Module 3

Agile Project Estimation, Benefits, User Story Planning, Planning Poker

Agile Philosophy

- The Agile philosophy is a collection of values and principles designed to help manage work more efficiently. In the broad sense of Agile, estimation refers to expert opinions about when a piece of work can be completed based on its complexity. The Agile term “Agile estimation” gained popularity in software development, and it is used to quantify the duration of a given development work item.
- Let's discuss how estimation is managed in an Agile environment, the good and bad sides of estimation, and some of the widely used techniques.

The Agile Approach to Estimation

- The Agile way to work management is focused on customer satisfaction, adaptability, and frequent value delivery. To comply with the 12 principles of Agile project management, teams reach out to various methodologies and frameworks to help them streamline work processes, improve their flexibility and deliver quality value faster. A cornerstone of this mission is the ability to determine how long work would take before value can be delivered to the customer.

Why Run Agile Estimations?

- Agile estimates are essential for
- Making teams accountable for deliverables,
- Inducing discipline across the Agile team,
- Predicting the approximate time, it will take to finish a project,
- Enabling better sprint management,
- Improving team productivity.

Why do Teams Estimate in Agile?

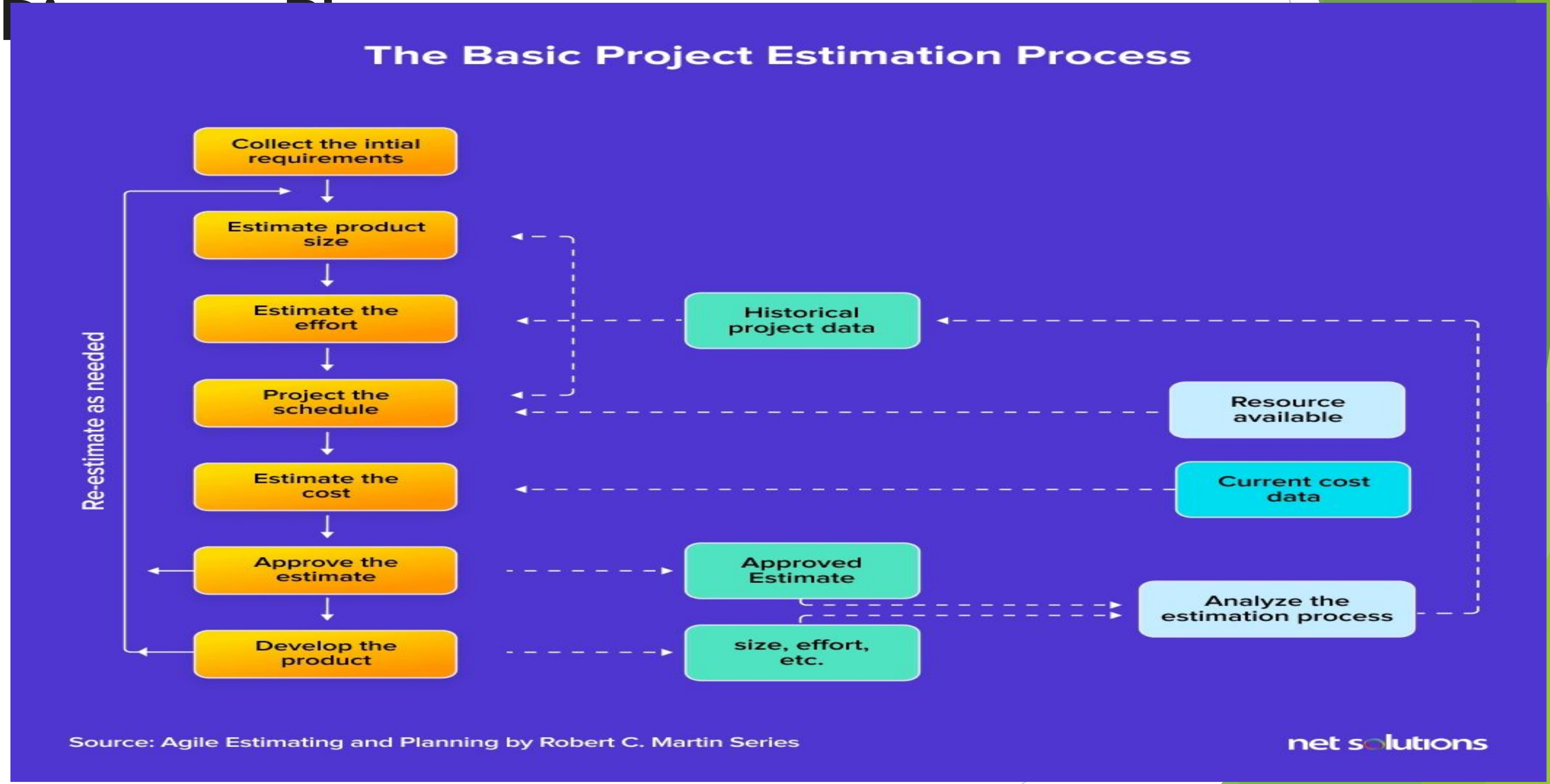
- Overestimating and underestimating are both typical for Agile software development companies. It leads to varying development and launch times. Considering Agile estimation in the initial stages can assist in accurate user story estimations. It helps the team stick to the deliverables, and you don’t deflect.

