Q1

Code: Approach 1 - Main

```
package Q_01;

import java.util.Scanner;

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

      Scanner input = new Scanner(System.in);

      System.out.print("Enter an integer: ");
      int num1 = input.nextInt();

      System.out.print("Enter an integer: ");
      int num2 = input.nextInt();

      System.out.print("Enter an integer: ");
      int num3 = input.nextInt();

      if (num1 >= num2) {
         if (num3 >= num2) {
            System.out.print(num2 + " is the smallest integer");

         } else {
            System.out.print(num3 + " is the smallest integer");

         }

      } else if (num1 >= num3) {
         System.out.print(num3 + " is the smallest integer");

      } else {
         System.out.print(num1 + " is the smallest integer");

      }
   }
}
```

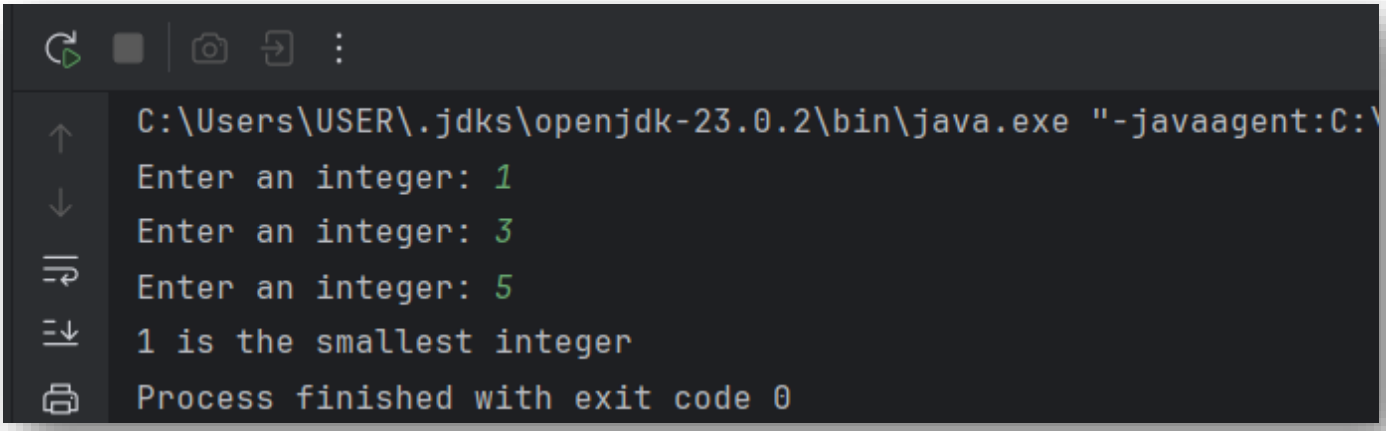
Code: Approach 2 – Main2

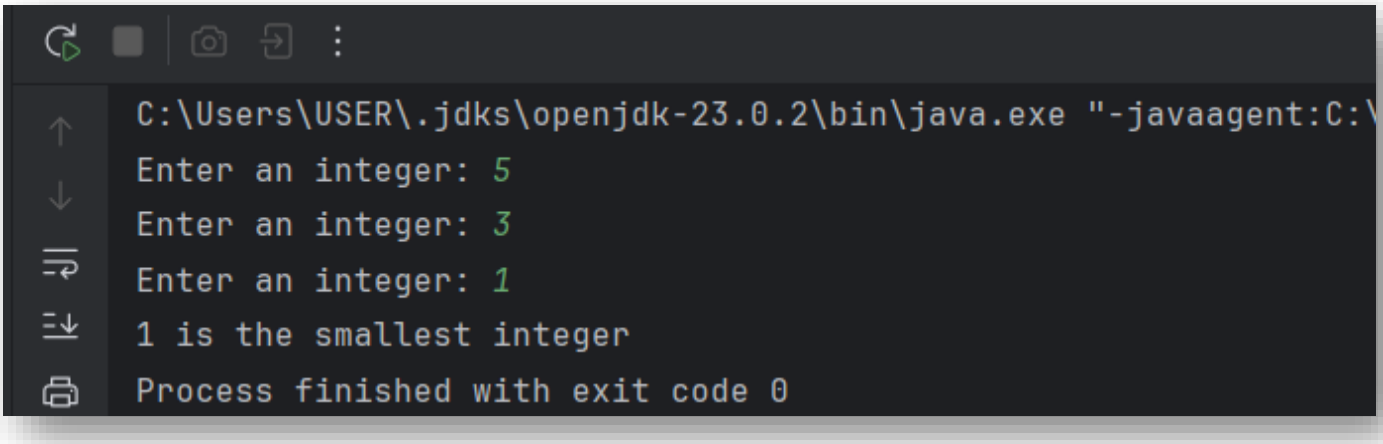
```
package Q_01;

import java.util.Scanner;

public class Main2 {
   public static void main(String[] args) {

      Scanner input = new Scanner(System.in);

      System.out.print("Enter an integer: ");
      int num1 = input.nextInt();

      System.out.print("Enter an integer: ");
      int num2 = input.nextInt();

      System.out.print("Enter an integer: ");
      int num3 = input.nextInt();

      if (num1 >= num2 && num3 >= num2) {
            System.out.print(num2 + " is the smallest integer");

      } else if (num2 >= num1 && num3 >= num1) {
            System.out.print(num1 + " is the smallest integer");

      } else {
         System.out.print(num3 + " is the smallest integer");

      }
   }
}
```

