, techniques, processes, and more, all of which can be helpful as you embark on a new project.

- Tips for project research: search online for news coverage of similar projects at other companies:
  - Search online for news coverage of similar projects at other companies
  - Search online for research on topics related to your project.
  - Research similar projects in other industries
  - Review the list of tasks and research the specifics of executing that work.
- Discussion with the people working on the project from stakeholders to team members-can help you uncover tasks that you are still missing or clarify the smaller subtasks.
- Identify tasks through conversations with the project team:
  - Brainstorm as a group with team members who will likely work on those tasks.
  - Hold one-on-one conversations with team members about tasks the will likely be responsible for completing.
  - Leverage the expertise of your teammates to discover what you don't know and to fill in gaps in your list of tasks. Consult with other people in your organization who are experts on given tasks.
- Are there still areas where you need more information? If so, have a conversation with your key stakeholders to fill in any gaps. Stakeholders who have high or medium level interest or influence in the project are most likely to provide the information you need. To talk to stakeholders, prepare for the conversation:
  - Gather information ahead of time
  - Outline clear questions you need answers to.
  - Present your research and your current list of tasks.
- Conversation often contain more details and information that you need to create a thorough list of tasks.
- The right level of detail to include in your task list will vary from project to project and team to team.
- Discuss how to order your task list and share several techniques for identifying milestones.
- Determining task priority:
  - Basic order of operations/natural task sequence.
  - Dependencies and prerequisites.
  - Determining milestones:
    - Identify points in the project plan where you and your team can evaluate the work completed so far.
    - Identify important tasks that your stakeholders have a particular interest in.
    - Identify tasks that carry a high risk of signal the completion of a phase or major task.

Making accurate time estimation

- Time estimation: a prediction of the total amount of time required to complete a task. Asking the right questions can help your experts get to the most accurate time estimates possible.
- Strategies for getting accurate estimates:
  - Check their understanding of the task.
  - Ask for the estimates of the sub-steps and make note of them.
  - Discuss the assumptions the expert might be making when they give you an estimate.
  - Ask the task expert to consider how likely it might be that the assumptions might not work out and how they might impact their estimate.
  - Compare the expert's estimates against the actual time spent on similar tasks in previous work.
- Effort vs total duration
  - An effort estimate only takes into account the actual time it takes to complete a task.
  - A total duration estimate accounts for the effort estimation and any other factors, like getting approvals, prep work, and testing.
- Another technique for accurate time estimating: Three-point estimating. Used to help determine the most realistic time estimate for a task. It uses optimistic and pessimistic calculations, meaning calculations based on the best-case and the worst-case scenarios. The side benefit is that it include potential risk.
- Each task receives three time estimates:
  - Optimistic: assumes the best case scenario that issues will not occur (you hope the task will take this much)
  - Most likely: assumes some issues might occur and is based on how long the task usually takes under normal circumstances.
  - Pessimistic: assumes the worst-case scenario – that issues will definitely occur.
- Each estimate indicates the amount of time a task will take under that category.
- When conducting your own research or having conversations with task experts, be mindful of the three points so that you can determine the outcomes of optimistic, most likely, and pessimistic timing.
- If someone quotes you a time estimate, don't just take their word for it without understanding the context they're estimating from. Think about it this way—if someone is being optimistic, they might estimate that a task will only take them two days to complete. If you go with that estimate and it ends up taking a whole week, your schedule is off. But if someone is being pessimistic and quotes one month and the task only takes a week, then you've got extra time in your schedule that could have gone toward other tasks or led to an earlier product release.
- Determining a final estimate:
  - Examine best- and worst-case scenario timing
  - Compare with the most likely scenario
  - Build in a buffer that accounts for risks that are likely, but still keeps the project progressing at an efficient rate.
- To calculate the actual time: two popular formulas: the Triangular Distribution and the Beta (PERT) Distribution. For each formula: E is Estimate (the final estimate you'll assign to the task), o = optimistic estimate, p = pessimistic estimate, and m = most likely estimate.
  - Triangular: $E = (o+m+p)/3$
  - PERT: $E = (o+4m+p)/6$
- How to determine the confidence level rating for each of your estimates. **Confident level rating**: Indicates how confident you are in an estimate's accuracy.
- Ways to determine a confidence rating:
  - Use a three-point technique.
  - Poll your team
    - Get a percentage for how confident they are
    - Define categories for the team (we've done this many time, a few time, once, or never).
- There are a few techniques you can use to try and reach an estimate that works for both of you.
  - Saying no without saying no.
    - Ask open-ended questions like
      - How would you like me to proceed?
      - How can we solve this problem?
  - Focus on interests, not positions
    - Try to identify the other person's needs, wants, and motivations around completing a certain task.
  - Present mutually beneficial options
  - Insist on using objective criteria

