

## Project Planning Phase

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

|               |  |
|---------------|--|
| Team ID       | PNT2022TMD39901  |
| Project Name  | Exploratory Analysis of Rainfall Data in India for Agriculture |
| Maximum Marks | 4 Marks  |
| Team Leader   | Saravanakumar K  |
| Team Members  | Lokesh B, Martin Thomas Y, Magesh P                            |

#### 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 | Rainfall Prediction Model     | USN-1             | Collecting weather dataset, data preprocessing the data and do a data visualization     | 5            | High     | Team Lead, Team Member 2   |  |
| Sprint-1 |                               | USN-3             | Test the best model and save best model by pickle library                               | 5            | High     | Team lead                  |  |
| Sprint-1 | Crop Recommendation Model     | USN-4             | Collecting sowing crop dataset, data preprocessing the data and do a data visualization | 5            | High     | Team Member1, Team Member2 |  |
| Sprint-1 |                               | USN-5             | Train crop recommendation model using different machine learning algorithms             | 5            | Medium   | Team Member2, Team Member3 |  |

|          |                     |        |  |    |        |  |
|----------|---------------------|--------|--|----|--------|--|
| Sprint-1 |                     | USN-6  | Test the best model and save best model by pickle library  | 5  | High   | Team lead<br>Team Member1,<br>Team Member2 |
| Sprint-2 | Registration        | USN-7  | User can register for the application by entering his or her email, password, and confirming the password. | 5  | Medium | Team Member1,<br>Team Member2              |
| Sprint-2 |                     | USN-8  | User will receive confirmation email or message once registered for the application                        | 5  | Low    | Team Member2,<br>Team Member3              |
| Sprint-2 | Login               | USN-9  | Enter the username and password to login to the application  | 5  | Medium | Team lead                                  |
| Sprint-2 |                     | USN-10 | The existing credentials should be used for login on multiple systems                                      | 5  | Medium | Team lead<br>Team Member3                  |
| Sprint-2 | Dashboard           | USN-11 | Forecast the today weather   | 10 | Low    | Team Lead,<br>Team Member 2                |
| Sprint-3 | Rainfall Prediction | USN-12 | User can enter the weather parameters like min temp, max temp, etc.  | 5  | High   | Team Member2,<br>Team Member3              |
| Sprint-3 |                     | USN-13 | Predict the rainfall and display the result  | 5  | High   | Team Member2,                              |
| Sprint-3 |                     | USN-15 | Predict the crop to be harvested and display the result  | 5  | High   | Team lead<br>Team Member1                  |
| Sprint-4 | Testing             | USN-16 | Test the application   | 10 | High   | Team lead<br>Team Member3                  |
| Sprint-4 | Deploy Model        | USN-17 | deploy the model in IBM cloud to make user friendly application  | 10 | High   | Team Member1,<br>Team Member2              |

### 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 | 30                 | 6 Days   | 24 Oct 2022       | 29 Oct 2022               | 30  | 30 Oct 2022                  |
| Sprint-2 | 30                 | 6 Days   | 31 Oct 2022       | 05 Nov 2022               | 30  | 06 Nov 2022                  |
| Sprint-3 | 20                 | 6 Days   | 07 Nov 2022       | 12 Nov 2022               | 20  | 13 Nov 2022                  |
| Sprint-4 | 20                 | 6 Days   | 14 Nov 2022       | 19 Nov 2022               | 20  | 20 Nov 2022                  |

#### Velocity:

We have a 6-day sprint duration, and the velocity of the team is 20 to 30 (points per sprint). Let's calculate the team's average velocity (AV) per iteration unit (story points per day)

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

| Sprint   | Average Velocity |
|----------|------------------|
| Sprint-1 | 5                |
| Sprint-2 | 5                |
| Sprint-3 | 3.33             |
| Sprint-4 | 3.33             |

