Project Planning Phase

Project Planning Template (Product Backlog, Sprint Planning, Stories, Story points)

Date	24 October 2023
Team ID	Team-591245
Project Name	Project On Tata Power Stock Analysis
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In the project planning phase, the Product Backlog, Sprint Schedule, and Estimation are key components of Agile project management. These elements are essential for organizing and managing work in Agile development methodologies, such as Scrum. Here's what each of these terms means in the context of project planning:

1. Product Backlog: The product backlog is a dynamic and prioritized list of features, user stories, tasks, and requirements that need to be developed to complete a project. It is a comprehensive repository of all work items that might be included in the project.

- **Purpose :** The product backlog serves as a single source of truth for all project requirements. It is used to capture and prioritize the work that needs to be done, ensuring that the most valuable items are addressed first.
- **Characteristics :**
  - ✓ Items are prioritized, with the most important at the top.

- ✓ Items can be user stories, bug fixes, technical tasks, or any work related to the project.
- ✓ It is constantly refined and updated based on changing project needs and feedback.

2. Sprint Schedule: A sprint schedule is a plan that outlines the duration and timing of individual sprints within an Agile project. Each sprint represents a fixed period during which a team works on a set of items from the product backlog.

- ➢ **Purpose:** The sprint schedule provides a structured framework for iterative development. It enables teams to focus on a subset of work items in a time-boxed period, typically 2 to 4 weeks, ensuring frequent delivery and feedback.
- ➢ **Characteristics:**
  - ✓ Sprints have fixed start and end dates.
  - ✓ A new sprint begins immediately after the previous one ends.
  - ✓ Sprint schedules are determined based on the project's scope and goals.

3. Estimation: Estimation in Agile project planning involves assigning a relative size or complexity value to each item in the product backlog. Common estimation techniques include story points, ideal days, or t-shirt sizes.

- ➢ **Purpose**: Estimation helps in understanding the effort required to complete each work item. It aids in planning and prioritizing work during sprint planning and provides a basis for calculating team velocity.
- ➢ **Characteristics:**
  - ✓ Estimations are typically done collaboratively with team members.
  - ✓ Estimation units (e.g., story points) are used to quantify work items.

- ✓ Estimations are not precise predictions but relative comparisons of complexity.

let's create a product backlog, sprint schedule, and estimation for the "Project On Tata Power Stock Analysis" using the provided template.

Product Backlog, Sprint Schedule, and Estimation (4 Marks)

Use the below template to create product backlog and sprint schedule

Product Backlog :

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Initial Data Access	001	As an analyst, I want to access historical stock price data for Tata Power	5	High	Analysts, Developers
Sprint-2	Technical Analysis Tools	002	As a trader, I want access to technical analysis tools for Tata Power stock.	8	High	Traders, Developers
Sprint-3	Report Generation	003	As an analyst, I want to generate reports on Tata Power's historical stock performance	10	High	Analysts, Report Writers
Sprint-4	Correlation Analysis	004	As a researcher, I want to perform correlation analysis with macroeconomic variables.	7	Medium	Researchers, Data Analysts
Sprint-5	Machine Learning Integration	005	As a data scientist, I want to integrate pre-trained machine learning models for stock price prediction.	9	Medium	Data Scientists, Machine
Sprint-6	User Interface Enhancement	006	As a user, I want a more user-friendly interface for easier navigation.	6	Medium	Learning Engineers

Sprint Schedule :

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint 1 (Duration: 2 weeks)	Initial Data Access	1	As an analyst, I want to access historical stock price data for Tata Power	5	High	Analysts, Developers
	Technical Analysis Tools	2	As a trader, I want access to technical analysis tools for Tata Power stock.	8	High	Traders, Developers
	User Interface Enhancement	6	As a user, I want a more user-friendly interface for easier navigation.	6	Medium	Learning Engineers
Sprint 2 (Duration: 2 weeks)	Report Generation	3	As an analyst, I want to generate reports on Tata Power's historical stock performance	10	High	Analysts, Report Writers
	Correlation Analysis	4	As a researcher, I want to perform correlation analysis with macroeconomic variables.	7	Medium	Researchers, Data Analysts
	User Interface Enhancement	6	As a user, I want a more user-friendly interface for easier navigation.	6	Medium	Learning Engineers
Sprint 3 (Duration: 2 weeks)	Machine Learning Integration	5	As a data scientist, I want to integrate pre-trained machine learning models for stock price prediction.	9	Medium	Data Scientists, Machine
	User Interface Enhancement	6	As a user, I want a more user-friendly interface for easier navigation.	6	Medium	Learning Engineers

Estimation :

The story points are estimates for the complexity and effort required for each user story. The points assigned to each story are relative, and they help the team understand the amount of work involved. In this example, I've provided estimates, but you may adjust these based on your team's experience and capacity. The priority indicates the importance of each user story, helping the team focus on high-priority items first. The team members listed for each user story indicate the individuals or roles involved in completing the tasks. The sprint schedule divides the user stories into sprints to facilitate incremental development and planning.

Project Tracker, Velocity & Burndown Chart: (4 Marks)

Project Tracker :

Let's create a project tracker for the "Project On Tata Power Stock Analysis" using the provided template.

