Lab worksheet 4: Selection Statements

Q1.

Code:

```java
package Q_01;

import java.util.Scanner;

public class Q_01 {
    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        //get user input
        System.out.print("Enter the first integer: ");
        int num1 = scanner.nextInt();

        System.out.print("Enter the second integer: ");
        int num2 = scanner.nextInt();

        System.out.print("Enter the third integer: ");
        int num3 = scanner.nextInt();

        // Initialize smallest with the first number
        int smallest = num1;

        if (num2 < smallest) {
            smallest = num2;
        }

        if (num3 < smallest) {
            smallest = num3;
        }

        System.out.println("The smallest number is: " +
smallest);
        scanner.close();
    }


}
```
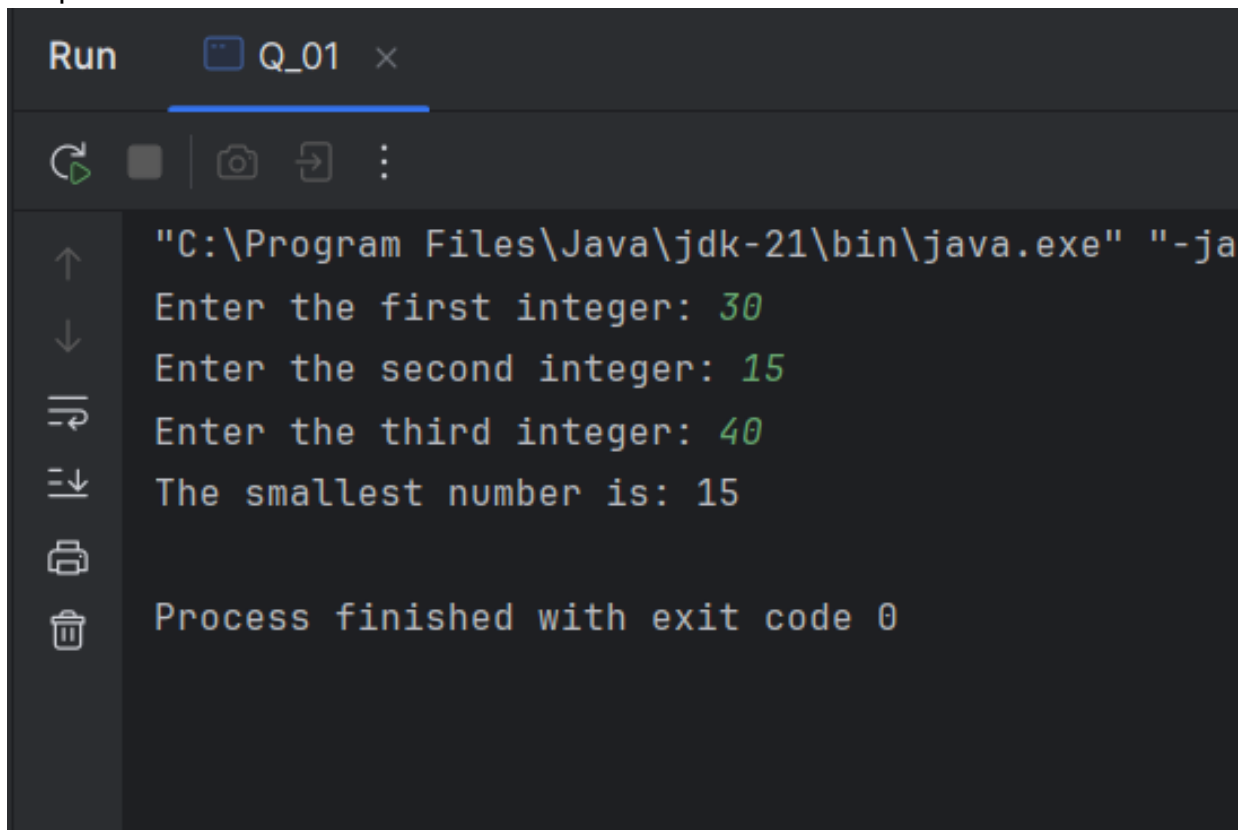
Output:

```
Run     ▣ Q_01  ×

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    "C:\Program Files\Java\jdk-21\bin\java.exe" "-ja
    Enter the first integer: 30
    Enter the second integer: 15
    Enter the third integer: 40
    The smallest number is: 15

    Process finished with exit code 0
```

Q2.

