Case Study

Impressed by your programs implemented in Assessment 2, the stakeholders of the restaurant have asked you to develop a program extending Assessment 2. In this assessment, you will have to use the Object Orientated Programming (OOP) paradigm. Please, read the following case study with a fresh mind, as it is NOT the same as the one in Assessment 2.

This program should enable the logged in user to place orders through the App. In response to the covid safety measures, the restaurant is offering the customers the following possibilities of contact-less placing of orders:
1- Dine in: While at restaurant users place contactless orders. Users have to pay additional service charges to their orders.
2- Pick up: users place remote orders to be picked up either to save the delivery costs or because the restaurant does not deliver to their address. Delivery: users place remote orders and have them delivered to their address. Users have to pay extra delivery charges.

The program should follow the below general structure:
When a user runs the program, the below choices should be provided:
1- Sign up
2- Login: upon successful login the users can then do the following.
   a. **Ordering (Dine in, Takeaway, Delivery),**
   b. **Print Statistics**
   c. **Logout**
3- Exit

Output:

```
Please Enter 1 for Signup.
Please Enter 2 for Login.
Please Enter 3 for Exit.
```

Task 1.   Signup/Login Process for Customers
A user should sign up to use the services provided by the app. Before placing an order, the user should successfully login to the application. Please create a signup and a login function while making use of your assessment 2 code.

1. **Signup**

    Step 1: Each Customer is advised to submit the required details for signup process.
    a. *The mobile number has 10 digits starting with 0.*
    b. *The Password must initiate with alphabets followed by either one of @,#, $ and ending with numeric. (For Example: Sam@0125)*
    c. *The password confirmation matches the initial entered password.*
    d. *The DOB is in the format DD/MM/YYYY*
    e. *The user is at least 18 years old. The age should be calculated based on the year entered in the DOB (Only consider year).*

    Note: If any of the above-mentioned condition is not fulfilled; the sign-up process should fail, and a descriptive message should be displayed for the user explaining what has gone wrong and providing hints on the correct expected input. The program should keep asking the user to re-enter his details as long as one or more of the input fields are not correctly filled. If all fields are completed successfully, the program should stop asking the user to re-enter his details and display a message that the signup process is completed successfully.

    If all of the above-mentioned conditions are successful, the user data is saved in Lists to enable data checks during the login process.

    Step 2: There is an additional field for entering the address, (Optional)
    Step 3: Submit
    Step 4: A message of Signup Successful must be displayed.

        Output:

```
Please enter your name:XXX

Please enter your address or press enter to Skip.

Please enter your mobile number.0111111111

Please enter your Password:X@11

Please enter your Password:X@11

Please Enter your Date of Birth # DD/MM/YYYY (No Space)11/11/1988
You have Successfully Signed up.
```

2. **Log in**

   Step 1: Each customer is advised to enter the login id and password for the sign in,

   Step 2: Post Successful Login the User must be presented with a variety of options to Proceed (Home Page):

   2.1 Ordering (Dine in, Click and collect, Delivery),
   2.2 Summary of Transactions
   2.3 Logout

   Output:

```
Please enter your Username (Mobile Number):0111111111

Please enter your password:X@11
You have successfyully Signed in
 Please Enter 2.1 to Start Ordering.
 Please Enter 2.2 to Print Statistics.
 Please Enter 2.3 for Logout.
```

Task 2: Ordering

Post Selecting the Option of 2.1 the User must be taken to the Ordering Page. In the ordering page, the following options should be offered:

   1. Dine in
   2. Order Online
   3. Go To Login Page

   Output:

```
2.1
 Please Enter 1 for Dine in.
 Please Enter 2 for Order Online.
 Please Enter 3 to go to Login Page.
```

In case of Selecting the Option 2, the User must be taken to the next page, where the following options should be offered:

1 Self-Pickup
2 Home Delivery
3 Go To Previous Menu

Output:

```
Enter 1 for Self Pickup.
Enter 2 for Home Delivery.
Enter 3 to go to Previous Menu.
```

After the user successfully selects the ordering mode, the user should be presented with the menu in the form of:

ID	Name	Price
1	XXXX	XX
2	XXXX	XX
3	XXXX	XX
4	XXXX	XX
5	XXXX	XX
6	XXXX	XX
7	Checkout	

Output:

```
1
Enter 1  for Noodles     Price AUD 2
Enter 2  for Sandwich    Price AUD 4
Enter 3  for Dumpling    Price AUD 6
Enter 4  for Muffins     Price AUD 8
Enter 5  for Pasta       Price AUD 10
Enter 6  for Pizza       Price AUD 20
Enter 7 for Drinks Menu:
```

Please note:

- The menu will only have 6 items for the Click and collect and delivery modes.
- If **dine in mode** is selected the user menu should **have 6 items followed by 3 drinks items presented after the Food Menu.**
- The user should be able to order as many items as they wish. To close the Food menu and proceed to the Drink Menu the user needs to selects option 7.