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint 1	19	5 days	5 sep 2023	10 sep 2023	19	10 sep 2023
Sprint 2	16	5 days	12 sep 2023	17 sep 2023	16	17 sep 2023

Sprint 3	15	5 days	18 sep 2023	23 sep 2023	15	23 sep 2023
Sprint 4	18	5 days	25 sep 2023	30 sep 2023	18	30 sep 2023
Sprint 5	20	5 days	1 oct 2023	5 oct 2023	20	5 oct 2023
Sprint 6	18	5 days	5 oct 2023	10 oct 2023	18	10 oct 2023
Sprint 7	15	5 days	12 oct 2023	17 oct 2023	15	17 oct 2023
Sprint 8	19	5 days	18 oct 2023	23 oct 2023	19	23 oct 2023

Velocity :

we have a 5 days sprint duration, and the velocity of the team is 20 (points per sprint). Let's calculate the team's average velocity (AV) per iteration unit (story points per day)

$$AV = \frac{sprint\ duration}{velocity}$$

Average Velocity (AV) = 20 points / 5 days = 4

Burndown Chart:

A burn down chart is a graphical representation of work left to do versus time. It is often used in agile software development methodologies such as Scrum. However, burn down charts can be applied to any project containing measurable progress over time.

We have

Duration	:	5 days
Sprint Backlog	:	8 tasks
Velocity	:	80 available hours

Step 1 – Create Estimate Effort :

In this example, 80 hours over 5 days equating to 16 hours a day. In order to create the project burn-down chart, the data needs to be captured as a daily running total starting with 80 hours than 64 hours left 1 (80 – 16) at end of day, 48 hours left at end of day 2, etc.

Burndown - Estimate effort

	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5
Effort remaining	80	64	48	32	16	0

Step 2 – Track Daily Process :

The daily progress is then captured in the table against each task. It is important to remember that the value captured for each day is the estimated effort to complete the task, not the actual effort.

Burndown - Daily progress

Task	Hours	Day 1	Day 2	Day 3	Day 4	Day 5	Total
Task 1	10	3	2	0	1	4	10
Task 2	10	3	2	0	1	4	10
Task 3	10	3	2	0	1	4	10
Task 4	10	3	2	0	1	4	10
Task 5	10	3	2	0	1	4	10
Task 6	10	3	2	0	1	4	10
Task 7	10	3	2	0	1	4	10
Task 8	10	3	2	0	1	4	10

Step 3 – Compute the Actual Effort

The total remaining effort needs to be captured at the end of each day. This is the total (sum) of all of the estimated time remaining at the end of each day.

Burndown - Actual effort

		Day 1	Day 2	Day 3	Day 4	Day 5
Actual effort	80	56	40	40	32	0
Effort remaining	80	64	48	32	16	0

Step 4 – Obtain the Final Dataset

When the data is available, the project burn-down chart can be created. This is relatively simple using the line chart option available within Excel.

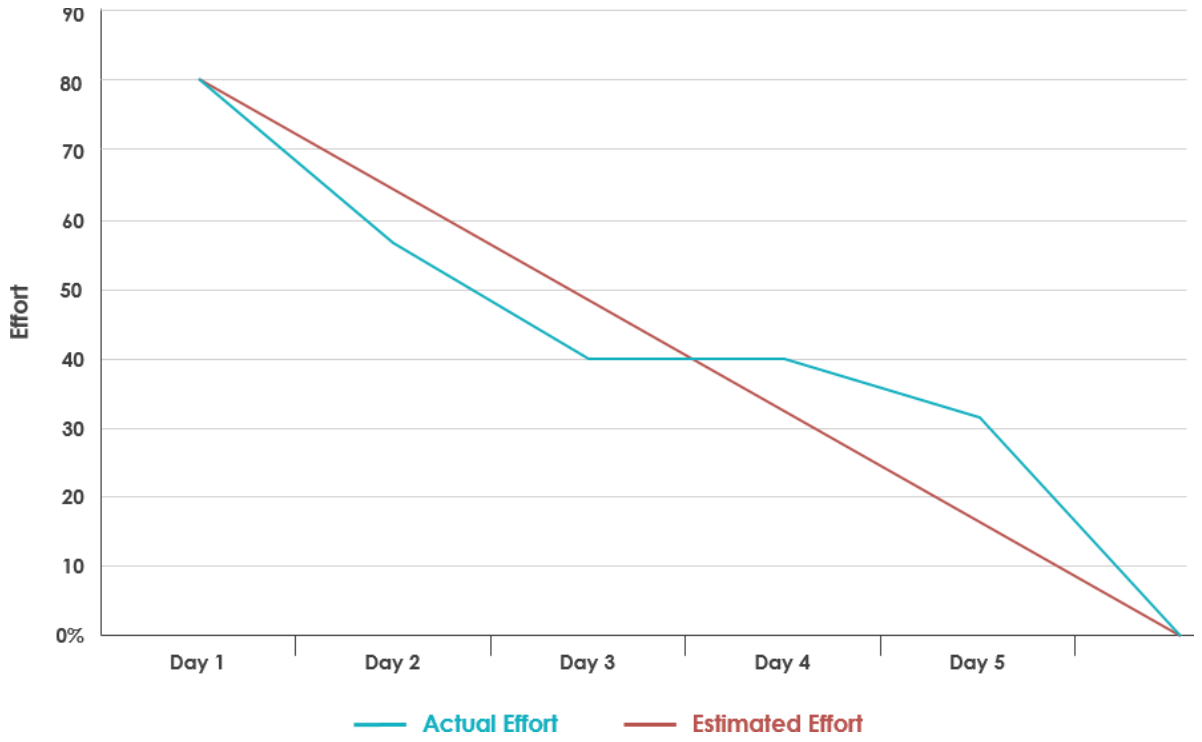
Burndown - Final dataset

	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5
Actual effort	80	56	40	40	32	0
Effort remaining	80	64	48	32	16	0

Highlight the summary table that contains the daily total for baseline effort and estimated effort. You should also capture the heading of time period (Day 0, Day 1, etc).

Step 5 – Plot the Burndown using the Dataset

It is very simple to create a project burn-down chart as following, as long as you know what data you are tracking.



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