        - Base criteria on neutral information like market value, research findings, previously-documented experience, and laws and regulations.
        - Agree in advance about which objective criteria to consult and then to use that information to determine your estimates.
- Time estimation: negotiating with empathy. **Empathy**: the ability to understand and feel what others are feeling. Discuss how you can bring empathy to conversations about task estimates and timelines.
    - Asking about how long a task will take, can make some people insecure. People may feel, we are micromanaging them. **Micromanaging:** when a manager too closely observes, controls, or continuously reminds the people they are managing of the work they've been assigned.
- Ways to bring empathy to your conversation:
    - Listen with curiosity
    - Periodically repeat what you think you heard.
    - Connect with their experience
    - Recognize judgments
    - Recognizing buffering (vacation, sickness, ….)
    - Avoid distractions

Module 3: maintaining quality

- **Objectives**:
    - Practice defining quality standards for your project
    - Evaluate how successfully the project's standards are being met
    - Present your findings to the stake holders
    - Create a retrospective document
    - ==
    - Understand how to establish a list of quality standards
    - Practice writing evaluation questions and survey questions
    - Learn how to improve the process and create a retrospective document.

Developing a management plan

- A crucial part of project planning and executing includes implementing a quality management plan and holding yourself to it throughout the project.
- As a project manager, you are responsible for the planning and execution of the project, as well as for the successful completion of the project.
- Quality management concept:
    - Quality planning: refers to the process that the project manager or the team establishes and follows for identifying and determining exactly which standards of quality are relevant to the project as a whole and how to satisfy them. Planning for quality matters for the health of project.
        - Quality management plan:
            - Quality standards: requirements and specifications that your product or service must meet in order to be considered successful by your organization and the customer.
            - Evaluation questions,
            - Feedback surveys,
        - Benefits of creating and maintaining quality management in a project:
            - Delivering a quality product
            - Decreasing overhead (overhead== cost), this reduces the amount of errors that would cost the organization money to fix.
            - Increasing collaboration and ongoing reviews
        - Quality management processes ensure that the team is always learning and providing feedback, which in turn ensures that the project is on track to achieve its intended outcome.
        - Documents all the information needed to effectively manage project quality throughout the project life cycle.
        - Defines the policies, processes, and criteria for project quality, as well as roles and responsibilities for carrying out the quality management plan.
    - Quality standards, requirements , specifications, or guidelines that could be used to ensure the materials, products, processes, and services are fit for achieving a desired outcome.
        - There are lots of resources that can help you determine the standards for your project, and standards will look different depending on the type of project. Resource to consult:
            - Project documents
                - Business case
                - Project charter
            - Conversations with experts and stakeholders
            - Industry research
        - Common quality standard categories
            - Functionality
            - Desing
            - Safety
            - Ease of use
            - Productivity
            - Effectiveness
            - Customer satisfaction
        - It is important that your standards are objective and measurable so you can clearly identify that the standard has been met.
    - quality assurance, or QA, which is a review process that evaluates whether your project is moving towards delivering a high-quality service or product;
    - quality control, often known as QC, refers to the techniques that are used to ensure quality standards are maintained when a problem is identified.
- Quality: making sure that you deliver what you say you will, and that you do it as efficiently as you can.
- Getting a project done on time and under budget doesn't necessarily mean you've met your goals; you need to be sure you've delivered a project that meets your stakeholders' needs. That's why project quality is tracked throughout the life cycle of the project.

Evaluating quality standards /quality assurance.