Who Is Involved in the Agile Estimation Process?

- Estimating is a team activity. Every team member should be involved in the work estimation process. Let's not forget that Agile proclaims collaboration, communication, and feedback on all levels as the path for delivering value with increased quality and at a fast pace.

- Development team members (programmers, designers, quality assurance engineers, or other types of knowledge work specialists) should all be involved in the process of estimating the duration of work items because that ensures that all expert opinions are taken into account. Furthermore, this promotes transparency and enables collaborative discussion within the team about how to get work done more efficiently.
- Team leaders, product owners, Scrum masters play an important role in the estimation of work. They are the moderators of the Agile ceremonies dedicated to the process of prioritizing work. It’s their role to detect any unknowns, questions, or discrepancies and provoke further discussion.

Stages of Agile Estimation: The Short



The Basic Project Estimation Process

Collect the intial requirements

Estimate product size

Estimate the effort

Project the schedule

Estimate the cost

Approve the estimate

Develop the product

Re-estimate as needed

Historical project data

Resource available

Current cost data

Approved Estimate

size, effort, etc.

Analyze the estimation process

Source: Agile Estimating and Planning by Robert C. Martin Series

net solutions

What Are the Benefits of Agile Estimation?

- Estimates can help break down, plan and prioritize work and ultimately improve the efficiency of managing Agile projects. Proper work sizing can be beneficial to project management in various ways.
- **Improved coordination**. Arriving at a mutual understanding about the actual size of the work requires everyone's input. As such, estimation practices improve the team's communication and coordination.
- **Decision-making enhancements**. Teams can improve their ability to prioritize work in the backlog according to the assigned estimates and improve their Agile projects planning capabilities.
- **Better risk management**. Proper work sizing lays the foundations for better risk management and improves the chances of delivery with the required quality and within the agreed time and budget.

Pitfalls of Estimating Work

- The Agile philosophy is rooted in the ability to adapt and spread agility across organizational levels. Weighing the work is a critical step in that mission which, if not addressed adequately, can easily turn into a pain point in Agile project management.

- **Estimates do not account for uncertainties**. Regardless of the chosen estimation technique or the measurement unit, estimates are criticized because of their inability to account for risks. After all, knowledge work doesn't deal with homogeneous work types, and the complexity of the incoming tasks can be of widely varying levels.

- **Estimates cannot be final**. The biggest caveat of estimates is the expectation that once work is weighed, it's final. Addressing emerging conditions should always be an option.

- **Misuse of estimations**. It's not uncommon for teams to get carried away in treating the agreed-upon estimates as commitments for assigning specific timelines or judging team members – a counter-productive and demotivating practice.

The Difference Between Estimation and Forecasting

- Although estimation and forecasting are processes that are often used together, they aren't the same.
- Estimation looks for links between data and operations, finding the reasons behind the numbers and using this information to plan for the future. Forecasting is driven by numbers rather than stories.
- It issues predictions based on past records without necessarily delving into why certain patterns have occurred.
- An estimation process for a weather dependent business such as a food concession could start with identifying the effects that sun, clouds and rain have on daily sales, and then researching the average number of sunny, cloudy and rainy days per year.
- A forecasting model could simply look at average sales during a particular month or season over several previous years. It would then factor in developments such as new products being introduced. This information would provide the basis for forecasting sales during an upcoming period.

