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SAI VIDYA INSTITUTE OF TECHNOLOGY
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DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING
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Project Proposal Reference No.: 46S_BE_3055

Title of the Project: "Implementation of Augmented Reality to Boost Restaurant Sales"

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Keywords: Augmented Reality(AR), 3D Modelling, MVC, Web App

Introduction: Tyler Cowen once quoted that "Food is a product of supply and demand, so try to figure out where the supplies are fresh, the suppliers are creative, and the demanders are informed. This web application focuses to give an interactive user interface food menu to order with 3D models of food using Augmented Reality (AR). It makes the process of previewing the food much more interactive and unique, which enables the user to view the 3D model before ordering the food. Users get to experience a combination of digital data and the real world. This web application also provides separate login pages such as Admin login page to change prices of food items and for Customer login page, to view the restaurant menu pages. Through this web application, it can digitalize the food industry, to make it more attractive. Since this application gives a 360-degree view of food, it can gradually increase restaurant sales. It also helps the user in giving a better understanding of the quality and the ingredients of the food products used in them as every individual wants to eat healthy and tasty food.

Scope / Objectives of the project:

- User can view the 3D objects of food in his/her device itself.
- In this web application, there is a feature of admin login, where restaurant owners can change the price of food items.
- Customers can get to know about ingredients used in food to be ordered by just viewing the 3D models of the food using Augmented Reality after register/login.

Methodology:

Module 1: Understanding Web AR Technologies

- Understanding WebXR API
- ARCore and ARKit technology
- Introducing WebXR to the web page

Module 2: Collecting Resources

- Designing the web app using CSS
- Finding suitable open-source 3D model resources
- Embedding 3D model resources with web app using AR libraries

Module 3: Designing Restaurant Menu

- Making the responsive web design using CSS
- Setting up the web app on local server using Xampp
- Testing and debugging the web app responsive

Module 4: Building Restaurant Menus with Login Functionality

- Building a basic login page and ingredients button using HTML PHP and MySQL
- Testing the web app on local host
- Finding suitable open source .glb format 3D models
- Repeating module 2 and 3 for more restaurants

Module 5: Implementation of Overall Web Application

- Implemented Admin Login Functionality.
- Packing all the resources and web pages (Login page, Register page, Admin Login page, Restaurant Menu pages) into one entity.

Result of the Project:

In this web application, users can view the 3D food objects right in front of them just by pointing their smartphone to a plane surface. Any device which either supports ARCore or ARKit can easily run this web application smoothly. Users can register themselves and then can login to visit the restaurant menu pages. This web application also has an Admin Login functionality, where prices of the food items can be changed by the restaurant owners.