**Project Planning Phase**

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

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| --- | --- |
| Date |  |
| Team ID | LTVIP2025TMID54121 |
| Project Name | Revolutionizing Liver Care |
| Maximum Marks | 5 Marks |

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

**Project Tracker Overview (Sprint Board Style) :**

The project was broken into 5 daily sprints, each with tasks tracked under To Do, In Progress, and Done. Work moved smoothly from planning and data processing to modelling, integration, and deployment.

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| --- | --- | --- | --- |
| **Day** | **To Do** | **In Progress** | **Done** |
| Day 1 | Define goals, collect data | Preprocessing, repo setup | - |
| Day 2 | EDA, Feature selection | Model training | Data cleaning |
| Day 3 | Hyperparameter tuning | Model evaluation, API creation | EDA, initial model |
| Day 4 | Frontend design, integration | Testing and debugging | Backend complete, ML model ready |
| Day 5 | Final deployment, docu  mentation | Demo prep | UI integration, testing |

**⚙️ Team Velocity Summary:**

* Total Tasks: 14
* Total Story Points Estimated: 59
* Points Completed Daily:
  + Day 1: 10 pts
  + Day 2: 12 pts
  + Day 3: 14 pts
  + Day 4: 10 pts
  + Day 5: 13 pts
* Average Team Velocity: ~11.8 points/day
* The team consistently completed all tasks across 5 days.

**📉 Burndown Chart Summary:**

The burndown chart tracked remaining story points against the project days.

|  |  |  |
| --- | --- | --- |
| **Day** | **Planned Points Left** | **Actual Points Left** |
| Day 1 | 47 | 49 |
| Day 2 | 35 | 37 |
| Day 3 | 23 | 23 |
| Day 4 | 11 | 13 |
| Day 5 | 0 | 0 |

* Insight: The team started slightly behind schedule but recovered mid-way, and completed all tasks by Day 5, showing good collaboration and effective sprint execution.

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

📋 **Product Backlog with Estimation:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ID** | **Task / User Story** | **Priority** | **Estimation (Hours)** | **Assigned To** |
| PB1 | Define objectives and success metrics | High | 2 | Project Lead |
| PB2 | Collect and explore dataset | High | 4 | Data Engineer |
| PB3 | Preprocess data (cleaning, encoding, scaling) | High | 6 | Data Engineer |
| PB4 | Perform EDA and visualize data | Medium | 4 | Data Engineer |
| PB5 | Feature selection & correlation analysis | High | 3 | ML Engineer |
| PB6 | Train ML models (RF, SVM, XGBoost) | High | 6 | ML Engineer |
| PB7 | Evaluate models using metrics | High | 3 | ML Engineer |
| PB8 | Hyperparameter tuning (GridSearchCV) | Medium | 4 | ML Engineer |
| PB9 | Create Flask/Django API for model | High | 5 | Backend Developer |
| PB10 | Design frontend (input form + results) | Medium | 5 | Frontend Developer |
| PB11 | Integrate frontend with backend | High | 3 | Backend & Frontend Dev |
| PB12 | Conduct testing (unit & integration) | High | 3 | All Members |
| PB13 | Deploy the model to local/cloud server | Medium | 2 | Backend Developer |
| PB14 | Prepare documentation and presentation | High | 3 | Project Lead |

**Sprint Schedule (5-Day Breakdown) :**

|  |  |  |  |
| --- | --- | --- | --- |
| **Day** | **Sprint Goal** | **Planned Tasks (Product Backlog IDs)** | |
| Day 1 | | Project setup, data collection, and cleaning | PB1, PB2, PB3 |
| Day 2 | | EDA, feature engineering, initial model training | PB4, PB5, PB6 |
| Day 3 | | Model evaluation, tuning, backend setup | PB7, PB8, PB9 |
| Day 4 | | UI development and integration | PB10, PB11, PB12 |
| Day 5 | | Deployment, documentation, and final demo | PB13, PB14 |

**Effort Estimation Summary:**

|  |  |
| --- | --- |
| **Metric** | **Value** |
| Total Estimated Hours | 59 hours |
| Team Members | 4 |
| Daily Capacity per Member | 6 hours/day |
| Total Capacity (5 Days) | 5 × 6 × 4 = **120 hours** |
| Buffer Available | 120 - 59 = 6**1 hours** |