Code:

```java
package Q_02;

import java.util.Scanner;

public class Q_02 {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.println("0. Magenta");
        System.out.println("1. Cyan");
        System.out.println("2. Red");
        System.out.println("3. Blue");
        System.out.println("4. Green");
        System.out.println("Select one color from the above list:");

        int selection = scanner.nextInt();
        switch (selection) {
            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 selection");
                break;
        }
        scanner.close();
    }
}
```
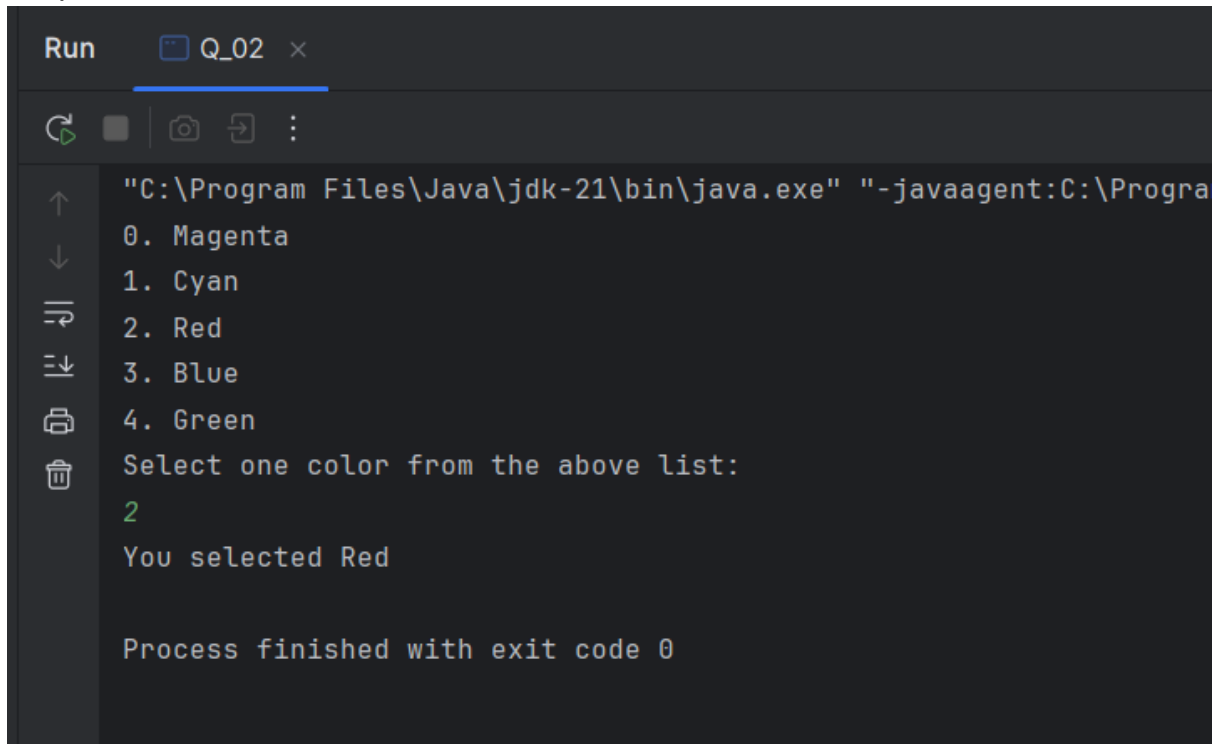
Output:

```
"C:\Program Files\Java\jdk-21\bin\java.exe" "-javaagent:C:\Progra
0. Magenta
1. Cyan
2. Red
3. Blue
4. Green
Select one color from the above list:
2
You selected Red

Process finished with exit code 0
```

Q3.

