

## Project Planning Phase

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

Date	01 November 2023
Team ID	Team-593041
Project Name	Time Series Analysis for Bitcoin Price Prediction Using Prophet
Maximum Marks	8 Marks

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

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1,2	Data Acquisition and Preprocessing	USN-1	As a Data Scientist, I want to access reliable historical Bitcoin price data, so I can analyze and predict trends effectively.	1	High	Sarvepalli Megha Suhanth
Sprint-3,4	Model Development and Training	USN-2	As a Machine Learning Engineer, I want to create a baseline fbProphet model for Bitcoin price prediction, so I can establish a foundation for further optimization.	2	High	Vishruth Reddy
Sprint-5,6	Bitcoin Price Prediction and Visualization	USN-3	As a Product Owner, I want to visualize model predictions against actual Bitcoin prices, so I can interpret the results and make informed decisions.	3	High	Anvesh Reddy, Sai Pranav
Sprint-7,8	Performance Evaluation and Model Refinement	USN-4	As a quality assurance specialist, I want to test the model's performance rigorously and evaluate its effectiveness for Bitcoin price prediction.	5	High	Sarvepalli Megha Suhanth, Vishruth Reddy
Sprint -9,10	Front end Development	USN-5	As a Front-End Developer, I want to implement interactive charts on the user interface, so users can visualize both predicted and actual price dynamically.	5	High	Vishruth Reddy

Sprint-11,12	Deployment and Application of the Time Series Forecasting Model	USN-6	As a DevOps Engineer, I want to select an appropriate cloud service provider and set up infrastructure, so the application and model can be hosted securely and efficiently.	6	High	Anvesh Reddy, Sai Pranav, Megha Suhanth
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### Project Tracker, Velocity & Burndown Chart: (4 Marks)

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-1,2	8	1 Day	01 Nov 2023	01 Nov 2023	9	01 Nov 2023
Sprint-3,4	8	1 Day	02 Nov 2023	02 Nov 2023	8	02 Nov 2023
Sprint-5,6	8	3 Days	03 Nov 2023	05 Nov 2023	10	05 Nov 2023
Sprint-7,8,9	12	2 Days	05 Nov 2023	06 Nov 2023	11	06 Nov 2023
Sprint-10,11,12	12	2 Days	06 Nov 2023	08 Nov 2023	5	08 Nov 2023

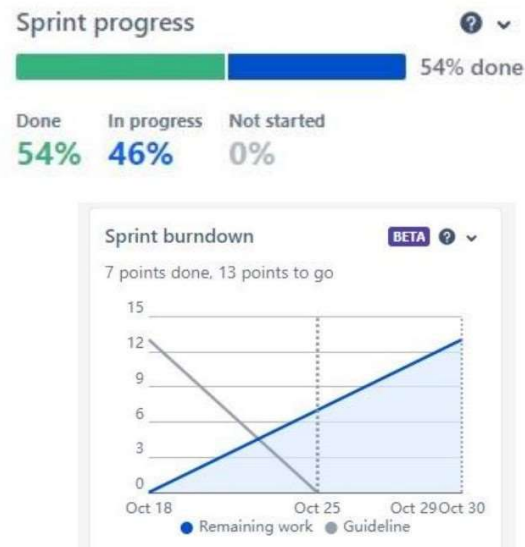
## Velocity:

The team velocity of the 09-day sprint duration is:

$$\text{Velocity} = (9+8+10+11+5) / 5 = 43 / 5 = 8.6$$

$$\text{Average Velocity} = \text{Sprint duration} / \text{velocity} = 9 / 8.6 = 1.04$$

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.



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Add people

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People

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Megha Suhanth



Vangala Vishruth R...



Kannepalli Venkata...



Sai Anvesh Reddy ...

