PROJECT DESIGN PHASE - II

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| Date | 10October 2022 |
| Team ID | PNT2022TMID27968 |
| Project Name | Estimation of crop yield using data analytics. |
| Maximum Marks | 4 Marks |

**DATA FLOW DIAGRAM**

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.

**DFD Level-0**

The DFD Level-0 consists of two external entities, the User and the Output, along with a process, representing the Estimation of crop yield using data analytics.Output is obtained after prediction.

OUTPUT

ESTIMATION OF CROP YEILD

USER

PREDICTED DATA

DATA SETS

**DFD Level-1**

The DFD Level-1 consists of 2 external entities, the data processing and the Predictive Output, along with four process blocks and four predictive block stores. Agricultural data and the crop data store, representing the internal workings of the crop yield estimation. Data Processing block imports Agriculture data by analysing the uploaded dataset. Data Processing block imports the crop dataset and process it and sends it to block where test and train model is built. It sends object with probabilities to prediction of crop yield where predicted output are updated and accuracy of the crop yied data are obtained . Block trains and evaluates the model to generate output.

UPLOAD DATA SET

AGRICULTURE

DATA SET

DATA SET OBJECT WITH PROBABILITY

DATA SET

PROCESSED DATA

LAPTOP

CROP DATA

TRAIN AND TEST MODEL

DATA PREPROCESSING

FINAL PROCESSED DATASET

UPDATED MODEL

ML ALGORITHM

PREDICTION OF CROP YIELD

PREDICTED

OUTPUT

RESULT

ACCURACY

**DFD Level-2**

The DFD Level-2 for import data(figure 4) consists of two external data and one entity is laptop along with three process blocks, representing the three functionalities of the Estimation of crop yield using data analytics. It imports data from agricultural data store and stores on the system.

AGRICULTURAL DATA

DATASET

PROCESSED DATA

UPLOADED DATA

PREPARED DATA

LAPTOP

DATA PRE PROCESSING

DATA PREPARATION

CROP YEILD DATA SET STORE

**USER STORIES**

| **User Type** | **Functional Requirement (Epic)** | **User Story Number** | **User Story / Task** | **Acceptance criteria** | **Priority** | **Release** |
| --- | --- | --- | --- | --- | --- | --- |
| Customer (Mobile user) | Registration | USN-1 | As a user, I can register for the application by entering my email, password, and confirming my password. | I can access my account / dashboard | High | Sprint-1 |
|  |  | USN-2 | As a user, I will receive confirmation email once I have registered for the application | I can receive confirmation email & click confirm | High | Sprint-2 |
|  |  | USN-3 | As a user, I can register for the application through gmail or facebook | I can register & access the dashboard with Facebook Login | Medium | Sprint-2 |
|  | Login | USN-4 | As a user, I can log into the application by entering email & password | I can login to the application | High | Sprint-1 |
|  | Dashboard | USN-5 | Go to dashboard and refer the content about our project | I can read instructions also and the home page is user-friendly. | Low | Sprint-1 |
|  | Upload Dataset | USN-6 | As a user, I can able to input the agricultural datasets to the application | As a user, I can able to input the agricultural datasets to the application | High | Sprint-3 |
|  | Exploratory  Data Analysis | USN-7 | As a user I can able to get the recognised datasets as output from the agricultural datasets. | I can access the Exploratory Data Analysis- (Exploratory Data Analysis, or EDA, is the machine learning)  Understanding the patterns and trends in the data is the goal of data  exploration. All of the useful insights are drawn at this point, and the relationships between the  variables are recognized. | High | Sprint-3 |
|  | Build a ML model | USN-8 | As a user, I will train and test the datasets obtained from the agricultural datasets as input to get the maximum accuracy of output. | The Machine Learning Model is built using all of  the insights and patterns discovered during Data Exploration. The data set is always separated  into two parts, training data and testing data, at this stage. The model will be built and analyzed using the training data. The model's logic is based on the Machine Learning  Algorithm that is currently in use. | Low | Sprint-4 |
|  | Predict | USN-9 | As a user I can able to predict the model and then it is used to make predictions after it has been validated and modified. | I can able to predict the. Crop yield production based on user inputs and it is used to produce the accurate output | High | Sprint-3 |
| Customer (Web user) | Login | USN-10 | As a user, I can use the application by entering my email, password. | I can access my account | Medium | Sprint-4 |
| Customer Care Executive | Dashboard | USN-11 | upload the image | Recognize and get the output | High | Sprint-1 |
| Administrator | Security | USN-12 | updated the features | checking the security | Medium | Sprint-2 |