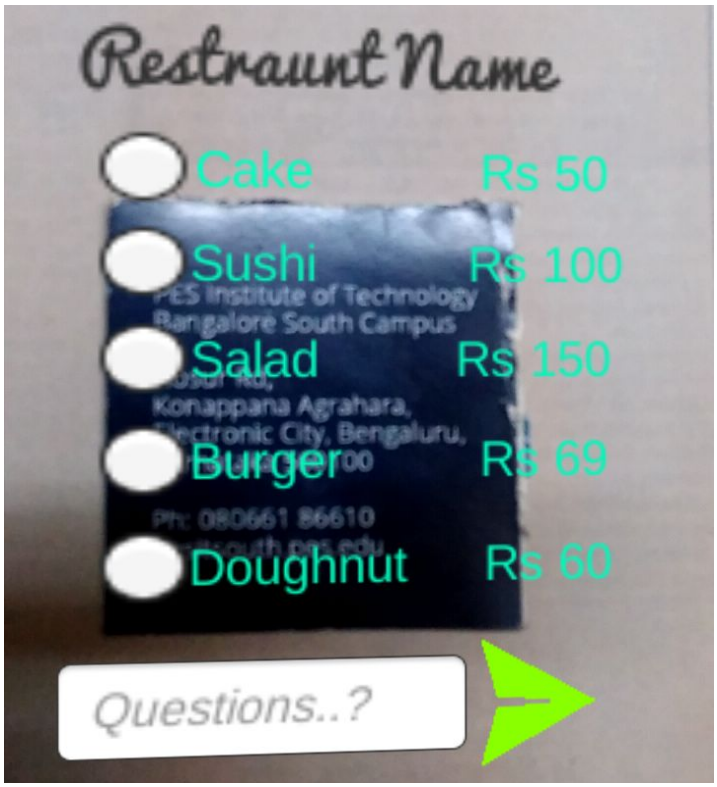
shARe



COMPUTER NETWORKING PROJECT

CSE - 5A

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ABSTRACT

shARe is a augmented reality mobile application that allows customers dining at a restaurant to view 3D models of the cuisines and dishes served by the restaurant right from their table, order items through the application and also communicate with the waiters and staff, all while sitting at his own table, thus helping in automating the waiter's work at the restaurant.

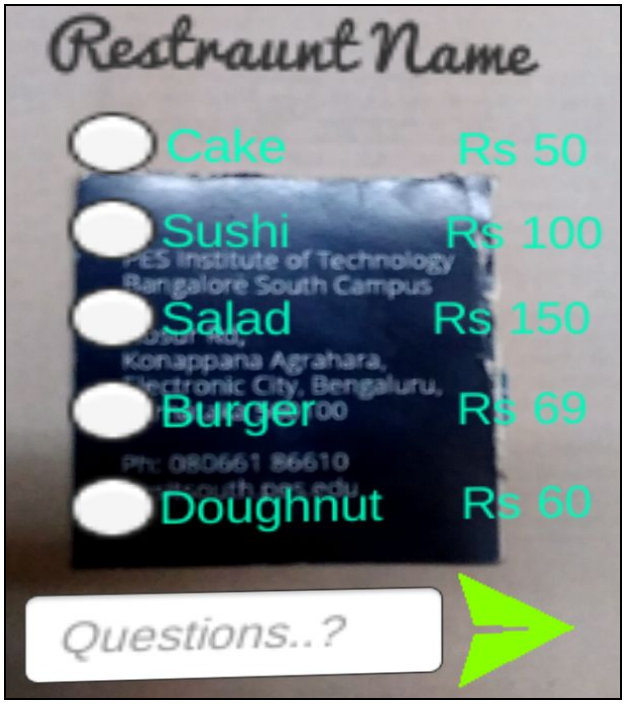
shARe uses image recognition and graphics to render a user interface in augmented reality, giving the user a richer and more memorable experience at the restaurant.Upon interacting with the application, data is sent from the mobile application using POST requests, to a HTTP server running on the terminal of the restaurant where the crew will be able to see details about the orders placed by the particular diner seated at a specific table in the restaurant.