**ID**

**Product Backlog with Estimation:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ID** | **Task / User Story** | **Priority** | **Estimation (Hours)** | **Assigned To** |
| PB1 | Define objectives and success metrics | High | 2 hrs | Project Lead |
| PB2 | Collect and explore dataset | High | 4 hrs | Data Engineer |
| PB3 | Preprocess data (cleaning, encoding, scaling) | High | 6 hrs | Data Engineer |
| PB4 | Perform EDA and visualize insights | Medium | 4 hrs | Data Engineer |
| PB5 | Feature selection & correlation analysis | High | 3 hrs | ML Engineer |
| PB6 | Train ML models (RF, SVM, XGBoost) | High | 6 hrs | ML Engineer |
| PB7 | Evaluate models using metrics | High | 3 hrs | ML Engineer |
| PB8 | Hyperparameter tuning using GridSearchCV | Medium | 4 hrs | ML Engineer |
| PB9 | Create Flask/Django API for model | High | 5 hrs | Backend Developer |
| PB10 | Design frontend (input form + result display) | Medium | 5 hrs | Frontend Developer |
| PB11 | Integrate backend with frontend | High | 3 hrs | Backend & Frontend Dev |
| PB12 | Conduct testing (unit & integration) | High | 3 hrs | All Members |
| PB13 | Deploy model to local/cloud server | Medium | 2 hrs | Backend Developer |
| PB14 | Prepare documentation and presentation | High | 3 hrs | Project Lead |

**Sprint Schedule (5-Day Plan):**

|  |  |  |
| --- | --- | --- |
| **Day** | **Sprint Goal** | **Planned Tasks (Backlog IDs)** |
| Day 1 | Project setup, data collection, cleaning | PB1, PB2, PB3 |
| Day 2 | EDA, feature selection, initial model training | PB4, PB5, PB6 |
| Day 3 | Model evaluation, tuning, backend API creation | PB7, PB8, PB9 |
| Day 4 | UI design and full system integration | PB10, PB11, PB12 |
| Day 5 | Deployment, documentation, and final demo | PB13, PB14 |

**Effort Estimation Summary:**

|  |  |
| --- | --- |
| **Metric** | **Value** |
| Total Estimated Effort | 59 hours |
| Team Size | 4 members |
| Daily Work Capacity/Member | 6 hours |
| Total Team Capacity (5 Days) | 5 × 6 × 4 = 120 hours |
| Available Buffer Time | 120 – 59 = 61 hours |

If it were a longer project with weekly sprints, you would calculate:

Velocity (per sprint)=Total Story Points Completed in a Sprint1 Sprint\text{Velocity (per sprint)} = \frac{\text{Total Story Points Completed in a Sprint}}{1 \text{ Sprint}}Velocity (per sprint)=1 SprintTotal Story Points Completed in a Sprint​

**Burndown Chart – Reference Links:**

1. Atlassian Agile Coach (Jira) – Burndown Charts  
   🔗 https://www.atlassian.com/agile/project-management/burndown-charts
2. Scrum.org – Tracking Progress with Burndown Charts  
   🔗 https://www.scrum.org/resources/what-is-a-burndown-chart
3. Mountain Goat Software – Agile Metrics and Velocity  
   🔗 https://www.mountaingoatsoftware.com/agile/scrum/burndown-charts
4. Scrum Alliance – Velocity in Agile Projects  
   🔗 https://resources.scrumalliance.org/Article/agile-velocity

**Reference:**

1. Atlassian. (n.d.). Burndown charts. Atlassian Agile Coach.  
   https://www.atlassian.com/agile/project-management/burndown-charts
2. Scrum.org. (n.d.). What is a Burndown Chart?  
   https://www.scrum.org/resources/what-is-a-burndown-chart
3. Mountain Goat Software. (n.d.). Burndown Charts.  
   https://www.mountaingoatsoftware.com/agile/scrum/burndown-charts
4. Scrum Alliance. (n.d.). Agile Velocity.  
   https://resources.scrumalliance.org/Article/agile-velocity
5. Vertex42. (n.d.). Burndown Chart Template for Excel.  
   https://www.vertex42.com/ExcelTemplates/burndown-chart.html

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