Total Average Velocity = 4.16

RoadMap

|         |                                       | OCT      |    |    |    |    |    |    | NOV |          |   |   |   |   |   | NOV |          |   |   |    |    |    |    |          |    |    |    |    |    |    |  |
|---------|---------------------------------------|----------|----|----|----|----|----|----|-----|----------|---|---|---|---|---|-----|----------|---|---|----|----|----|----|----------|----|----|----|----|----|----|--|
|         |                                       | 23       | 24 | 25 | 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 |                                       | Sprint 1 |    |    |    |    |    |    |     | Sprint 2 |   |   |   |   |   |     | Sprint 3 |   |   |    |    |    |    | Sprint 4 |    |    |    |    |    |    |  |
| ▼       | IP-20 Rainfall Prediction Model       |          |    |    |    |    |    |    |     |          |   |   |   |   |   |     |          |   |   |    |    |    |    |          |    |    |    |    |    |    |  |
|         | IP-21 Data Collection                 | TO DO    |    |    |    |    |    |    |     |          |   |   |   |   |   |     |          |   |   |    |    |    |    |          |    |    |    |    |    |    |  |
|         | IP-22 Data Preprocessing              | TO DO    |    |    |    |    |    |    |     |          |   |   |   |   |   |     |          |   |   |    |    |    |    |          |    |    |    |    |    |    |  |
|         | IP-23 Data Visualization              | TO DO    |    |    |    |    |    |    |     |          |   |   |   |   |   |     |          |   |   |    |    |    |    |          |    |    |    |    |    |    |  |
|         | IP-24 Train Rainfall Prediction Model | TO DO    |    |    |    |    |    |    |     |          |   |   |   |   |   |     |          |   |   |    |    |    |    |          |    |    |    |    |    |    |  |
|         | IP-25 Test the Model                  | TO DO    |    |    |    |    |    |    |     |          |   |   |   |   |   |     |          |   |   |    |    |    |    |          |    |    |    |    |    |    |  |
|         | IP-26 Save the Model                  | TO DO    |    |    |    |    |    |    |     |          |   |   |   |   |   |     |          |   |   |    |    |    |    |          |    |    |    |    |    |    |  |
| ▼       | IP-27 Crop Recommendation Model       |          |    |    |    |    |    |    |     |          |   |   |   |   |   |     |          |   |   |    |    |    |    |          |    |    |    |    |    |    |  |
|         | IP-28 Data Collection                 | TO DO    |    |    |    |    |    |    |     |          |   |   |   |   |   |     |          |   |   |    |    |    |    |          |    |    |    |    |    |    |  |
|         | IP-29 Data Preprocessing              | TO DO    |    |    |    |    |    |    |     |          |   |   |   |   |   |     |          |   |   |    |    |    |    |          |    |    |    |    |    |    |  |
|         | IP-30 Data Visualization              | TO DO    |    |    |    |    |    |    |     |          |   |   |   |   |   |     |          |   |   |    |    |    |    |          |    |    |    |    |    |    |  |
|         | IP-31 Train Crop Recommendation Model | TO DO    |    |    |    |    |    |    |     |          |   |   |   |   |   |     |          |   |   |    |    |    |    |          |    |    |    |    |    |    |  |
|         | IP-32 Test the Model                  | TO DO    |    |    |    |    |    |    |     |          |   |   |   |   |   |     |          |   |   |    |    |    |    |          |    |    |    |    |    |    |  |
|         | IP-33 Save a Model                    | TO DO    |    |    |    |    |    |    |     |          |   |   |   |   |   |     |          |   |   |    |    |    |    |          |    |    |    |    |    |    |  |
| ▼       | IP-34 Registration                    |          |    |    |    |    |    |    |     |          |   |   |   |   |   |     |          |   |   |    |    |    |    |          |    |    |    |    |    |    |  |
|         | IP-35 Registration Page               | TO DO    |    |    |    |    |    |    |     |          |   |   |   |   |   |     |          |   |   |    |    |    |    |          |    |    |    |    |    |    |  |
|         | IP-36 User Authentication             | TO DO    |    |    |    |    |    |    |     |          |   |   |   |   |   |     |          |   |   |    |    |    |    |          |    |    |    |    |    |    |  |
| ▼       | IP-37 Login                           |          |    |    |    |    |    |    |     |          |   |   |   |   |   |     |          |   |   |    |    |    |    |          |    |    |    |    |    |    |  |
|         | IP-43 Login Page                      | TO DO    |    |    |    |    |    |    |     |          |   |   |   |   |   |     |          |   |   |    |    |    |    |          |    |    |    |    |    |    |  |
|         | IP-44 User Authentication             | TO DO    |    |    |    |    |    |    |     |          |   |   |   |   |   |     |          |   |   |    |    |    |    |          |    |    |    |    |    |    |  |
| ▼       | IP-38 Dashboard                       |          |    |    |    |    |    |    |     |          |   |   |   |   |   |     |          |   |   |    |    |    |    |          |    |    |    |    |    |    |  |
|         | IP-45 Dashboard Page                  | TO DO    |    |    |    |    |    |    |     |          |   |   |   |   |   |     |          |   |   |    |    |    |    |          |    |    |    |    |    |    |  |
| ▼       | IP-39 Rainfall Prediction             |          |    |    |    |    |    |    |     |          |   |   |   |   |   |     |          |   |   |    |    |    |    |          |    |    |    |    |    |    |  |
|         | IP-46 Rainfall Prediction Page        | TO DO    |    |    |    |    |    |    |     |          |   |   |   |   |   |     |          |   |   |    |    |    |    |          |    |    |    |    |    |    |  |
|         | IP-47 Predicted Result Page           | TO DO    |    |    |    |    |    |    |     |          |   |   |   |   |   |     |          |   |   |    |    |    |    |          |    |    |    |    |    |    |  |
| ▼       | IP-40 Crop Recommendation             |          |    |    |    |    |    |    |     |          |   |   |   |   |   |     |          |   |   |    |    |    |    |          |    |    |    |    |    |    |  |
|         | IP-48 Crop Recommendation Page        | TO DO    |    |    |    |    |    |    |     |          |   |   |   |   |   |     |          |   |   |    |    |    |    |          |    |    |    |    |    |    |  |
|         | IP-49 Predicted Result Page           | TO DO    |    |    |    |    |    |    |     |          |   |   |   |   |   |     |          |   |   |    |    |    |    |          |    |    |    |    |    |    |  |
| ▼       | IP-41 Testing                         |          |    |    |    |    |    |    |     |          |   |   |   |   |   |     |          |   |   |    |    |    |    |          |    |    |    |    |    |    |  |
|         | IP-50 Testing the Application         | TO DO    |    |    |    |    |    |    |     |          |   |   |   |   |   |     |          |   |   |    |    |    |    |          |    |    |    |    |    |    |  |
| ▼       | IP-42 Deploy Model                    |          |    |    |    |    |    |    |     |          |   |   |   |   |   |     |          |   |   |    |    |    |    |          |    |    |    |    |    |    |  |
|         | IP-51 Deploy Model in IBM Cloud       | TO DO    |    |    |    |    |    |    |     |          |   |   |   |   |   |     |          |   |   |    |    |    |    |          |    |    |    |    |    |    |  |

Burndown Chart:

