**Assignment 5**

**Restaurant Management System**

**Code**

import 'dart:io';

void main() {

  List<Map<String, dynamic>> menu = [

    {'name': 'Pizza', 'price': 10, 'quantity': 0},

    {'name': 'Burger', 'price': 5, 'quantity': 0},

    {'name': 'Pasta', 'price': 8, 'quantity': 0},

    {'name': 'Salad', 'price': 6, 'quantity': 0}

  ];

  List<Map<String, String>> adminUsers = [

    {'username': 'admin1', 'password': 'admin1pass'},

    {'username': 'admin2', 'password': 'admin2pass'}

  ];

  List<Map<String, String>> customerUsers = [

    {'username': 'customer1', 'password': 'customer1pass'},

    {'username': 'customer2', 'password': 'customer2pass'}

  ];

  List<Map<String, dynamic>> bookings = [];

  bool isRunning = true;

  bool isAdmin = false;

  Map<String, String>? currentUser;

  List<bool> isTableAvailable = [true, true, true, true, true];

  int maxTables = 5;

  int bookingDurationInMinutes = 60;

  while (isRunning) {

    if (currentUser == null) {

      print('----- Restaurant Management System -----');

      print('1. Login as Admin');

      print('2. Login as Customer');

      print('3. Register as Customer');

      print('4. Exit');

      print('---------------------------------------');

      stdout.write('Enter your choice: ');

      String? choice = stdin.readLineSync();

      if (choice != null) {

        if (choice == '1') {

          print('\nAdmin Login:');

          stdout.write('Username: ');

          String? username = stdin.readLineSync();

          stdout.write('Password: ');

          String? password = stdin.readLineSync();

          if (username != null && password != null) {

            currentUser = adminUsers.firstWhere(

                (user) => user['username'] == username && user['password'] == password,

                orElse: () => {});

            if (currentUser.isNotEmpty) {

              isAdmin = true;

              print('\nWelcome, ${currentUser['username']}!\n');

            } else {

              print('Invalid username or password. Please try again.\n');

            }

          }

        } else if (choice == '2') {

          print('\nCustomer Login:');

          stdout.write('Username: ');

          String? username = stdin.readLineSync();

          stdout.write('Password: ');

          String? password = stdin.readLineSync();

          if (username != null && password != null) {

            currentUser = customerUsers.firstWhere(

                (user) => user['username'] == username && user['password'] == password,

                orElse: () => {});

            if (currentUser.isNotEmpty) {

              isAdmin = false;

              print('\nWelcome, ${currentUser['username']}!\n');

            } else {

              print('Invalid username or password. Please try again.\n');

            }

          }

        } else if (choice == '3') {

          print('\nCustomer Registration:');

          stdout.write('Username: ');

          String? username = stdin.readLineSync();

          stdout.write('Password: ');

          String? password = stdin.readLineSync();

          if (username != null && password != null) {

            customerUsers.add({'username': username, 'password': password});

            print('\nRegistration successful. You can now login as a customer.\n');

          }

        } else if (choice == '4') {

          isRunning = false;

        } else {

          print('Invalid choice. Please try again.\n');

        }

      }

    } else {

      print('----- Restaurant Management System -----');

      if (isAdmin) {

        print('1. View Orders');

        print('2. View Bookings');

      } else {

        print('1. View Menu');

        print('2. Add Item to Order');

        print('3. View Order');

        print('4. Checkout');

        print('5. Book a Table');

      }

      print('6. Logout');

      print('7. Exit');

      print('---------------------------------------');

      stdout.write('Enter your choice: ');

      String? choice = stdin.readLineSync();

      if (choice != null) {

        if (isAdmin) {

          if (choice == '1') {

            print('\nOrders:');

            for (int i = 0; i < menu.length; i++) {

              if (menu[i]['quantity'] > 0) {

                print('${menu[i]['name']} - Quantity: ${menu[i]['quantity']}');

              }

            }

            print('');

