**Awareness Simulator:**

This module encompases of creating awareness amongst farmers who may find it difficult to visit government sites to know about the latest schemes and services announced by the government for the welfare of the farmers. This module scrapes all those government sites for the data, converts it to the native regional language of the farmer, and displays it as a notification in the mobile device in real time. This module also uses the text-to-speech api provided by Google to make sure the announcements can be heard as well, thereby increasing the usability.

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| **Feature** | **Algorithm / Package** |
| Web Scraping | BeautifulSoup Package in Python |
| Text-to-Speech | Google Text-to-Speech API |

**Profit Escalator:**

This module encompasses the functionalities namely crop suggestion and farm maintenance. The farmer/any helper needs to input informations such as the size of the farm, previous crop that has been sown,soil condition and such data will be used to predict the best suitable crop.Along with the crop combination, the profit he would gain will also be predicted and is suggested to the farmer.

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| **Feature** | **Algorithm** |
| Crop Suggestion | Polynomial Regression |

**FARM MAINTENANCE:**

This module is where the farmer needs to take a video of the farm or the tractor. The video in the server side will be processed to identify leaves, soil condition and various tractor implements. Once the frames have been identified they will be used as an input to predict for any crop disease prevailing in the crop, soil condition monitoring and as well as implement wear monitoring. Along with these, fertilisers that can be used to protect the farm for the suggested crop is also recommended. Weather data based predictions is also provided to the farmer to make him plan in advance.

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| **Feature** | **Algorithm** |
| Leaf,Soil,Implement Detection | Template Matching and Contour Detection |
| Crop Disease Identification | Convolutional Neural Networks |
| Implement Wear Monitoring |
| Fertiliser Recommendation | Recommender Systems |
| Weather Prediction | Google Weather API |

**DEMAND SUPPLY MAPPING:**

When the harvest period is approaching the data that has been collected from the farmers side is used and coherent buyers for his produce is mapped. The is done using dijkstra algorithm to find the shortest path between the demand and supply and thereby reducing the transport and miscellaneous cost for the farmer. The rate is decided based on government standards thereby eliminating the middleman completely and maximising the profit.