Agile Estimation in Detail

- Agile estimation helps for proper planning, management and estimation of the total efforts that will be used for implementing, testing and delivering the desired product to the customers in terms of time within the specified deadlines.
- A well-prepared preliminary estimate is essential. The more accurately the client answers all the questions, the closer to reality the initial assessment will be. Client involvement and full cooperation is especially important at this point.

- It is employed in projects through various techniques such as Planning Poker, Bucket System, and Affinity Mapping. A number of estimation templates at different levels also serve this purpose: Agile Project Plan Template, Release Plan Template, Sprint Plan Template, RoadMap Template, and User Story Template.

Levels of Agile Estimation

- There are three main levels of Agile estimation.
- **Project or Proposal level** is the one which uses Quick Function Point Analysis during the initial phases of the project development. Function Point Analysis is a standardized method used commonly as an estimation technique in software development. It’s a measure that helps to assess business requirements that the software is meant to involve.

- **Release Level** includes assigning story points to the user stories that can help in defining the order of the user stories by priority. It can also help to decide which stories we should take first and which later.

  User stories are steps that a user takes while using an app or software. For example: 1) launching an app, 2) registering, 3) navigating through the application menu tabs, 4) uploading a document / adding an item to cart, etc. These stories vary depending on the goals the application has to accomplish.

- **Sprint Level** is the one in which we divide user stories into tasks and assign estimated hours to the tasks, based on their complexity. At this level, we also define the person who is responsible for the task along with the status of the tasks.
- These levels are important in the budget and timeline calculation of the Agile Project. It is crucial to make sure that the project does not go beyond the expected budget due to the pre- and post-iteration tasks or any other reasons.

6 Tips to Improve Agile Estimation

Having good estimates helps to mitigate time and cost risks and better enables us to deliver successful projects.

- **Estimate smaller stories first, before tackling epics.** If you think about it, it is always easier to estimate smaller, rather than larger tasks. To begin with, focus on some of the smaller stories first. It will get the team accustomed to the estimating process, get some stories with good estimates, and improve your chance of meeting them.
- **Break epics down, even if only into smaller epics.** Given that smaller is better, rather than tackle what might be a large epic, consider breaking it down. While stories are ideal, some epics can be broken down into multiple epics, making them easier to estimate accurately. Smaller is also better for sprint planning, so there is an additional benefit.
- **Update estimates during the course of the project.** While traditional projects are estimated 2-3 times, it is better to think of estimation of iterative projects as ongoing. The first estimates are produced with the initial product backlog. As the sprints progress and the backlog is reviewed at the start of each sprint, be sure to revisit estimates. Once several sprints have taken place, the team will know more about the work. They may be better able to estimate the larger epics and break them down.

- **Like all estimating, this is a team sport.** Some very large projects have separate estimating teams that do not perform the work. With the agile environment where teams are normally no more than 10 members who are normally colocated, be sure to involve the team to get the best estimates. And as a corollary, you may want to note who seemed the most confident or outspoken in the process. This may be the best person to do the work, since they will be more committed to their estimate.
- **Like all estimating, look at historical or industry data.** As with any other project, historical or industry data can play a role. For example, just because project methods change, decades of study that show the average computer programmer produces 10 lines of debugged code per day have not been invalidated. And suppose you have not been saving past project data such as any estimating meeting notes and product backlogs with estimates. In that case, this is a great project to start a new practice!
- **Be sure to involve subject matter experts.** As with any project estimates, subject matter expertise is important, and perhaps even more so in the agile environment. Hopefully some of this expertise will be on the team, but that is often not the case with flexible project which can change direction at any sprint. Bring in subject matter experts to consult and work with the team, especially as part of the estimating process, to be sure to get the best estimates.

