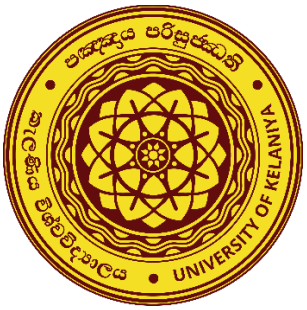
Worksheet 04

CTEC 22043
Object Oriented Programming

Student No: CT/2021/002



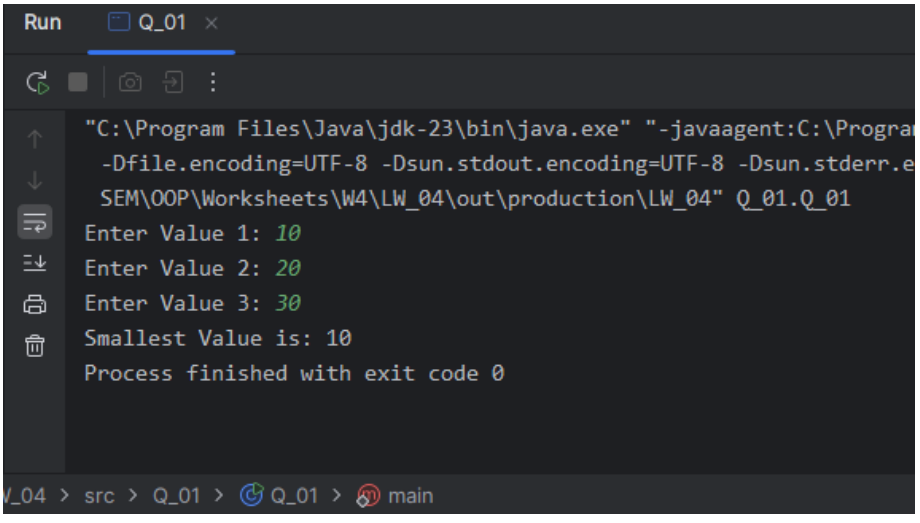
Faculty of Computing and Technology
University of Kelaniya
Sri Lanka

Q 01:

Code:

```
package Q_01;

import java.util.Scanner;
public class Q_01 {
    public static void main(String[] args) {
        int x,y,z;
        Scanner scan = new Scanner(System.in);
        System.out.print("Enter Value 1: ");
        x = scan.nextInt();
        System.out.print("Enter Value 2: ");
        y = scan.nextInt();
        System.out.print("Enter Value 3: ");
        z = scan.nextInt();
        int min;

        if (x<y){
            if(x<z){
                min = x;
            }
            else{
                min = z;
            }
        }
        else{
            if(y<z){
                min = y;
            }
            else{
                min = z;
            }
        }

        System.out.print("Smallest Value is: "+min);
    }
}
```

Output:

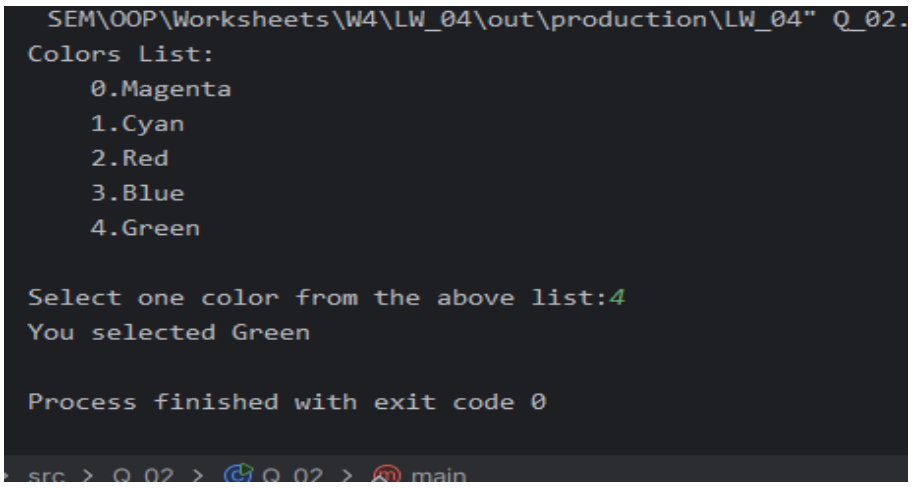


Q 02:

Code:

```
package Q_02;

import java.util.Scanner;
public class Q_02 {
    public static void main(String[] args) {
        Scanner scan = new Scanner(System.in);
        System.out.println("Colors List:");
        System.out.println("\t0.Magenta");
        System.out.println("\t1.Cyan");
        System.out.println("\t2.Red");
        System.out.println("\t3.Blue");
        System.out.println("\t4.Green");
      System.out.print("\nSelect one color from the above list:");

        int color = scan.nextInt();
        scan.close();

        switch(color){
            case 0:
                System.out.println("You selected Magenta");
                break;
            case 1:
                System.out.println("You selected Cyan");
                break;
            case 2:
                System.out.println("You selected Red");
                break;
            case 3:
                System.out.println("You selected Blue");
                break;
            case 4:
                System.out.println("You selected Green");
                break;
            default:
                System.out.println("Invalid Color");
                break;
        }
    }
}
```

Result:

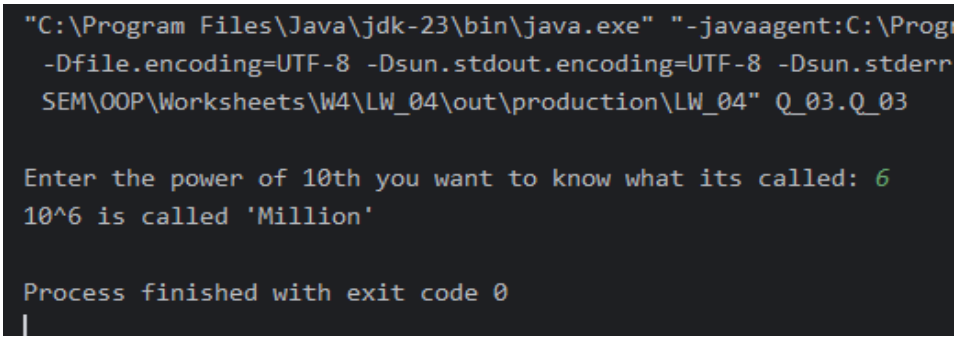


Q 03:

Code:

```
package Q_03;

import java.util.Scanner;

public class Q_03 {
    public static void main(String[] args) {
        Scanner scan = new Scanner(System.in);
        System.out.print("\nEnter the power of 10th you want to
know what its called: ");
        int power = scan.nextInt();

        switch(power){
            case 6:
                System.out.println("10^6 is called 'Million'");
                break;
            case 9:
                System.out.println("10^9 is called 'Billion'");
                break;
            case 12:
                System.out.println("10^12 is called 'Trillion'");
                break;
            case 15:
                  System.out.println("10^15 is called 'Quadrillion'");
                break;
            case 18:
                System.out.println("10^18 is called 'Quintillion'");
                break;
            case 21:
                System.out.println("10^21 is called 'Sextillion'");
                break;
            case 30:
                System.out.println("10^30 is called 'Nonillion'");
                break;
            case 100:
                System.out.println("10^100 is called 'Googol'");
                break;
            default:
                System.out.println("Invalid Input");
                break;

        }
    }
}
```

Result:

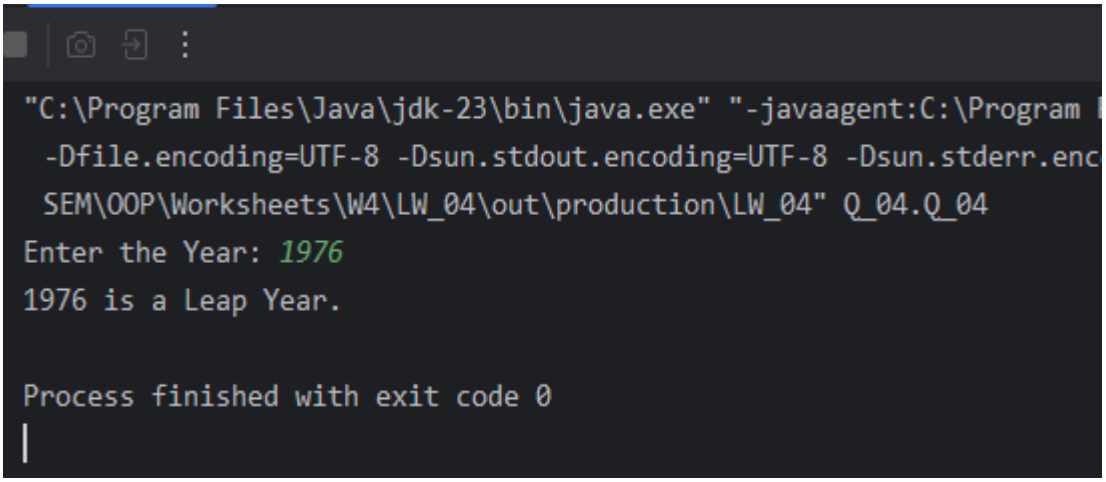


Q 04:

Code:

```
package Q_04;

import java.util.Scanner;

public class Q_04 {
    public static void main(String[] args) {
        Scanner scan = new Scanner(System.in);
        System.out.print("Enter the Year: ");
        int year = scan.nextInt();

        if (year%4 == 0 && year%100 != 0) {
            System.out.println(year + " is a Leap Year.");
        } else {
            if (year%4 == 0 && year%100 == 0 && year%400 == 0) {
                System.out.println(year + " is a Leap Year.");
            } else {
                System.out.println(year + " is not a Leap Year.");
            }
        }
    }
}
```

Result:



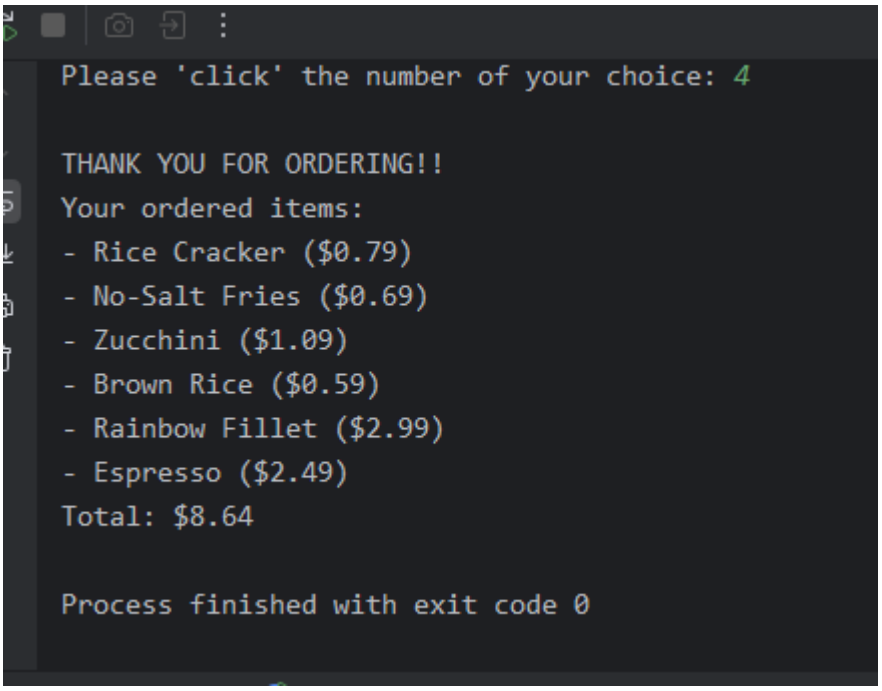
Q 05:

Code:

```
      package Q_05;

        import java.util.*;

        public class Q_05 {
            public static void main(String[] args) {
                Scanner scan = new Scanner(System.in);

            String[][] menuItems = {
                    {"Tofu Burger", "Cajun Chicken", "Buffalo Wings",
"Rainbow Fillet"},
                    {"Rice Cracker", "No-Salt Fries", "Zucchini", "Brown
Rice"},
                    {"Cafe Mocha", "Cafe Latte", "Espresso", "Oolong
Tea"}
                };
                double[][] menuPrices = {
                    {3.49, 4.59, 3.99, 2.99},
                    {0.79, 0.69, 1.09, 0.59},
                    {1.99, 1.90, 2.49, 0.99}
                };
                String[] categories = {"Entree", "Side Dish", "Drink"};

                ArrayList<String> orderedItems = new ArrayList<>();
                HashSet<String> selectedItems = new HashSet<>();
                double totalPrice = 0.0;

                int choice;
                do {
                    System.out.println("\nMain Menu:");
                    for (int i = 0; i < categories.length; i++) {
                        System.out.printf("%d.   %s\n",   i   +   1,
categories[i]);
                    }
                    System.out.println("4. Finish and Show Total");
                    System.out.print("Please 'click' the number of your
choice: ");
                    choice = scan.nextInt();

                    if (choice >= 1 && choice <= 3) {
                        totalPrice += selectItems(categories[choice -
1], menuItems[choice - 1], menuPrices[choice - 1], orderedItems,
selectedItems, scan);
                    } else if (choice == 4) {
                        System.out.println("\nTHANK      YOU      FOR
ORDERING!!");
                        System.out.println("Your ordered items:");
                        orderedItems.forEach(item                    ->
System.out.println("- " + item));
                        System.out.printf("Total:            $%.2f\n",
totalPrice);
                    } else {
                        System.out.println("Invalid choice. Please try
again.");
                    }
```

```
            } while (choice != 4);
        }

        public static double selectItems(String category, String[]
items, double[] prices,
                                         ArrayList<String>   order,
HashSet<String> selectedSet, Scanner scan) {
            double categoryTotal = 0.0;
            int selection;

            do {
                System.out.println("\n" + category + " Menu:");
                for (int i = 0; i < items.length; i++) {
                    System.out.printf("%d. %s \t $%.2f%s\n",
                            i + 1, items[i], prices[i],
                            selectedSet.contains(items[i])   ?   "
[Already Selected]" : "");
                }
                System.out.println("0. Done with " + category);
                System.out.print("Click item number to select (0 to
stop): ");
                selection = scan.nextInt();

                if (selection >= 1 && selection <= items.length) {
                    String selectedItem = items[selection - 1];
                    if (selectedSet.add(selectedItem)) {
                        order.add(selectedItem    +    "    ($"    +
prices[selection - 1] + ")");
                        categoryTotal += prices[selection - 1];
                        System.out.println("Added:       "       +
selectedItem);
                    } else {
                        System.out.println("You've already selected
that item.");
                    }
                } else if (selection != 0) {
                    System.out.println("Invalid selection.");
                }
            } while (selection != 0);

            return categoryTotal;
        }
    }
```

Result:


Please 'click' the number of your choice: 4
THANK YOU FOR ORDERING!!
Your ordered items:
- Rice Cracker ($0.79)
- No-Salt Fries ($0.69)
- Zucchini ($1.09)
- Brown Rice ($0.59)
- Rainbow Fillet ($2.99)
- Espresso ($2.49)
Total: $8.64
Process finished with exit code 0