          } else if (choice == '2') {

            print('\nBookings:');

            DateTime now = DateTime.now();

            for (int i = 0; i < bookings.length; i++) {

              Map<String, dynamic> booking = bookings[i];

              DateTime bookingTime = booking['bookingTime'];

              int tableNumber = booking['tableNumber'];

              if (bookingTime.isBefore(now)) {

                // If booking time is in the past, mark the table as available again

                isTableAvailable[tableNumber - 1] = true;

              }

              print('Username: ${booking['username']}, Table Number: $tableNumber, Time: ${bookingTime.toString()}');

            }

            print('');

          } else if (choice == '6') {

            currentUser = null;

            isAdmin = false;

            print('\nLogged out successfully.\n');

          } else if (choice == '7') {

            isRunning = false;

          } else {

            print('Invalid choice. Please try again.\n');

          }

        } else {

          if (choice == '1') {

            print('\nMenu:');

            for (int i = 0; i < menu.length; i++) {

              print('${i + 1}. ${menu[i]['name']} - \$${menu[i]['price']}');

            }

            print('');

          } else if (choice == '2') {

            stdout.write('Enter item number: ');

            String? itemNumberInput = stdin.readLineSync();

            if (itemNumberInput != null) {

              int itemNumber = int.tryParse(itemNumberInput) ?? 0;

              if (itemNumber >= 1 && itemNumber <= menu.length) {

                stdout.write('Enter quantity: ');

                String? quantityInput = stdin.readLineSync();

                if (quantityInput != null) {

                  int quantity = int.tryParse(quantityInput) ?? 0;

                  if (quantity >= 1) {

                    menu[itemNumber - 1]['quantity'] += quantity;

                    print('Item added to order.');

                  } else {

                    print('Invalid quantity. Please try again.');

                  }

                }

              } else {

                print('Invalid item number. Please try again.');

              }

              print('');

            }

          } else if (choice == '3') {

            print('\nOrder:');

            for (int i = 0; i < menu.length; i++) {

              if (menu[i]['quantity'] > 0) {

                print('${menu[i]['name']} - Quantity: ${menu[i]['quantity']}');

              }

            }

            print('');

          } else if (choice == '4') {

            double total = 0;

            print('\nOrder Summary:');

            for (int i = 0; i < menu.length; i++) {

              if (menu[i]['quantity'] > 0) {

                double itemTotal = menu[i]['price'] \* menu[i]['quantity'].toDouble();

                total += itemTotal;

                print('${menu[i]['name']} - Quantity: ${menu[i]['quantity']}, Subtotal: \$${itemTotal.toStringAsFixed(2)}');

              }

            }

            print('Total: \$${total.toStringAsFixed(2)}\n');

            isRunning = false;

          } else if (choice == '5') {

            DateTime now = DateTime.now();

            stdout.write('Enter table number: ');

            String? tableNumberInput = stdin.readLineSync();

            if (tableNumberInput != null) {

              int tableNumber = int.tryParse(tableNumberInput) ?? 0;

              if (tableNumber >= 1 && tableNumber <= maxTables) {

                if (isTableAvailable[tableNumber - 1]) {

                  DateTime bookingTime = now.add(Duration(minutes: bookingDurationInMinutes));

                  bookings.add({'username': currentUser['username'], 'tableNumber': tableNumber, 'bookingTime': bookingTime});

                  isTableAvailable[tableNumber - 1] = false; // Mark the table as unavailable

                  print('\nTable ${tableNumber} booked successfully. Enjoy your meal!\n');

                } else {

                  print('\nTable ${tableNumber} is already reserved. Please choose another table or try again later.\n');

                }

              } else {

                print('Invalid table number. Please try again.\n');

              }

            }

          } else if (choice == '6') {

            currentUser = null;

            isAdmin = false;

            print('\nLogged out successfully.\n');

          } else if (choice == '7') {

            isRunning = false;