Board:

All Sprints - Agile board - Jira

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8

8

8

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Epic

Sprint

GROUP BY

None

Import work

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TO DO 8

IN PROGRESS 3

DONE 1

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Create wireframes and mockups for different screens  
FRONT END DEVELOPMENT  
TSAFBPPUF-26

Develop the front-end components using appropriate technologies(HTML, CSS, JavaScript frameworks like React or Angular)  
FRONT END DEVELOPMENT  
TSAFBPPUF-27

Display the impact of parameter changes on the forecasted prices in real-time, enabling users to make informed decisions.  
FRONT END DEVELOPMENT

Implement model refinement strategies based on performance evaluation and sensitivity analysis.  
PERFORMANCE EVALUATION AND MODE...  
TSAFBPPUF-23

Document the performance evaluation and model refinement process, including findings and recommendations.  
PERFORMANCE EVALUATION AND MODE...  
TSAFBPPUF-24

Design the user interface for the web application  
FRONT END DEVELOPMENT  
TSAFBPPUF-25

Investigate techniques to improve the model's robustness to changing market conditions.  
PERFORMANCE EVALUATION AND MODE...  
TSAFBPPUF-22

Quickstart

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Time Series Analysis for Bitcoin F x +

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Issues without epic

> Data Acquisition and Preprocessing

> Model Development and Training

> Bitcoin Price Prediction and Visualization

> Performance Evaluation and Model Refinement

> Front end Development

+ Create epic

▼ TSAFBPPU Sprint 1 1 Nov – 2 Nov (2 issues)

Design and Implement a data acquisition pipeline

TSAFBPPUF-34 Research and select a reliable source for historical Bitcoin price data. DATA ACQUIS... DONE ▾ MS

TSAFBPPUF-35 Design and implement a data acquisition pipeline using appropriate to... DATA ACQUIS... DONE ▾ MS

+ Create issue

2 issues | Estimate: 0

▼ TSAFBPPU Sprint 2 1 Nov – 2 Nov (2 issues)

Transform the Bitcoin price data into a format suitable.

TSAFBPPUF-36 Implement more advanced data preprocessing techniques, addressing ... DATA ACQUIS... DONE ▾ MS

TSAFBPPUF-37 Evaluate data quality and ensure the preprocessed data is suitable for ti... DATA ACQUIS... DONE ▾ MS

+ Create issue

2 issues | Estimate: 0

▼ TSAFBPPU Sprint 3 2 Nov – 3 Nov (2 issues)

Install and configure the fbProphet time series forecasting library

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Model Development and Training

Bitcoin Price Prediction and Visualization

Performance Evaluation and Model Refinement

Front end Development

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TSAFBPPU Sprint 3 2 Nov – 3 Nov (2 issues)

0 0 0 Start sprint

Install and configure the fbProphet time series forecasting library

TSAFBPPUF-38 Install and configure the fbProphet time series forecasting library in the...

MODEL DEVE...

DONE

TSAFBPPUF-39 Explore different fbProphet model configurations and hyperparameters...

MODEL DEVE...

DONE

Create issue

2 issues | Estimate: 0

TSAFBPPU Sprint 4 2 Nov – 3 Nov (2 issues)

0 0 0 Start sprint

Train and Evaluate the performance of the fbProphet model

TSAFBPPUF-40 Fine-tune the fbProphet model hyperparameters to optimize forecastin...

MODEL DEVE...

DONE

TSAFBPPUF-41 Evaluate the model's performance using various metrics, such as MAE a...

MODEL DEVE...

DONE

Create issue

2 issues | Estimate: 0

TSAFBPPU Sprint 5 3 Nov – 5 Nov (3 issues)

0 0 0 Quickstart

Generate Bitcoin price forecasts for a specified future time horizon and visualize the historical Bitcoin price data

Time Series Analysis for Bitcoin F

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TSAFBPPU Sprint 5

3 Nov – 5 Nov

(3 issues)

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Start sprint

Generate Bitcoin price forecasts for a specified future time horizon and visualize the historical Bitcoin price data

TSAFBPPUF-42

Implement logic to generate Bitcoin price forecasts for a specified futur...

BITCOIN PRIC...

DONE

TSAFBPPUF-43

Develop visualizations for historical Bitcoin price data, forecasted prices...

BITCOIN PRIC...

DONE

TSAFBPPUF-44

Create an interactive interface that allows users to adjust forecasting pa...

BITCOIN PRIC...

DONE

Create issue

3 issues | Estimate: 0

TSAFBPPU Sprint 6

3 Nov – 5 Nov

(2 issues)

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Start sprint

Develop an interactive interface that allows users to adjust forecasting parameters and visualize the corresponding price predictions.