- Discuss the importance of evaluation as it relates to the project's quality management plan
- Evaluation: involves observing, measuring, and then comparing your findings to a set of agreed-upon criteria. Evaluation is a form of research designed to promote learning and inform decisions.
- In the same way that quality management plans may look different for each project, quality assurance could be implemented in a variety of ways:
    - Beta testing

    - Internal checklists
    - Feedback surveys
- Reasons to use evaluation
    - To improve
    - To judge
    - To learn
- Evaluation process
    - Determine the reasons for evaluating
    - Write out evaluation questions: a key questions about the outcomes, impact, and/or effectiveness of your project or program. Twom main categories of evaluation questions:
        - How to improve. Questions that help you improve:
            - How can we improve?
            - What is working and what's not working.
            - Which goals are being met?
            - Who is benefiting?
            - What are the most common participant reactions?
        - Help you measure and compare. Questions for measuring and comparing:
            - What were the results?
            - Were there unintended outcomes?
            - What ere the costs and benefits?
            - Are there any lessons to be learned?
            - Should we continue?
        - Effective evaluating question:
            - Address stakeholder or user values, interests, and concerns
            - Relate to the purpose of the project and evaluation
            - Are worth answering and are important for the project and beyond
            - Are practical and feasible to answer with available resources.
- Evaluation indicators reveal the specific type of data that needs to be collected to help you answer your evaluation questions. Indicators say what you want to measure or evaluate. Evaluation indicators take your evaluation question and determine the specific type of response you are aiming for.
- The word indicator means point out or show. The show the way to answer evaluation question.
- Being able to develop a survey and write survey questions is important because it demonstrates your ability to understand the goals of your project and assess how your stakeholders and users value the project.
- Surveys are tools you can use to evaluate and measure the quality of a project process, goal, or deliverable.
- Surveys can help you understand what is working and what is not working.
- Surveys assess the criteria you want to evaluate.
- Surveys provide data that will point out whether you have met your quality standards.
- Survey development process:
    - Develop evaluation questions
    - Define your evaluation indicators
    - Determine what type of survey to design and questions to ask.
- Survey question is different from evaluation question. An evaluation question is a key question about the outcomes, impact, and/or effectiveness of your project or program. A survey question is designed to collect data which can help you answer your evaluation questions.
- There are two types of survey questions:
    - Open-ended: require more than one-word answers such as yes or no.
    - Closed-ended: can be answered with a single response. Three types of closed-ended questions:
        - Yes/no or true/false
        - Multiple choice
        - Scaled (rate on a scale)
- Tips for creating good survey questions
    - Make sure your questions ask what you mean to ask
    - Each question should be specific and address only one measurable aspect
    - Be careful not to make assumptions about your respondents
    - Make sure your questions don't provide too much detail or information (this may create bias).

Presenting data

- To present the data you collected in the survey:
    - Consider your audience
        - What's most meaningful to them?
        - How much time do they have?
    - Depending on the teams, you may need to present the same data in different ways.
        - Your team benefits from a detailed report
        - Sinor stakeholders and execs do not need, want, or have the time for detailed analysis.
    - Create a detailed evaluation report
        - Then summarize the information into the most appropriate format for a given audience.
    - Common reporting styles
        - Summary sheet
        - Slide-based presentation
- Presenting evaluation findings should not just be a raw data report, your presentation needs to reflect what the data means and explain how it informs a response to the evaluation questions. In order to do this, you need to filter and analyze the data. This is probably the most important part because this is where you make sense of the data for yourself.
- By filtering and analyzing, you become familiar with the results, the respondents, and what those results mean in regards to project quality.
- A good way to start analyzing data to present is to look for trends, patterns, and anomalies. Another tip is to share this process with some of your team members. Taking turns sharing what you think the data means allows you to check your understanding and uncover additional information through your varied perspectives.
- After all these, shape the story of your findings by tying it all together into one cohesive narrative. A great way to present this is storytelling. Story telling is the process of turning facts into narrative to communicate something to your audience. Identify any major issues the data reveals, and summarize the rest.
- What to include in your presentation:

    - **Introduction**: overview of the project's goals and desired outcomes. Summary of findings, lessons learned, and recommendations moving forward.
    - **What is being evaluated and why**: purpose of evaluation: measure how well your project is meeting the established quality standards. This shows how well the project is meeting quality standards and informs them of the project's success. To do this:
        - State the goal, milestone, or deliverable that is being evaluated and the quality standards that were defined for that aspect of the project.
        - include the evaluation questions and indicators that were used to evaluate each quality standard.
        - **Pro tip:** Remember, your stakeholders have limited time. When preparing your presentation, only select the most important standards and questions.
    - **Evaluate findings:** Give each standard its own section within this portion of the presentation, and summarize what the findings mean for each standard. Make a clear judgment about the findings: What did you learn? What can you take away from the data? Tell the story of what the data means for the future of the project and for the stakeholders.
        - **Pro tip:** Visualize the data with graphs or charts to quickly convey the message of the findings.
    - **Conclusion with recommendations:** In your conclusion, state your findings again and propose a couple of recommendations for how to apply the findings to the next phase of the project. You can also outline how these findings may be used in future projects.
- **Additional tips**
    - **Tailor communications to stakeholders**: When it comes to communicating important milestones to stakeholders, consider whom you are presenting to. Tailor your presentation to your audience in a way that they will understand and enjoy.
    - **Start with an interesting hook**: Begin your presentation with an ice breaker, joke, or an interesting visual aid to get your stakeholders' attention right away.
    - **Use visuals throughout your presentation**: The use of visuals creates interest and keeps the audience engaged in your presentation.

Facilitating retrospectives

- Review retrospectives and their value to a project team. Retrospectives are an example of quality control, it helps teams adjust and improve processes as needed.

Module 4: Effective stakeholder communication

Objectives:

- Demonstrate your ability to communicate with stakeholders
- Demonstrate your ability to wrap up a project

Communicating with stakeholders:

- Discuss how to communicate project problems.
- Learn how to synthesize a project problem into a one-sentence summary for a senior stakeholder. Every project has its problems, and communicating those problems is a part of your job as a project manager. Occasionally, you will need to escalate problems and propose solutions to a senior stakeholder for their input and guidance on next steps.
- Project managers synthesize information from multiple sources into a coherent summary that clearly communicates the issue. You need to synthesize the problem from different sources. Synthesizing requires gathering information from multiple sources and using those points to help form your own analysis. The question you ask is: "how can I communicate a decision in a way that makes it easy for them to decide.
- Objectives and key results are a tool for organization-wide goal setting. OKR combine a goal and a metric to determine a measurable outcome.
- OKRs can be a kind of shared language for an organization. OKRs can be really helpful to reference when communicating with stakeholders about project problems.
- Review vest practices for writing emails to get decisions you need from stakeholders. Few best practices:
    - Think about what is most important to your stakeholder
    - Identify how a problem will impact the organization as a whole and ensure you clearly communicate the impact withing the first two sentences of your email.
    - Write a clear subject line
    - Include language in your subject that indicates what you would like your stakeholder to do upon reading your email. {Urgent, timely, decision needed, please review}
    - Keep the body of the email brief and to the point.
    - Consider including hyperlinks or attachments with that information in your email.
    - Proofread for misspellings, grammatical errors, and inaccurate hyperlinks.
- TLDR: too long didn't read
- Discuss closing out the project and showcasing its impact.
- Good project hygiene: compiling all links and documentations into one place for historical purposes.
- A closeout report: confirms the project is done.
- Summarizes deliverables, success metrics, feedback, lessons learned, and next steps.
- Serves as a refence document for the organization
- An effective closeout report:
    - Helps ensure that everyone is satisfied with the work that was done.
    - Finalizes the efforts of the team and lets people move on to new projects and tasks.
    - Increases the impact of the team's work through communication with other people who may not have been as involved in the project.
- Impact report: the purpose of creating an impact report is to show others the value that is been added to your project. Unlike a detailed closeout report that's designed for future project managers or other readers interested in the project details, an impact report is typically created for senior stakeholders or project sponsors who weren't involved in the day-to-day details of the project.
- Reporting your impact can help you to:
    - Analyze results to adapt and improve services
    - Motivate staff and senior stakeholders through celebrating achievements.
    - Build trust and credibility with supports, sponsors, funders, and anyone benefiting from the project.
    - Share lessons with similar organizations.
- Elements of an impact report:
    - Executive summary:
        - A few sentences to a paragraph that describes the project's purpose and outcome.
        - Provides an overview of the main points of a larger report. It is written to share with stakeholders who may not have time to review the entire report. This is like a highlight for your project.
        - Your executive summary should aim to answer questions like:
            - How effectively was the project delivered?
            - What did we learn from it?
        - Topics to include in the executive summary:
            - Project vision

- Key accomplishments
- Lessons learned