**Project Planning Phase**

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| --- | --- |
| Date | 25 October 2023 |
| Team ID | Team-593212 |
| Project Name | Deep Learning Fundus Image Analysis For Early Detection Of Diabetic Retinopathy |
| Maximum Marks | 20 Marks |

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

**Product Backlog, Sprint Schedule, and Estimation**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Sprint | Functional Requirement (Epic) | User Story Number | User Story / Task | Story Points | Priority | Team Members |
| Sprint-1 | Project setup & Infrastructure | USN-1 | Set up the development environment using TensorFlow and implemented the ResNet-50 model for diabetic retinopathy detection. Collected and prepared the dataset from Kaggle. | 1 | High | Harish A S, Karthik Shankar |
|  |  | USN-2 | Gathered diverse patient retinal images representing 5 classes of diabetic retinopathy for model training. Preprocessed images, normalized pixel values, and split the dataset for training. | 2 | High | Harish A S, Karthik Shankar |
| Sprint-2 | Data collection | USN-3 | Preprocessed the dataset using TensorFlow, resizing images and normalizing pixel values. Split the dataset into training and validation sets for model training. | 2 | High | Harish A S, Karthik Shankar |
| Sprint-3 | Model development | USN-4 | Explored various deep learning architectures, specifically ResNet-50, for diabetic retinopathy classification. Selected and trained the model using TensorFlow, monitoring its performance on the validation set. | 3 | High | Harish A S, Karthik Shankar |
|  |  | USN-5 | Integrated the trained ResNet-50 model using an H5 file. Ensured seamless interaction between frontend (HTML, CSS, JS) and backend (Python Flask) for retinal image analysis. | 4 | High | Harish A S, Karthik Shankar |
| Sprint-4 | Model deployment & Integration | USN-6 | Implemented basic data augmentation techniques using TensorFlow, such as rotation and flipping, to enhance the model's robustness. Deployed the model as an API integrated into a user-friendly web interface. | 6 | Medium | Harish A S, Karthik Shankar |
| Sprint-5 | Testing & Quality Assurance | USN-7 | Conducted comprehensive testing of the model and web interface, identifying and addressing issues. Optimized model hyperparameters based on user feedback and testing results. Added medication, treatments, and feedback functionality. | 1 | Medium | Harish A S, Karthik Shankar |
|  |  | USN-8 | Incorporated user feedback to fine-tune the model and improve its accuracy. Added features for displaying recommended medications and treatments based on diagnosis. Implemented a feedback form for user suggestions. | 1 | Medium | Harish A S, Karthik Shankar |

**Project Tracker, Velocity & Burndown Chart:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Sprint | Total Story Points | Duration (Planned) | Sprint Start Date | Sprint End Date | Story Points Completed (as on Planned End Date) | Sprint Release Date (Actual) |
| Sprint-1 | 3 | 3 Days | 28-Oct-23 | 30-Oct-23 | 3 | 30-Oct-23 |
| Sprint-2 | 5 | 2 Days | 31-Oct-23 | 01-Nov-23 | 5 | 01-Nov-23 |
| Sprint-3 | 10 | 3 Days | 02-Nov-23 | 04-Nov-23 | 10 | 04-Nov-23 |
| Sprint-4 | 1 | 3 Days | 05-Nov-23 | 07-Nov-23 | 1 | 07-Nov-23 |
| Sprint-5 | 1 | 2 Days | 08-Nov-23 | 09-Nov-23 | 0 | 09-Nov-23 |

Average Velocity (AV) =Total Sprint Duration (in days) Total Story Points​

Based on the provided data, let's calculate the average velocity:

1. Total Story Points completed in all sprints = 3+5+10+1+1=203+5+10+1+1=20 story points
2. Total Sprint Duration (in days) = 3 days (Sprint-1)+2 days (Sprint-2)+3 days (Sprint-3)+3 days (Sprint-4)+2 days (Sprint-5)=133 days (Sprint-1)+2 days (Sprint-2)+3 days (Sprint-3)+3 days (Sprint-4)+2 days (Sprint-5)=13 days

Using the formula:

Average Velocity (AV)=20 story points13 days≈1.54 story points per dayAverage Velocity (AV)=13 days20 story points​≈1.54 story points per day

The team's average velocity is approximately 1.541.54 story points per day.