Popular methods of Agile Estimation:

Planning Poker

- In Planning Poker, each team member will declare his or her estimate for a story. If everyone estimates the same or similar number, then move to the next story. But if each team member has different estimates, a discussion is done to clarify the scope, before more silent estimation occurs. The team members for estimating user stories include Product Owner, Scrum Master, Developers, Testers and Stakeholders.
- https://www.atlassian.com/blog/platform/a-brief-overview-of-planning-poker

What is User Story Mapping?

- Requirements always change as teams and customers learn more about the system along with the progress of the project. It's not exactly realistic to expect project teams to plan for a static requirements list and then deliver functional software months later. User Story Mapping is a better and more Agile way to address rigid changes of the end-user requirements.
- A user story map helps you arrange user stories into a useful model for understanding the functionality of a system, identifying holes and omissions in your backlog, and effectively plan holistic releases that deliver value to users and business with through releases.

Why User Story Mapping?

- Story Maps were first introduced by Jeff Patton in 2005. The main idea behind Story Maps is that single-list product backlogs are a terrible way to organize and prioritize the work that needs to be done. A richer structure is necessary. A user story map is a powerful tool that enable an agile team to groom their product backlog and plan the product releases more effectively.
- A user story map captures the journey a customer takes with the product including activities and tasks they perform with the system. Creating a story map collaboratively ensures team members are on the same page from the start of the project through to ongoing development of new releases.

Here are few benefits of using story map as a user story tool:

- Manage backlog with an overview and leveled structure
- Brainstorm, discuss and prioritize user needs in a collaborative approach
- Manage activities and tasks (walking skeleton), and divide them into epics or user stories systematically
- Arrangement and prioritization of user activities and user tasks, or drill down to refine them into related epics or user stories
- Manage user stories in the online for both remote and co-location environments collaboratively for keeping everyone in your team the same page.

Why You Need a User Story Mapping Tool like Visual Paradigm?

Listed below are some of the reasons why you need a user story mapping tool like Visual Paradigm in story mapping.

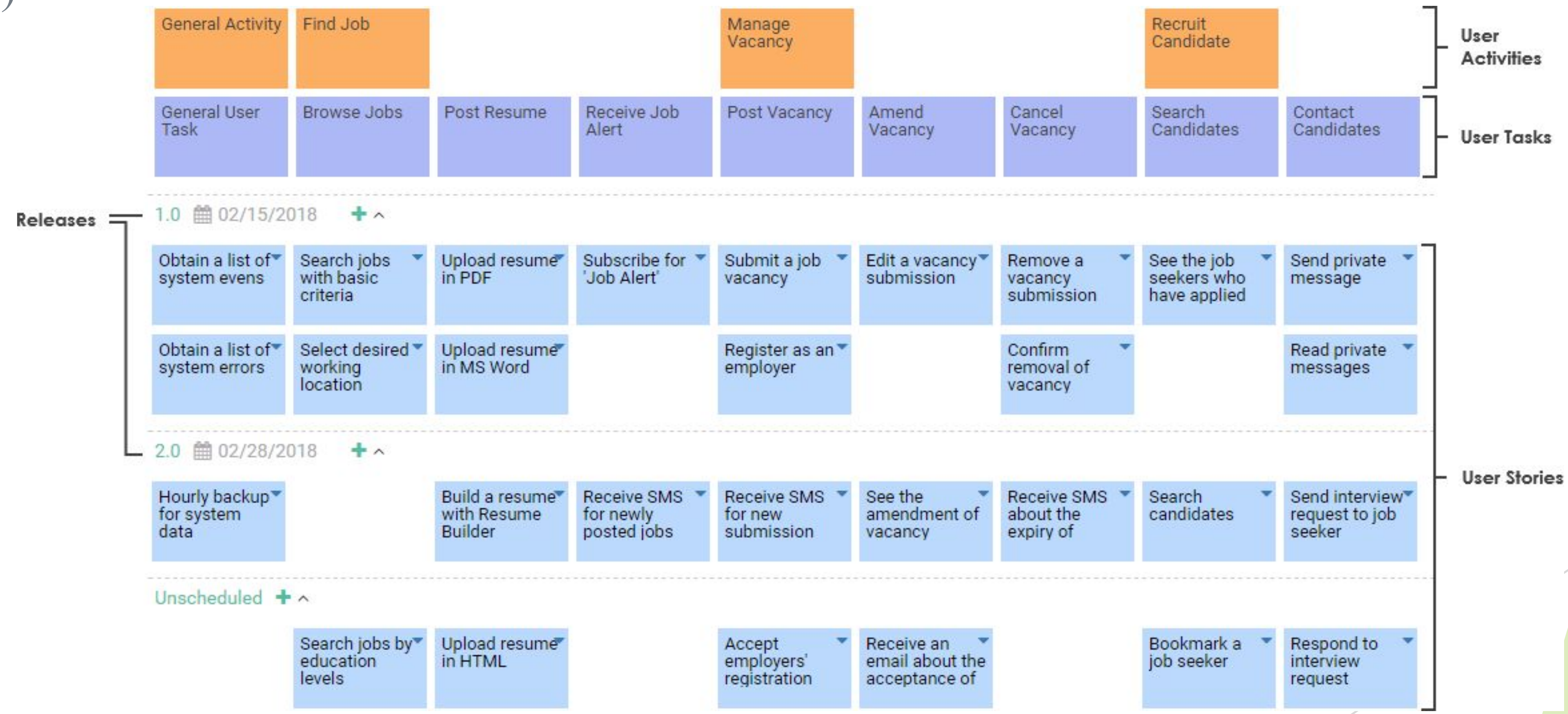
- Never run out of space on your whiteboard,
- Easy to organize, update and modified information in the stickers
- Easy to organize stickers for prioritization of stickers by dragging and dropping stickers around in the map
- Manage user stories in the online for both remote and co-location environments collaboratively for keeping everyone in your team the same page.

Flexible Structure Complex or Simple Projects

- Visual Paradigm's Story map supports a **3 or 4-level hierarchical structure** for requirements gathering which is suitable for either complex, medium or simple projects. Story map starts from a collection of user features received from different sources (i.e. use case, BPMN, WBS or even mind maps) into the backlog of the story map, and these user features will be realized as an user activities and into related walking skeleton (user tasks). And these tasks can be breakdown further into epics, and then user stories for software development.

3-level Story Map for Medium Size Project

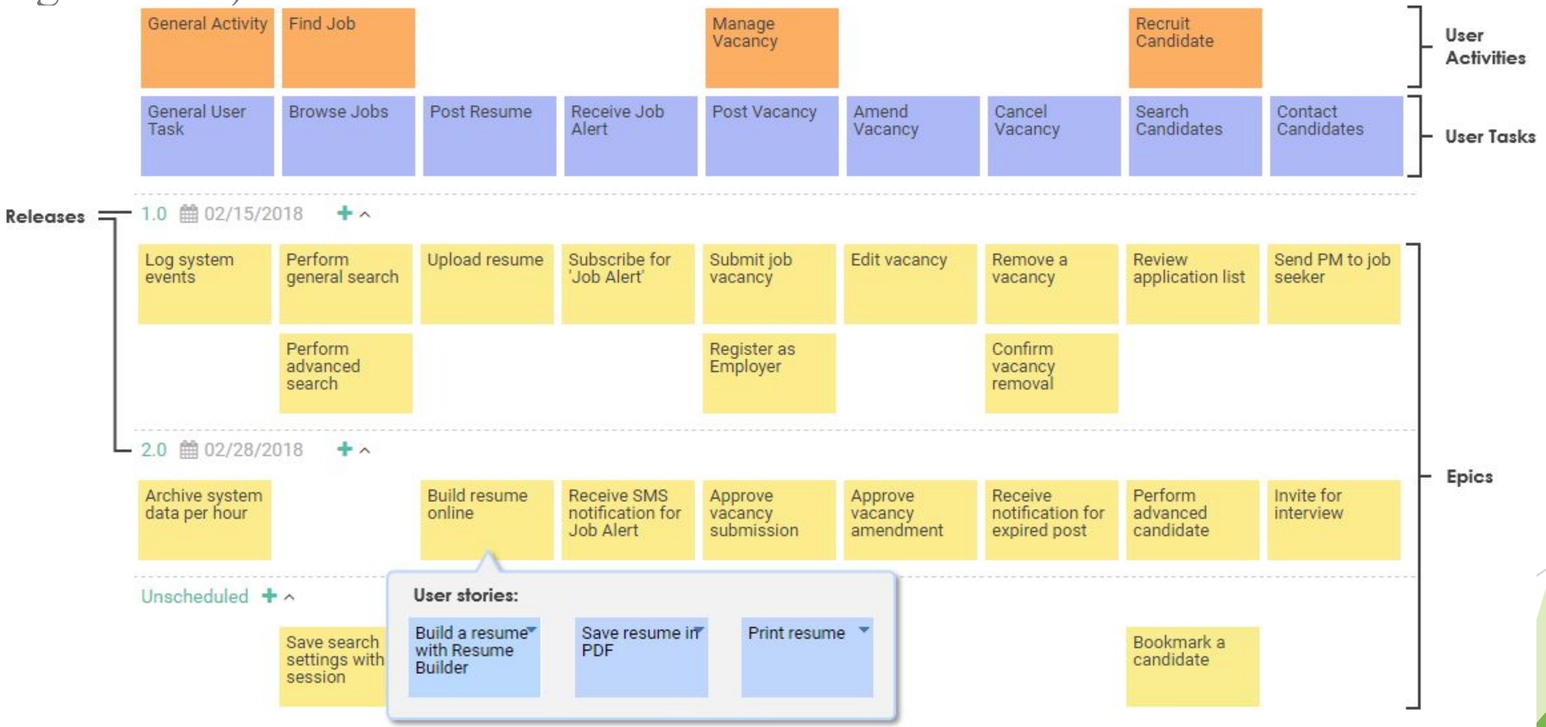
- The 3-level story map involves three compartments: Activities > Tasks > Stories (Default)