Code:

```java
package Q_03;

import java.util.Scanner;

public class Q_03 {
        public static void main(String[] args) {
            Scanner scanner = new Scanner(System.in);

            System.out.print("Enter a power of 10 (Example
powers:-  6, 9, 12, 15, 18, 21, 30, 100): ");
            int power = scanner.nextInt();

            String numberName;
            switch (power) {
                case 6:
                    numberName = "Million";
                    break;
                case 9:
                    numberName = "Billion";
                    break;
                case 12:
                    numberName = "Trillion";
                    break;
                case 15:
                    numberName = "Quadrillion";
                    break;
                case 18:
                    numberName = "Quintillion";
                    break;
                case 21:
                    numberName = "Sextillion";
                    break;
                case 30:
                    numberName = "Nonillion";
                    break;
                case 100:
                    numberName = "Googol";
                    break;
                default:
                    numberName= null;
```
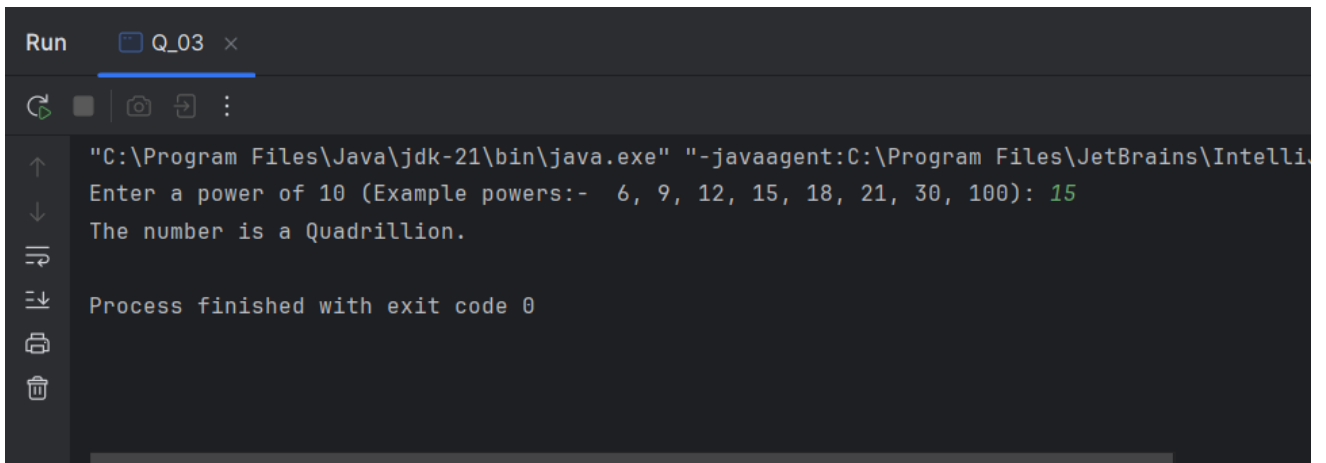
```java
                break;
            }
            if (numberName != null) {
                System.out.println("The number is a " +
numberName + ".");
            } else {
                System.out.println("No corresponding word for
10 to the power of " + power + ".");
            }

            scanner.close();
        }
    }
```

Output:

Run   Q_03 ×

```
"C:\Program Files\Java\jdk-21\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ
Enter a power of 10 (Example powers:-  6, 9, 12, 15, 18, 21, 30, 100): 15
The number is a Quadrillion.

Process finished with exit code 0
```

Q4.

