

Project Planning Phase

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

Date: 15 February 2025

Team ID: [Your Team ID]

Project Name: GrainPalette - A Deep Learning Odyssey In Rice Type Classification Through Transfer Learning

Maximum Marks: 5 Marks

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

Use the below template to create product backlog and sprint schedule

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	User Management Setup	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	3	High	Frontend Dev, Backend Dev
Sprint-1		USN-2	As a user, I will receive confirmation email once I have registered for the application	2	High	Backend Dev
Sprint-1		USN-4	As a user, I can register for the application through Gmail	3	Medium	Backend Dev
Sprint-1	Login	USN-5	As a user, I can log into the application by entering email & password	2	High	Frontend Dev, Backend Dev
Sprint-1	System Setup	USN-19	As an admin, I can manage user accounts	5	High	Backend Dev, Admin
Sprint-1		USN-30	As a system, I can maintain 99.9% uptime	5	High	DevOps, Backend Dev
Sprint-2	Image Processing	USN-7	As a user, I can upload a rice image for classification	5	High	Frontend Dev, ML Engineer
Sprint-2	Classification Engine	USN-10	As a user, I can get rice type classification results	8	High	ML Engineer, Backend Dev
Sprint-2		USN-21	As an admin, I can monitor model performance	3	High	ML Engineer, Admin
Sprint-2		USN-22	As an admin, I can update the classification model	5	High	ML Engineer, DevOps
Sprint-2		USN-28	As a system, I can process images within 3 seconds	5	High	ML Engineer, Backend Dev
Sprint-2	Registration Enhancement	USN-3	As a user, I can register for the application through Facebook	3	Medium	Backend Dev
Sprint-2	Password Management	USN-6	As a user, I can reset my password if I forget it	2	Medium	Backend Dev

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-3	Advanced Upload Features	USN-8	As a user, I can upload multiple rice images at once	5	Medium	Frontend Dev, Backend Dev
Sprint-3		USN-9	As a user, I can capture rice images using my device camera	4	Medium	Frontend Dev, Mobile Dev
Sprint-3	Enhanced Classification	USN-11	As a user, I can view detailed information about classified rice type	3	Medium	Frontend Dev, Content Manager
Sprint-3		USN-12	As a user, I can save classification results to my profile	3	Medium	Frontend Dev, Backend Dev
Sprint-3	Dashboard Development	USN-13	As a user, I can view my classification history	4	Medium	Frontend Dev, Backend Dev
Sprint-3	Admin Analytics	USN-20	As an admin, I can view system analytics	4	Medium	Frontend Dev, Backend Dev
Sprint-3		USN-23	As an admin, I can configure model parameters	3	Medium	ML Engineer, Admin
Sprint-3	Performance	USN-29	As a system, I can handle concurrent user requests	5	High	Backend Dev, DevOps
Sprint-4	Export & Search	USN-14	As a user, I can export my classification results	3	Low	Frontend Dev, Backend Dev
Sprint-4		USN-15	As a user, I can search through my classification history	4	Low	Frontend Dev, Backend Dev
Sprint-4	Expert Features	USN-16	As a rice expert, I can add new rice variety information	5	Medium	Frontend Dev, Backend Dev
Sprint-4		USN-17	As a rice expert, I can review and validate classification results	4	Medium	Frontend Dev, ML Engineer
Sprint-4	API Development	USN-25	As a developer, I can access classification API	5	Medium	Backend Dev, API Dev

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-4		USN-26	As a developer, I can authenticate API requests	3	Medium	Backend Dev
Sprint-4	Model Management	USN-24	As an admin, I can schedule model retraining	5	Low	ML Engineer, DevOps
Sprint-5	Expert Enhancement	USN-18	As a rice expert, I can suggest improvements to rice descriptions	3	Low	Frontend Dev, Content Manager
Sprint-5	API Monitoring	USN-27	As a developer, I can monitor my API usage	3	Low	Backend Dev, Admin
Sprint-5	Testing & Optimization	System Testing	Comprehensive system testing and performance optimization	8	High	QA Team, All Devs
Sprint-5	Documentation	Project Documentation	Complete user manuals and technical documentation	5	Medium	Tech Writer, All Devs
Sprint-5	Deployment	Production Deployment	Deploy to production environment with monitoring	5	High	DevOps, All Devs

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	20	10 Days	15 Feb 2025	26 Feb 2025	20	26 Feb 2025
Sprint-2	26	10 Days	27 Feb 2025	10 Mar 2025	24	12 Mar 2025
Sprint-3	23	10 Days	13 Mar 2025	24 Mar 2025	23	24 Mar 2025
Sprint-4	24	10 Days	25 Mar 2025	05 Apr 2025	22	07 Apr 2025
Sprint-5	21	10 Days	08 Apr 2025	19 Apr 2025	21	19 Apr 2025

Velocity Analysis:

Team Velocity Calculation:

- **Sprint-1 Velocity:** 20 points / 10 days = 2.0 points/day
- **Sprint-2 Velocity:** 24 points / 12 days = 2.0 points/day (adjusted for actual completion)
- **Sprint-3 Velocity:** 23 points / 10 days = 2.3 points/day
- **Sprint-4 Velocity:** 22 points / 12 days = 1.83 points/day (adjusted for actual completion)
- **Sprint-5 Velocity:** 21 points / 10 days = 2.1 points/day

Average Team Velocity:

Total Story Points Completed: 110 points

Total Days: 54 days

Average Velocity: $110 \div 54 = 2.04$ points/day

Sprint Velocity Trends:

- **Highest Velocity:** Sprint-3 (2.3 points/day) - Team hitting optimal performance
 - **Lowest Velocity:** Sprint-4 (1.83 points/day) - Complex API development challenges
 - **Velocity Stabilization:** Team maintaining consistent ~2.0 points/day average
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Burndown Chart Analysis:

Sprint-1 Burndown:

- **Day 1-3:** Setup and planning phase (18 points remaining)
- **Day 4-6:** Development momentum (12 points remaining)
- **Day 7-9:** Testing and integration (6 points remaining)
- **Day 10:** Sprint completion (0 points remaining)

Sprint-2 Burndown:

- **Day 1-4:** ML model integration challenges (22 points remaining)
- **Day 5-8:** Breakthrough in classification engine (14 points remaining)
- **Day 9-10:** Bug fixes and testing (2 points remaining)
- **Day 11-12:** Final completion with 2-day extension

Key Burndown Insights:

- **Sprint-1 & 3:** Ideal burndown curve achieved
- **Sprint-2 & 4:** Extended timelines due to technical complexity

- **Sprint-5:** Smooth execution with good velocity

Team Composition & Roles:

Role	Team Member	Responsibilities	Sprints Involved
ML Engineer	[Name]	Model development, training, optimization	All Sprints
Backend Developer	[Name]	API development, database, authentication	All Sprints
Frontend Developer	[Name]	UI/UX, web application, dashboard	All Sprints
Mobile Developer	[Name]	React Native app, camera integration	Sprint-3 onwards
DevOps Engineer	[Name]	Deployment, monitoring, infrastructure	Sprint-1, 2, 4, 5