# IT PROJECT MANAGEMENT

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# Software Applications Requirements Documentation

- User Interface Requirements Document (UIRD)
  - describes the look and feel of the User Interface (UI) of the system
  - It often defines:
    - How the content is presented to the user
    - User navigation
    - Colour codes to be used
    - Hints, tips and suggestions to be displayed
    - ‘Save data’ options
    - Shortcut keys
  - more often than not includes mock-up screenshots and wireframes to give readers an idea of what the finished system will look like.
  - Prepared  by the user interface design team.

# Software Applications Requirements Documentation

- **Technical Requirements Document (TRD)**
  - contains the software, hardware and platform requirements of the product.
  - includes requirements like the programming language the system should be developed in and the processor speed required to run the system.
  - might also consider the limitations of the system and its performance.
  - A good TRD will include the following key items:
    - An executive summary of the project and its background.
    - Assumptions, risks, and factors that may affect the project
    - Functional and non-functional requirements
    - References or a list of supporting documents
  - It is written by the engineering team.

# Software Applications Requirements Documentation

- Quality Requirements Document
  - outlines the expectations of the customer for the quality of the final product
  - might revolve around reliability, consistency, availability, usability, maintainability and customer experience.
  - This document can be written by the project manager or business analyst

- Customer Requirements Document
  - sometimes referred to as Client Requirement Document
  - it can refer to a PRD but for a specific customer or client.

# Software Applications Requirements Documentation

- Software Requirements Document or Software Requirements Specification (SRS)
  - outlines the features and the intended behaviour of a system.
  - describes the business's understanding of the end user's needs while laying out functional and non-functional requirements.
  - related to the FRD and PRD but written with a specific IT project in mind.
  - contents may include:
    - A product overview
    - A summary of the current system
    - The proposed methods and procedures
    - Design considerations
    - Security considerations
  - An SRS is normally compiled by the lead engineer of the project.

# Project Scope Management

- Define Scope
  - The process of developing a detailed description of the project and product.
  - Describes the product, service, or result boundaries and acceptance criteria.
  - Tools and Techniques
    - Expert judgement
    - Data Analysis
      - Alternative analysis
    - Decision making
      - Multicriteria decision analysis
    - Interpersonal and team skills
      - Facilitation
    - Product analysis
  - Documents produced
    - Project scope statement
    - Project documents update

# Project Scope Management

- Define Scope
  - Selects the final project requirements identified under the Collect Requirements
  - Describe project scope with more specificity as more information is known
  - Existing risks, assumptions, and constraints are analysed for completeness and added or updated as necessary.

- Create WBS
  - The process of subdividing project deliverables and project work into smaller, more manageable components.
  - Provides a framework of what has to be delivered.
  - Tools & Techniques
    - Expert Judgment
    - Decomposition
  - Documents
    - Scope Baseline
      - The approved version of a scope statement, WBS and associated WBS dictionary.
      - Can be changed only through formal change control procedures.
      - A component of the Project Management Plan
    - Project Documents Updates

# Project Scope Management

- Validate Scope
  - Process of formalizing acceptance of completed project deliverables
  - Brings objectivity to the acceptance process
  - increases the probability of final product, service or result acceptance by validating each deliverable.
  - Tools & Techniques
    - Inspection
    - Decision making
      - Voting
  - Outputs
    - Accepted deliverables
    - Work performance information
    - Change requests
    - Project documents updates
      - Lessons learned register
      - Requirements documentation
      - Requirements traceability matrix

# Project Scope Management

- Control Scope
  - Process of monitoring the status of the project and product scope and managing changes to the scope baseline.
  - The scope baseline is maintained throughout the project
  - Tools & Techniques
    - Data Analysis
      - Variance analysis
      - Trend Analysis
    - Documents
      - Work performance information
      - Change requests
      - PMP updates
      - Project documents updates

# Process Groups - Knowledge Areas Mapping

| Knowledge Areas | Project Management Process Groups | | | | |
|---|---|---|---|---|---|
| | Initiating Process Group | Planning Process Group | Executing Process Group | Monitoring and Controlling Process Group | Closing Process Group |
| 4. Project Integration Management | 4.1 Develop Project Charter | 4.2 Develop Project Management Plan | 4.3 Direct and Manage Project Work<br>4.4 Manage Project Knowledge | 4.5 Monitor and Control Project Work<br>4.6 Perform Integrated Change Control | 4.7 Close Project or Phase |
| 5. Project Scope Management | | 5.1 Plan Scope Management<br>5.2 Collect Requirements<br>5.3 Define Scope<br>5.4 Create WBS | | 5.5 Validate Scope<br>5.6 Control Scope | |
| 6. Project Schedule Management | | 6.1 Plan Schedule Management<br>6.2 Define Activities<br>6.3 Sequence Activities<br>6.4 Estimate Activity Durations<br>6.5 Develop Schedule | | 6.6 Control Schedule | |
| 7. Project Cost Management | | 7.1 Plan Cost Management<br>7.2 Estimate Costs<br>7.3 Determine Budget | | 7.4 Control Costs | |
| 8. Project Quality Management | | 8.1 Plan Quality Management | 8.2 Manage Quality | 8.3 Control Quality | |
| 9. Project Resource Management | | 9.1 Plan Resource Management<br>9.2 Estimate Activity Resources | 9.3 Acquire Resources<br>9.4 Develop Team<br>9.5 Manage Team | 9.6 Control Resources | |
| 10. Project Communications Management | | 10.1 Plan Communications Management | 10.2 Manage Communications | 10.3 Monitor Communications | |
| 11. Project Risk Management | | 11.1 Plan Risk Management<br>11.2 Identify Risks<br>11.3 Perform Qualitative Risk Analysis<br>11.4 Perform Quantitative Risk Analysis<br>11.5 Plan Risk Responses | 11.6 Implement Risk Responses | 11.7 Monitor Risks | |
| 12. Project Procurement Management | | 12.1 Plan Procurement Management | 12.2 Conduct Procurements | 12.3 Control Procurements | |
| 13. Project Stakeholder Management | 13.1 Identify Stakeholders | 13.2 Plan Stakeholder Engagement | 13.3 Manage Stakeholder Engagement | 13.4 Monitor Stakeholder Engagement | |