          } else {

            print('Invalid choice. Please try again.\n');

          }

        }

      }

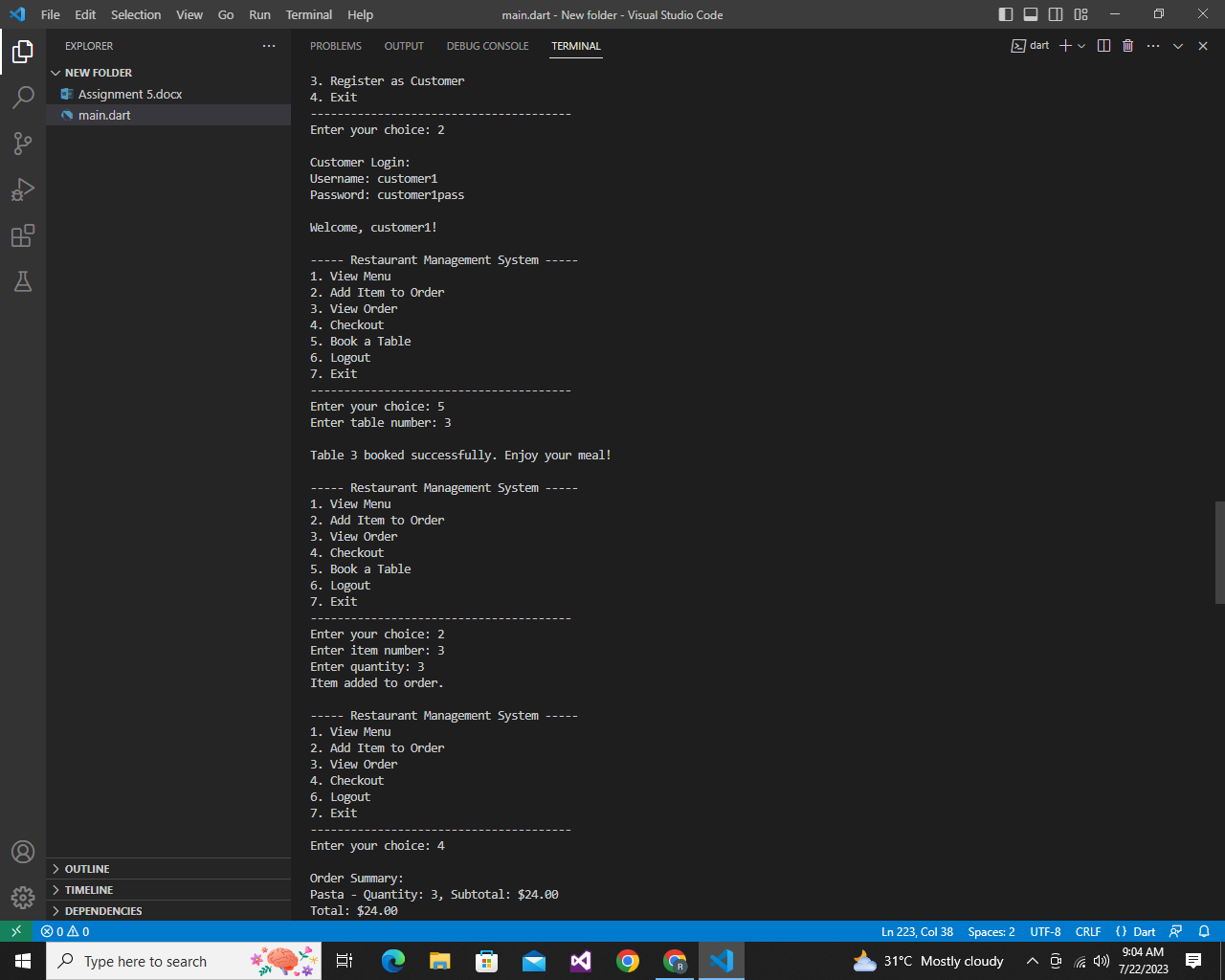
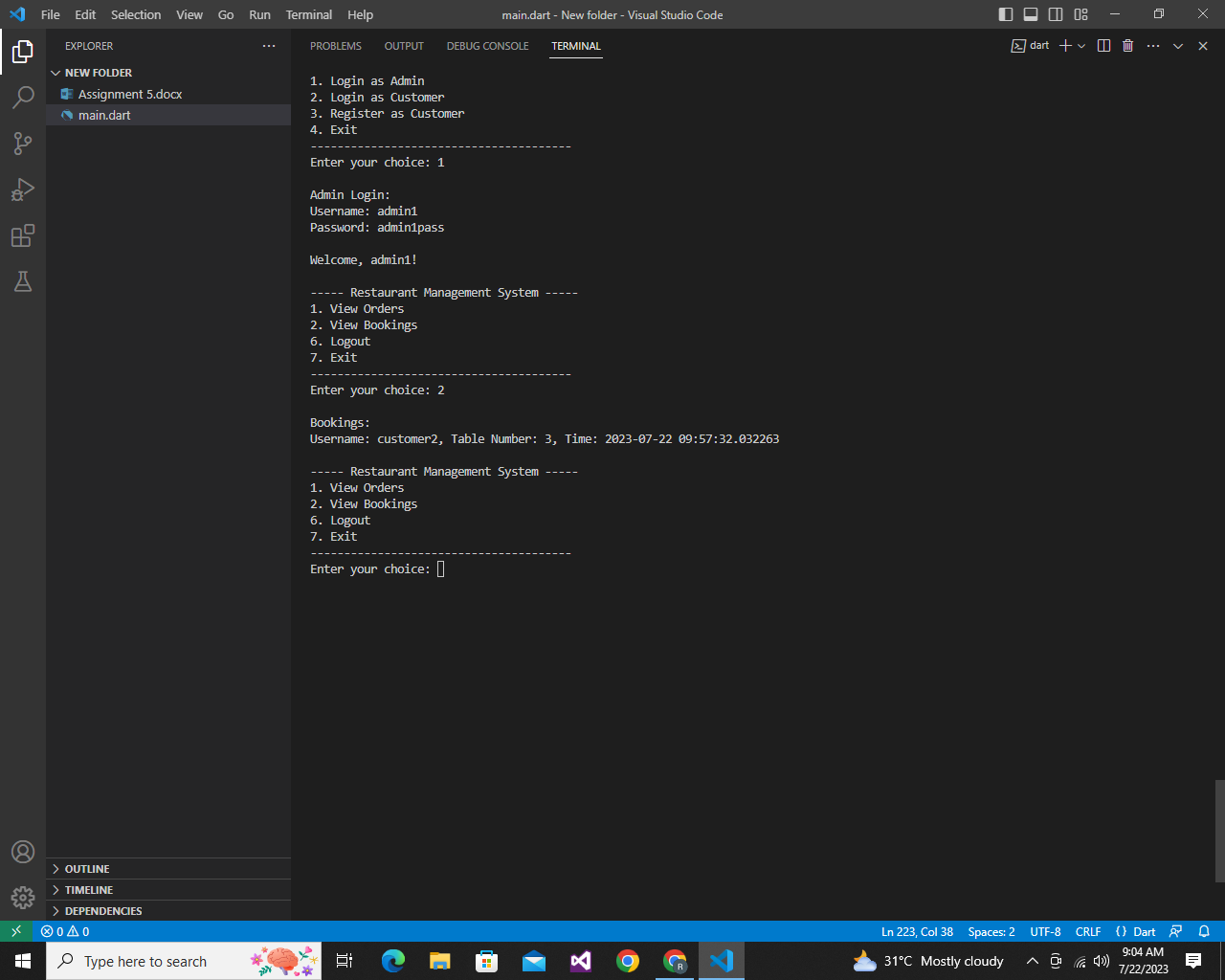