General Activity	Find Job			Manage Vacancy			Recruit Candidate	
General User Task	Browse Jobs	Post Resume	Receive Job Alert	Post Vacancy	Amend Vacancy	Cancel Vacancy	Search Candidates	Contact Candidates
1.0 02/15/2018								
Obtain a list of system evens	Search jobs with basic criteria	Upload resume in PDF	Subscribe for 'Job Alert'	Submit a job vacancy	Edit a vacancy submission	Remove a vacancy submission	See the job seekers who have applied	Send private message
Obtain a list of system errors	Select desired working location	Upload resume in MS Word		Register as an employer		Confirm removal of vacancy		Read private messages
2.0 02/28/2018								
Hourly backup for system data		Build a resume with Resume Builder	Receive SMS for newly posted jobs	Receive SMS for new submission	See the amendment of vacancy	Receive SMS about the expiry of	Search candidates	Send interview request to job seeker
Unscheduled								
	Search jobs by education levels	Upload resume in HTML		Accept employers' registration	Receive an email about the acceptance of		Bookmark a job seeker	Respond to interview request

4-level Story Map for More Complex Project

- The 4-level story map adds Epics into the 3-level map: Activities > Tasks > Epics > Stories (Configurable to)



User Activities	General Activity	Find Job			Manage Vacancy			Recruit Candidate	
User Tasks	General User Task	Browse Jobs	Post Resume	Receive Job Alert	Post Vacancy	Amend Vacancy	Cancel Vacancy	Search Candidates	Contact Candidates
Releases	1.0 02/15/2018								
Epics	Log system events	Perform general search	Upload resume	Subscribe for 'Job Alert'	Submit job vacancy	Edit vacancy	Remove a vacancy	Review application list	Send PM to job seeker
		Perform advanced search			Register as Employer		Confirm vacancy removal		
	2.0 02/28/2018								
	Archive system data per hour		Build resume online	Receive SMS notification for Job Alert	Approve vacancy submission	Approve vacancy amendment	Receive notification for expired post	Perform advanced candidate	Invite for interview
	Unscheduled								
		Save search settings with session						Bookmark a candidate	

User stories:

Build a resume with Resume Builder	Save resume in PDF	Print resume

- https://kanbanize.com/agile/project-management/estimation#:~:text=Agile%20estimation%20is%20the%20process,widely%20applied%20among%20Agile%20teams.
- https://planningpokeronline.com/