Code:

```java
package Q_04;

import java.util.Scanner;

public class Q_04 {
        public static void main(String[] args) {
            Scanner scanner = new Scanner(System.in);

            System.out.print("Enter a year: ");
            int year = scanner.nextInt();

            // Check if the year is a leap year
            if (isLeapYear(year)) {
                System.out.println(year + " is a Leap
Year.");
            } else {
                System.out.println(year + " is Not a Leap
Year.");
            }

            scanner.close();
        }

        // Method to determine if a year is a leap year
        public static boolean isLeapYear(int year) {
            if (year % 4 == 0) {
                if (year % 100 == 0) {
                    return year % 400 == 0;
                } else {
                    return true;
                }
            }
            return false;
        }
    }
```
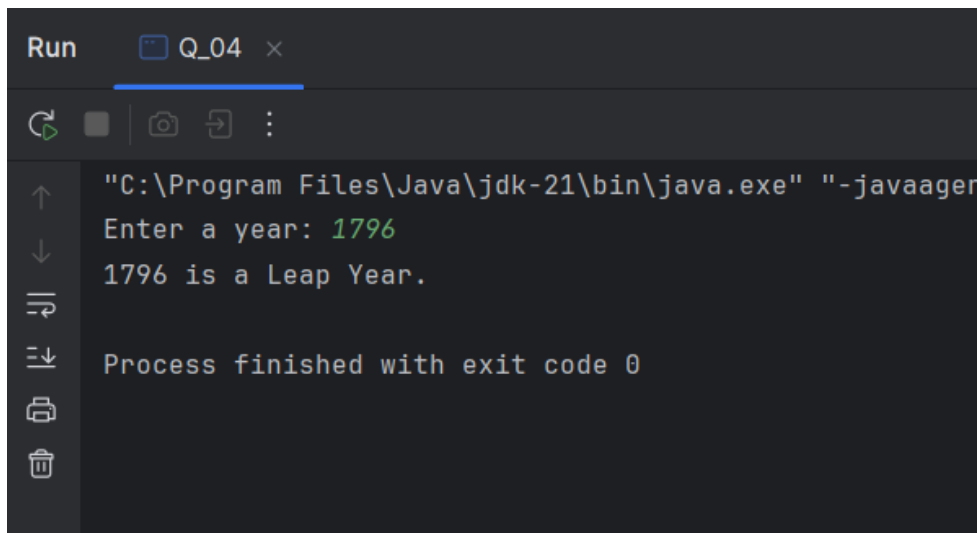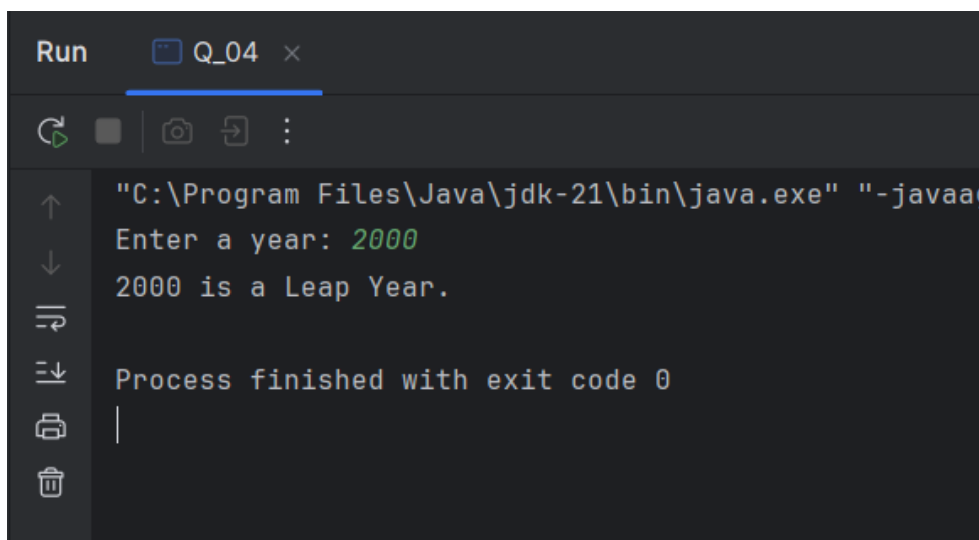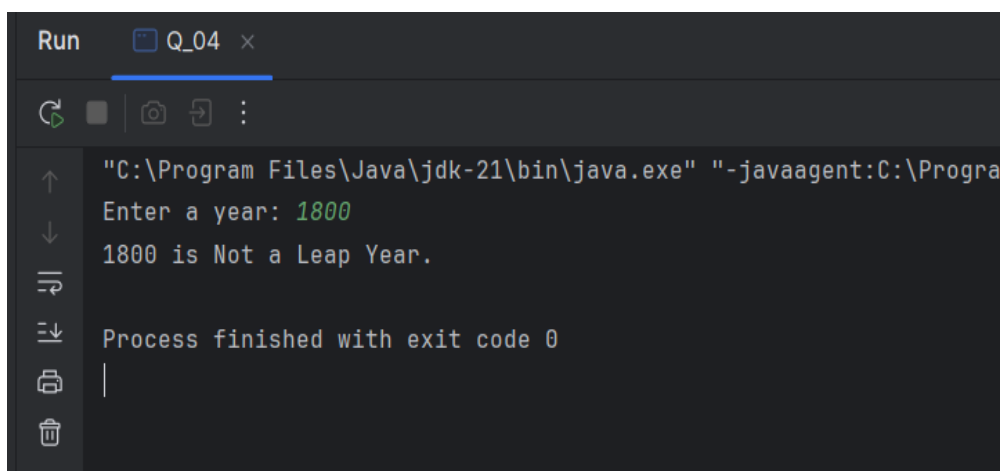
Outputs:

```
Run    Q_04  ×

    "C:\Program Files\Java\jdk-21\bin\java.exe" "-javaagen
    Enter a year: 1796
    1796 is a Leap Year.

    Process finished with exit code 0
```

```
Run    Q_04  ×

    "C:\Program Files\Java\jdk-21\bin\java.exe" "-javaag
    Enter a year: 2000
    2000 is a Leap Year.

    Process finished with exit code 0
```

```
Run    Q_04  ×

    "C:\Program Files\Java\jdk-21\bin\java.exe" "-javaagent:C:\Progra
    Enter a year: 1800
    1800 is Not a Leap Year.

    Process finished with exit code 0
```

