**IDEATION PHASE**

**LITERATURE SURVEY**

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| Date | 07 October 2022 |
| Team ID | PNT2022TMID51052 |
| Project Name | Project – AI Powered Food Demand Forecasting |
| Maximum Marks | 4 Marks |

**DemandEst - AI powered Food Demand Forecaster**

**TITLE**: Demand Forecasting for production planning in a food company

**AUTHOR**: Nathalia Barbosa , Kelly Alonso Costa

**YEAR**: Jan-2015

Food demand in bevarage industry

The food products have a factor that limits the maintenance of stocks, the short perishability. These products have a period in which they keep their characteristics and should be consumed before being considered unsuitable for consuming. Thus, it is suggested for future works that the short perishability of products must be taken into account when evaluating the results obtained by the quantitative methods. To make possible not only plan the production to satisfy the forecasted demand, but also contribute to minimize the loss of products due to its short perishability and consequently, improving the profitability of the company.

**TITLE**: Demand forecasting in restaurants using machine learning and statistical analysis.

**AUTHOR**: Takashi Tanizaki,Tomohiro Hoshino ,Takeshi Shimmura,Takeshi Takenaka

**YEAR**: 2018

In the paper, demand forecasting in restaurants using machine learning is proposed. Many researches have been proposed on demand forecasting innovation utilizing POS information. However,in order to make demand forecasts at a genuine store, it is important to lay out a store-explicit demand forecasting model in light of different factors, for example, the store area, the climate, occasions and so on .Thus, we developed an demand forecasting model that practically consolidates the previously mentioned information utilizing machine learning.

In this paper ,the interest determining model utilizing AI and the check consequence of the model utilizing genuine store information is examined. In this paper, demand forecasting techniques utilizing inner information, for example, POS information and outside information in the omnipresent climate like climate, occasions, and so on are proposed. we utilize Bayesian Straight Relapse, Helped Choice Tree Relapse, Choice Backwoods Relapse and Stepwise technique as the demand forecasting strategy. There was no huge distinction in the determining rate utilizing the strategy for Bayesian, Choice, and Stepwise, and the forecasting rate of Helped was somewhat low. The ﬁgure rate of any store surpassed around 85%.

**TITLE**: Reducing fresh fish waste while ensuring fish availability.

**AUTHOR**: Vera Lucia Migueis , Joao Pereira

**YEAR**: May - 2022

In recent years, retailers have used advanced methods of collecting data to gain more information about their customers and their buying behavior. This data collection has promoted a huge opportunity for improving operations. Thus, retailers have concentrated on developing more accurate forecasting models that help them make decisions that are more data-driven and less intuition-based.

**TITLE**: Demand Forecasting For Production Planning In a Food Company.

**AUTHOR**: N. de P. Barbosa, E.da S.Christo, and K. A. Costa

**YEAR**: 2015

The food and beverage industry is one of the main areas of the Brazilian economy, with a huge cooperation in Gross domestic product list. The Brazilian economy has been showing an overall solidness somewhat recently, which takes the business interest to be more unsurprising. Because of this situation of monetary solidness, the organizations has been stressed over putting resources into arranging their activities, making use, principally, of forecasting techniques to turn out to be more serious on the lookout. On account of food industry, the occasional and the short perishability factors are a constraint to the upkeep of stocks, requiring a forecasts with a high exactness level. The current work comprises in applying techniques to estimate the interest for results of a food industry, which guides its deals to the food administration market, to base the short to medium term creation arranging. Posteriorly, the forecast will be assessed utilizing the blunder measure MAPE and contrasted with the interest presently thought to be by the organization. The proposed techniques highlight a decrease of the mistake roughly 5%. The technique applied in this work showed its straightforwardness and openness because of the minimal expense and effortlessness of use. By having these attributes, this strategy can be utilized by little and medium-sized organizations, where is preposterous to expect to make immense interests in arranging their tasks. The food items have a component that restricts the support of stocks, the short perishability. These items have a period wherein they keep their qualities and ought to be consumed prior to being viewed as unacceptable for consuming. Hence, it is recommended for future works that the short perishability of items should be considered while assessing the outcomes got by the quantitative techniques. To make conceivable not well thought out plan the creation to fulﬁll the anticipated interest, yet additionally add to limit the deﬁciency of items because of its short perishability and subsequently, working on the beneﬁt of the organization.

**TITLE**: Flexible Demand Forecasting in Intelligent Food Supply Chain Management.

**AUTHOR**: Srimathi Ravisankar,Kanimozhi Mahendran,Srilakshmi Arulmurugan M.R. Sumalatha

**YEAR**: 2022

In the Food industry, Big data analytics concepts and techniques are being used in the food business for inventory optimization, which combines historical data with predictive techniques to improve supply chain management techniques. Demand forecasting, food tracing, and information exchange for suppliers, warehouses, and restaurants to connect with one another are the three modules covered in this paper that deal with managing the food supply chain. In this paper, a novel algorithm for the demand forecasting module is proposed. It combines an outlier detection method with the Light GBM Regressor, which manages the target, and the SARIMA Algorithm, which handles data seasonality. This paper also suggests a Food Tracing System (Find my Food) that employs the Nakamoto Consensus method for network participants to agree on issues such as traditional data invisibility, data manipulation, and sensitive information exposure, as well as an information sharing module between supply chain entities using a database where they can share about food quality issues, share information about stock and requirement details of the ingredients needed for pre-production.This method of incorporating an information sharing module into the supply chain