# Project Schedule Management

- Includes the processes required to manage the timely completion of the project.
- Processes
  - Plan schedule Management
    - The process of establishing the policies, procedures and documentation for planning, developing, managing, executing and controlling the project schedule.
  - Define Activities
    - The process of identifying and documenting the specific actions to be performed to produce the project deliverables.
  - Sequence Activities
    - The process of identifying and documenting relationships among the project activities.
  - Estimate Activity Durations
    - The process of estimating the number of work periods needed to complete individual activities with the estimated resources.

# Project Schedule Management

- Processes
  - Develop Schedule
    - The process of analysing activity sequences, durations, resource requirements and schedule constraints to create the project schedule model for project execution and monitoring and controlling.
  - Control Schedule
    - The process of monitoring the status of the project to update the project schedule and manage changes to the schedule baseline.
  - Schedule Baseline
    - Approved version of a schedule model that can be change only through formal change control procedures
    - Used as a basis for comparison to actual results.
    - Accepted and approved by appropriate stakeholders with baseline start and finish dates.
    - During monitoring and controlling, the approved baseline dates are compared to the actual start and finish dates to determine variances.
    - Component of project management plan.
- Project scheduling
  - Provides a detailed plan representing how and when the project will deliver the product, services and results defined in the project scope

# Project Schedule Management

- Project scheduling
  - Serves as a tool for communication, managing stakeholders expectations and as basis for performance reporting.
  - The team selects a scheduling method and tool to create a project schedule using
    - The project-specific data such as:
      - Activities
      - Planned dates
      - Durations
      - Resources
      - Dependencies
      - Constraints
    - The sequence of scheduling:
      - Defining activities
      - Sequencing activities
      - Estimating activity durations
      - Developing the schedule

# Project Schedule Management

- Trends & Emerging Practices
  - Rolling wave planning
    - a technique that enables you to plan for a project as it unfolds.
    - requires planning iteratively.
    - plan until you have visibility, implement, and then re-plan
    - uses progressive elaboration
      - the act of elaborating the work packages in greater detail as the project unfolds.
      - particularly useful in projects with high uncertainty
  - Iterative scheduling with a backlog
    - A form of rolling wave planning based on the adaptive life cycles.
    - Requirements are documented in user stories
    - These are prioritized and refined just prior to development
    - Product features uses time-boxed periods of work.
      - Timeboxing is allotting a fixed, maximum unit of time for an activity
      - The goal  is to define and limit the amount of time dedicated to an activity.
      - as a tool for concretely defining open-ended or ambiguous tasks.
    - Used to deliver incremental value to customer
    - Multiple teams are able to concurrently develop a large number of features with few interconnected dependencies.

# Project Schedule Management

- Iterative scheduling with a backlog
  - It welcomes changes throughout the development life cycle.
- On-demand scheduling
  - Based on the concept of lean manufacturing where the products are produced only when there is a demand.
  - Work is pulled from a queue when resources are available.
  - Used to balance the demand against the workers' output.
- Tailoring Considerations
  - Life cycle approach
  - Resource availability
  - Project dimensions
  - Technology support

# Project Schedule Management

- Plan Schedule Management
  - The process of establishing the policies, procedures and documentation for planning, developing, managing, executing and controlling the project schedule.
  - Provides guidance and direction on how the project schedule will be managed
  - Performed once or at predefined points.
  - Tools & Techniques
    - Expert judgment
    - Data analysis
      - Alternatives analysis
    - Meetings
  - Documents
    - Schedule Management Plan
      - Component of the project management plan
      - Establishes the criteria and activities for developing, monitoring and controlling the schedule.
      - May be:
        - Formal or informal
        - Highly detailed or broadly framed based on the project needs.
      - Includes appropriate thresholds

# Project Schedule Management

- Define Activities
  - The process of identifying and documenting the specific actions to be performed to produce the project deliverables.
  - Decomposes work packages into schedule activities providing a basis for estimating, scheduling, executing, monitoring and controlling project work.
  - Performed throughout the project.
  - Tools & Techniques
    - Expert judgment
    - Decomposition
    - Rolling wave planning
    - Meetings
  - Documents
    - Activity list
    - Activity attributes
    - Milestone list
    - Change requests
    - Project Management Plan updates
      - Schedule baseline
      - Cost baseline