The front - end of the application is built using Unity 3D, which is a 3D game engine used for building cross platform applications and games. The programming language used is C# and the code is compiled with the help of visual studio. Vuforia is a SDK for unity that allows us to perform image recognition and augmentation inside the application. The back - end of the application is a HTTP server built using Flask, which is a web development framework for python.

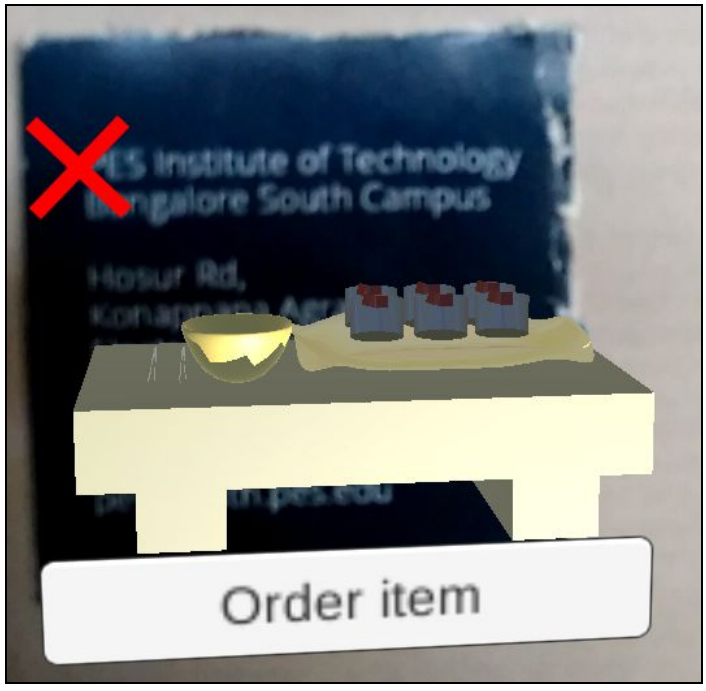
FLASK - SERVER PROGRAM

```
from flask import Flask, jsonify, request
from nltk.tokenize import word_tokenize
import os

app = Flask(__name__)

@app.route('/')
def index():
    return "hello world"

@app.route('/addToCart', methods = ["POST"])
def addToCart():
    req_json = request.json
    table_id = req_json['TABLE_ID']
    dish_name = req_json["DISH_NAME"]
    price = req_json["PRICE"]

    print("table "+str(table_id)+" has ordered a "+dish_name+" at Rs."+ str(price))
    f = open("table"+str(table_id)+'.txt','a')
    f.write('\n' + dish_name+ " "+str(price))
    f.close()
    return "hello world"

@app.route('/getCart')
def getCart():
    return "cart"

if __name__ == '__main__':
        app.run(debug=True, host='0.0.0.0', port=int("8080"))
```

RESULTS:



Restaurant menu



Sushi item on the menu

Cake item on the menu

```
Windows PowerShell
PS G:\projects\shARe> python shAReServer.py
 * Restarting with stat
 * Debugger is active!
 * Debugger PIN: 168-413-402
 * Running on http://0.0.0.0:8080/ (Press CTRL+C to quit)
table 74 has ordered a Cake at Rs.50
127.0.0.1 - - [27/Nov/2017 10:45:17] "POST /addToCart HTTP/1.1" 200 -
table 74 has ordered a Cake at Rs.50
127.0.0.1 - - [27/Nov/2017 10:45:18] "POST /addToCart HTTP/1.1" 200 -
table 74 has ordered a Sushi at Rs.100
127.0.0.1 - - [27/Nov/2017 10:45:20] "POST /addToCart HTTP/1.1" 200 -
table 74 has ordered a Sushi at Rs.100
127.0.0.1 - - [27/Nov/2017 10:45:20] "POST /addToCart HTTP/1.1" 200 -
table 74 has ordered a Salad at Rs.150
127.0.0.1 - - [27/Nov/2017 10:45:22] "POST /addToCart HTTP/1.1" 200 -
table 74 has ordered a Salad at Rs.150
127.0.0.1 - - [27/Nov/2017 10:45:23] "POST /addToCart HTTP/1.1" 200 -
```

Orders that have been placed displayed at restaurant's terminal