Output:

```
7
Enter 1  for Coffee      Price AUD 2
Enter 2  for Colddrink   Price AUD 4
Enter 3  for Shake       Price AUD 6
Enter 4 for Checkout:
```

- To close the Drink Menu and proceed to the Checkout the user needs to select option 4.
- Post Checkout the user must be advised with the total amount needed to be paid.
- The user will then be provided with three options:
  - Proceed with payment
  - Cancel order

Output:

```
Please Enter Y to proceed to Checkout or
 Enter N to cancel the order:
```

Note: User must not be allowed to proceed for the Delivery option if the user has not mentioned their address during the signup process and must be asked to add the same before proceeding for the delivery or taken back to the Ordering Menu to select other option.

Output:

```
You have not mentioned your address, while signing up.
Please Enter Y if would like to enter your address.
Enter N if you would like to select other mode of order.
```

A- Calculation for the Amount Need to be paid:
  1- Dine in mode:
    Dine in has an additional 10% service Charges to be added additionally in the Invoice.

    Output:

```
4
Your total payble amount is: 44.0 inclusing AUD 4.0 for Service Charges
```

2- Click and Collect mode:
*No additional Charges for **click and collect***

3- Delivery mode:
*A **fix charges for Delivery** based on the distance i.e.*
More than 0 to 2 Kms AUD 5
More than 2 to 5 Kms AUD 10
More than 5 to 10 Kms   AUD 18
More than 10Kms   No Delivery provided

Output:
```
7
Your total payble amount is: 6 and there will be an additional charges for Delivery.
```

B- Proceeding with the Order

If the user decides to proceed with the order, the user is requested to insert further details based on their selected ordering mode as follows:

For Dine in:
- Number of Persons:
- Date of Visit: DD/MM/YYYY
- Time of Visit: HH:MM

Output:
```
Please enter the Date of Booking for Dine in:12/11/2022

Please enter the Time of Booking for Dine in:16:00

Please enter the Number of Persons:5
Thank You for entering the details, Your Booking is confirmed.
```

For Pick up:
- Date of Pickup: DD/MM/YYYY
- Time of Pickup: HH:MM
- Name of Person Picking up:

Output:

```
Please enter the Date of Pick up:12/11/2022

Please enter the Time of Pick up:17:00

Please enter the Name of the Persons:XXXXX
Thank You for entering the details, Your Booking is confirmed.
```

Delivery:
- Date of Delivery:
- Time of Delivery:
- Distance from the Restaurant (In Kms):

Output:
```
Please enter the Date of Delivery:12/11/2022

Please enter the Time of Delivery:18:00

Please enter the Distance from the restaurant:8
Thank you for your Order, Your Order has been confirmed.
```

Notes:
- *If the distance from the restaurant is more than the applicable limits, then the user must be provided with the option to **Pick up** the Order.*

- Once the details have been successfully entered, user must be provided with a confirmation message with the order number.

- "Your order has been confirmed, and your order id is 'A001' "

- Then the user must be taken to the Main menu.

Task 3: Summary of Transactions

A user must be shown an option to see the history of its previous orders in:

Output:
```
2.2
 Please Enter the Option to Print the Statistics.
 1 - All Dine in Orders.
 2 - All Pick up Orders.
 3 - All Deliveries.
 4 - All Orders (Descedingly).
 5 - Total Amount Spent on All Orders.
 6 - To go to Previous Menu.
```

Option 1: All Dine in orders
Output:

| Order ID | Date | Type of Order | Order Amount |

Option 2: All Pickup Orders

Output:

| Order ID | Date | Type of Order | Order Amount |

Option 3: All Deliveries

Output:

| Order ID | Date | Type of Order | Order Amount |

Option 4: All Orders in Descending order (based on Order ID)

Output:

| Order ID | Date | Type of Order | Order Amount |

Option 5: Total Amount Spent (All Type of Orders i.e. Dine in, Deliveries and Pickups)

Output:

```
Total amount spent on all orders AUD: 56.0
```

Option 6: Go to Previous Menu