TSAFBPPUF-45

Enhance the interactive interface with additional features, such as data f...

BITCOIN PRIC...

DONE

TSAFBPPUF-46

Perform usability testing to ensure the interface is user-friendly and int...

BITCOIN PRIC...

DONE

Create issue

TSAFBPPU Sprint 7

5 Nov – 6 Nov

(2 issues)

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Start sprint

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Bitcoin Price Prediction and Visualization

Performance Evaluation and Model Refinement

Front end Development

Create epic

Create issue

2 issues | Estimate: 0

TSAFBPPU Sprint 7

5 Nov – 6 Nov

(2 issues)

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Start sprint

Compare the performance of the fbProphet model with other time series forecasting methods and analyze the model sensitivity

TSAFBPPUF-47

Implement other time series forecasting methods, such as ARIMA or ex...

PERFORMAN...

DONE

TSAFBPPUF-48

Analyze the sensitivity of the fbProphet model to input data and hyper...

PERFORMAN...

DONE

MS

Create issue

2 issues | Estimate: 0

TSAFBPPU Sprint 8

5 Nov – 6 Nov

(2 issues)

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Start sprint

Implement techniques to improve the model's robustness and adaptability to changing market conditions.

TSAFBPPUF-23

Implement model refinement strategies based on performance evalu...

PERFORMAN...

IN PROGRESS

MS

TSAFBPPUF-24

Document the performance evaluation and model refinement proces...

PERFORMAN...

IN PROGRESS

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> Front end Development

+ Create epic

+ Create issue

2 issues | Estimate: 0

TSAFBPPU Sprint 9

Add dates

(2 issues)

0

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0

Start sprint

...

UI/UX design

TSAFBPPUF-25

Design the user interface for the web application

FRONT END D...

IN PROGRESS

-

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TSAFBPPUF-26

Create wireframes and mockups for different screens

FRONT END D...

TO DO

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+ Create issue

2 issues | Estimate: 0

TSAFBPPU Sprint 10

Add dates

(2 issues)

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Start sprint

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Front-end Implementation

TSAFBPPUF-27

Develop the front-end components using appropriate technologies(...)

FRONT END D...

TO DO

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TSAFBPPUF-28

Display the impact of parameter changes on the forecasted prices in ...

FRONT END D...

TO DO

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TSAFBPPU Sprint 11

Add dates

3 issues

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Start sprint

Integration of the forecasting module

TSAFBPPUF-29

Investigate techniques to improve the model's robustness to changi...

DEPLOYMENT...

TO DO

TSAFBPPUF-30

Package the time series forecasting model and its dependencies into...

DEPLOYMENT...

TO DO

TSAFBPPUF-31

Design and develop a web-based platform or trading interface to int...

DEPLOYMENT...

TO DO

MS

Create issue

3 issues | Estimate: 0

TSAFBPPU Sprint 12

Add dates

2 issues

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Start sprint

Develop documentation and user guides to facilitate the adoption and utilization of the forecasting model by interested users

TSAFBPPUF-32

Conduct user testing to ensure the deployed forecasting solution is f...

DEPLOYMENT...

TO DO

TSAFBPPUF-33

Deploy the forecasting solution to a production environment and m...

DEPLOYMENT...

TO DO

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	26 27 28 29	30 31 1 2 3 4 5	6 7 8 9 10 11 12	13 14 15 16 17 18 19 20
Sprints		TSAFBPP... TSAFBPP...		
> TSAFBPPUF-1 Data Acquisition and Pre...				
> TSAFBPPUF-2 Model Development and ...				
> TSAFBPPUF-3 Bitcoin Price Prediction a...				
> TSAFBPPUF-4 Performance Evaluation a...				
> TSAFBPPUF-5 Front end Development				
> TSAFBPPUF-6 Deployment and Applicat...				
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Today Weeks Months Quarters Quickstart

<https://www.visual-paradigm.com/scrum/scrum-burndown-chart/>  
<https://www.atlassian.com/agile/tutorials/burndown-charts>

**Reference:**

<https://www.atlassian.com/agile/project-management>  
<https://www.atlassian.com/agile/tutorials/how-to-do-scrum-with-jira-software> <https://www.atlassian.com/agile/tutorials/epics>  
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