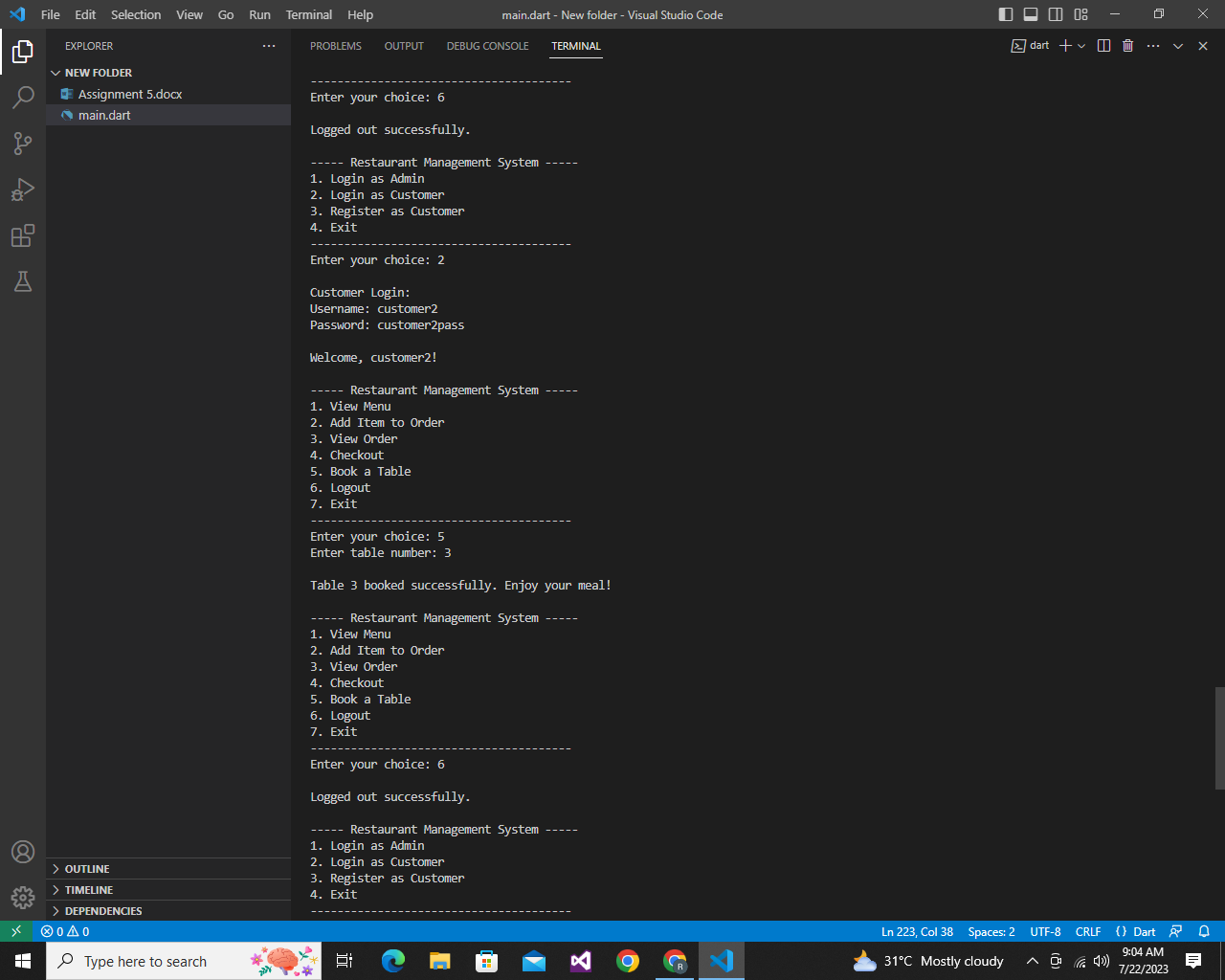
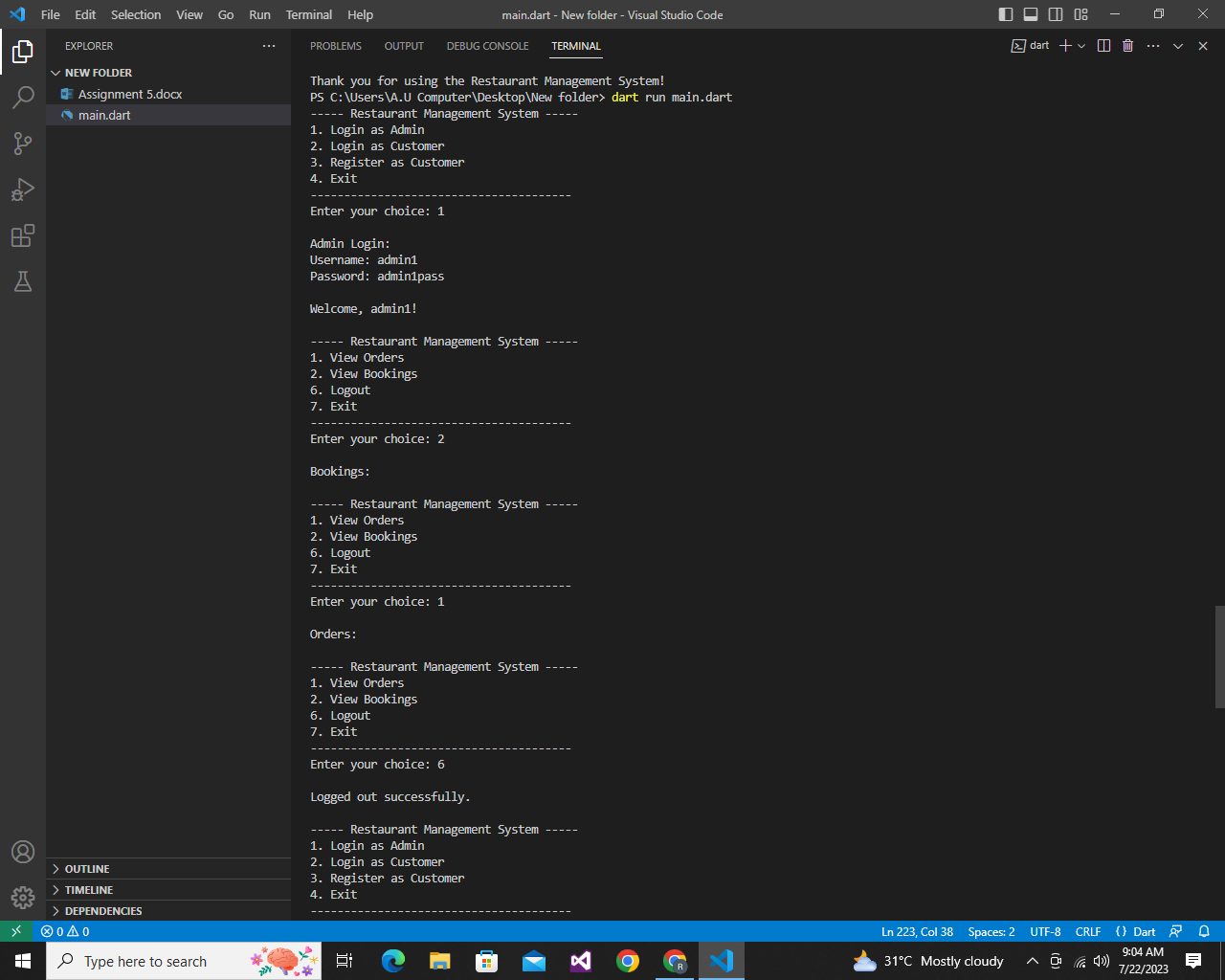
    }

  }

  print('Thank you for using the Restaurant Management System!');

}

**Output**

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