Q5.

Code:

```java
package Q_05;

import java.util.Scanner;

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

        System.out.println("\nEntree\t\t\tSide
Dish\t\t\tDrink");
        System.out.println("1. Tofu Burger\t\t$3.49\t5. Rice
Cracker\t\t$0.79\t9. Cafe Mocha\t\t$1.99");
        System.out.println("2. Cajun Chicken\t$4.59\t6. No-
Salt Fries\t$0.69\t10. Cafe Latte\t\t$1.90");
        System.out.println("3. Buffalo Wings\t$3.99\t7.
Zucchini\t\t\t$1.09\t11. Espresso\t\t$2.49");
        System.out.println("4. Rainbow Fillet\t$2.99\t8.
Brown Rice\t\t$0.59\t12. Oolong Tea\t\t$0.99");

        System.out.print("\nPlease enter the item number you
want: ");
        int item = scanner.nextInt();

        switch (item) {
            case 1:
                System.out.println("Tofu Burger is $3.49");
                break;
            case 2:
                System.out.println("Cajun Chicken is $4.59");
                break;
            case 3:
                System.out.println("Buffalo Wings is $3.99");
                break;
            case 4:
                System.out.println("Rainbow Fillet is
```

```java
$2.99");
                break;
            case 5:
                System.out.println("Rice Cracker is $0.79");
                break;
            case 6:
                System.out.println("No-Salt Fries is $0.69");
                break;
            case 7:
                System.out.println("Zucchini is $1.09");
                break;
            case 8:
                System.out.println("Brown Rice is $0.59");
                break;
            case 9:
                System.out.println("Cafe Mocha is $1.99");
                break;
            case 10:
                System.out.println("Cafe Latte is $1.90");
                break;
            case 11:
                System.out.println("Espresso is $2.49");
                break;
            case 12:
                System.out.println("Oolong Tea is $0.99");
                break;
            default:
                System.out.println("Invalid entry");
                break;
        }

        scanner.close();
    }
}
```