# Project Planning Phase
# Project Milestone & Activity List

| Date | 23 October 2022 |
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| Team ID | PNT2022TMID11994 |
| Project Name | Project: Real – Time Communication System Powered by AI for Specially – Abled |
| Maximum Marks | 4 Marks |

**Milestone List:**

| Milestone Number | Milestone Name | Duration | Submission Dates |
|---|---|---|---|
| MN – 01 | Ideation Phase | 3 Weeks | 17 September, 2022 |
| MN – 02 | Project Design Phase – I | 2 Weeks | 01 October, 2022 |
| MN – 03 | Project Design Phase – II | 2 Weeks | 15 October, 2022 |
| MN – 04 | Project Planning Phase | 1 Week | 22 October, 2022 |
| MN – 05 | Project Development Phase | 3 Weeks | 19 November, 2022 |
| MN – 06 | Pre-requisites | 1 Week | 30 September, 2022 |
| MN – 07 | Project Structure | 1 Week | 02 October, 2022 |
| MN – 08 | Data Collection | 2 Days | 04 October, 2022 |
| MN – 09 | Image Pre-processing | 4 Days | 08 October, 2022 |
| MN – 10 | Model Building | 1 Week | 19 October, 2022 |
| MN – 11 | Test the model | 2 Days | 20 October, 2022 |
| MN – 12 | Application Building | 1 Week | 22 October, 2022 |
| MN – 13 | Train CNN Model on IBM | 2 Days | 30 October, 2022 |

**Activity List:**

| Milestone Number | Activity Number | Activity Name | Description | Submission Dates |
|---|---|---|---|---|
| MN – 01 | AN – 01 | Literature survey | Literature survey on the selected project & Information Gathering | 17 September, 2022 |
| | AN – 02 | Empathy Map | Empathize & Discover about the user. | 10 September, 2022 |
| | AN – 03 | Brain – Storming | Ideation, Brainstorming & Idea Prioritization for the project. | 17 September, 2022 |
| | AN – 04 | Problem Statements | Define the Problem Statement to understand your customer's point of view about the problem. | 10 September, 2022 |
| MN – 02 | AN – 05 | Proposed Solution | Describes the Problem Statement (Problem to be solved), Idea/ Solution description, Novelty/ Uniqueness, Social Impact/ | 24 September, 2022 |

| | | | Customer Satisfaction, Business Model (Revenue Model) and Scalability of the Solution of the project. | |
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| | AN – 06 | Problem Solution Fit | Prepare Problem Solution Fit document. | 01 October, 2022 |
| | AN – 07 | Solution Architecture | Bridge the gap between business problems and technology solutions. | 01 October, 2022 |
| MN – 03 | AN – 08 | Customer Journey Map | Prepare the customer journey maps to understand the user interactions & experiences with the application (entry to exit). | 08 October, 2022 |
| | AN – 09 | Solution Requirements | Describe the Functional & Non-functional Requirement for the Proposed Solution. | 15 October, 2022 |
| | AN – 10 | Data Flow Diagram | A visual representation of the information flows within a system, and provide information about right amount of the system requirement. Show how data enters and leaves the system and where data is stored. | 15 October, 2022 |
| | AN – 11 | Technology Stack | Describe Architectural Diagram, it's Components, Technologies used and Application Characteristics. | 15 October, 2022 |
| MN – 04 | AN – 12 | Prepare Milestone & Activity List | Prepare the milestones & activity list of the project | 22 October, 2022 |
| | AN – 13 | Sprint Delivery Plan | Describe about the Product Backlog, Sprint Planning, Stories, Story points using Agile Software Development Methodologies such as Scrum, JIRA etc. | 22 October, 2022 |
| MN – 05 | AN – 14 | Delivery of Sprint – 1 | Creating a standard Webpage. | 03 November, 2022 |
| | AN – 15 | Delivery of Sprint – 2 | Creating a user-friendly website. | 05 November, 2022 |
| | AN – 16 | Delivery of Sprint – 3 | Mobile and Desktop accessibility. | 12 November, 2022 |
| | AN – 17 | Delivery of Sprint – 4 | Adding new features. | 19 November, 2022 |
| MN – 06 | AN – 18 | Pre-requisites | Install the required software, it's supporting packages and create a project development environment. | 30 September, 2022 |
| MN – 07 | AN – 19 | Project Structure | Create the Project Structure for building Conversation Engine. | 02 October, 2022 |
| MN – 08 | AN – 20 | Data Collection | Collect data for building the project. | 04 October, 2022 |
| | AN – 21 | Create Train and Test Folders | Create Train and Test folders with each folder having folders with images of different hand signs | 06 October, 2022 |
| MN – 09 | AN – 22 | Image Pre-processing | We will pre-process the images which will be used for building the model. | 08 October, 2022 |
| | AN – 23 | Import Image Data Generator Library. | Generate batches of tensor image data with real-time data augmentation. | 10 October, 2022 |
| | AN – 24 | Apply Image Data Generator functionality. | Splitting the dataset for training and testing purpose in an appropriate ratio. | 12 October, 2022 |
| MN – 10 | AN – 25 | Import the required model building libraries | Add packages containing the appropriate functions and other entities for constructing the model. | 14 October, 2022 |

| | AN – 26 | Initialize the model | To initialize the model parameters and choosing an optimization algorithm. | 14 October, 2022 |
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| | AN – 27 | Add the convolution layer | Apply convolution operation by mentioning kernel size and stride. | 15 October, 2022 |
| | AN – 28 | Add the pooling layer | Perform the appropriate Average pooling and/or Max pooling layers and stride. | 15 October, 2022 |
| | AN – 29 | Add the flatten layer | Convert the multidimensional data to single dimensional data. | 16 October, 2022 |
| | AN – 30 | Adding the dense layers | Append single dimensional fully connected layers. | 17 October, 2022 |
| | AN – 31 | Compile the model | To define the loss function, optimizers, and metrics for prediction. | 18 October, 2022 |
| | AN – 32 | Fit and save the model. | Learn good values for all the weights and the bias from labelled examples. | 19 October, 2022 |
| MN – 11 | AN – 33 | Test the model | We test the model by passing an image to get predictions. | 20 October, 2022 |
| | AN – 34 | Import the packages and load the saved model. | Loading the user defined model to work for testing purpose. | 21 October, 2022 |
| | AN – 35 | Load the test image, pre-process it and predict. | Pre-processing an input image and passing it into the model to witness the predictions for the same. | 21 October, 2022 |
| MN – 12 | AN – 36 | Application Building | We will be building a Flask application that is used for building our UI which in backend can be interfaced to the model to get predictions. | 22 October, 2022 |
| | AN – 37 | Build a flask application. | <ul><li>Load the required packages.</li><li>Initialize graph, load the model, initialize the flask app and load the video. Graph element is required to work with TensorFlow.</li><li>Configure the home page.</li></ul> | 24 October, 2022 |
| | AN – 38 | Build the HTML page. | Build an HTML page to display the processed video on the screen, so that the person can show signs which can be detected. | 26 October, 2022 |
| MN – 13 | AN – 39 | Register for IBM Cloud. | We need to register for IBM Cloud to access the service. | 28 October, 2022 |
| | AN – 40 | Train CNN Model on IBM | <ul><li>Train your model on IBM Cloud.</li><li>Store your Model on IBM Cloud.</li><li>Download the Stored model to the Local system.</li></ul> | 30 October, 2022 |