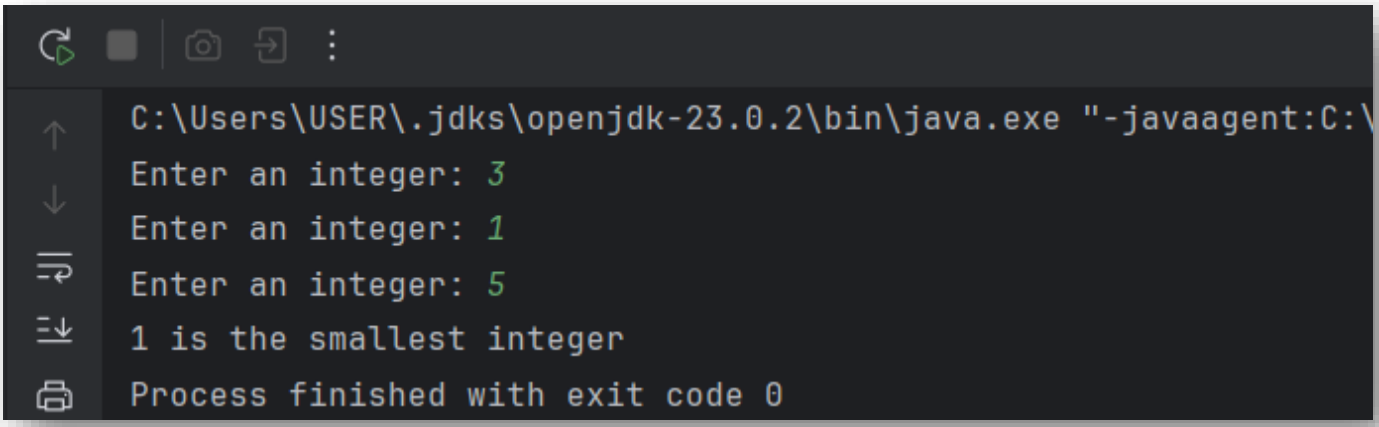
Code: Approach 3 – Main3

```
package Q_01;

import java.util.Scanner;

public class Main3 {
   public static void main(String[] args) {

      Scanner input = new Scanner(System.in);

      System.out.print("Enter an integer: ");
      int num1 = input.nextInt();

      System.out.print("Enter an integer: ");
      int num2 = input.nextInt();

      System.out.print("Enter an integer: ");
      int num3 = input.nextInt();

      int sInt = num1;

      if (sInt >= num2) {
         sInt = num2;
      }
      if (sInt >= num3) {
         sInt = num3;
      }
      System.out.print(sInt + " is the smallest integer");
   }
}
```

Output:


C:\Users\USER\.jdks\openjdk-23.0.2\bin\java.exe "-javaagent:C:\
Enter an integer: 1
Enter an integer: 3
Enter an integer: 5
1 is the smallest integer
Process finished with exit code 0


C:\Users\USER\.jdks\openjdk-23.0.2\bin\java.exe "-javaagent:C:\
Enter an integer: 5
Enter an integer: 3
Enter an integer: 1
1 is the smallest integer
Process finished with exit code 0

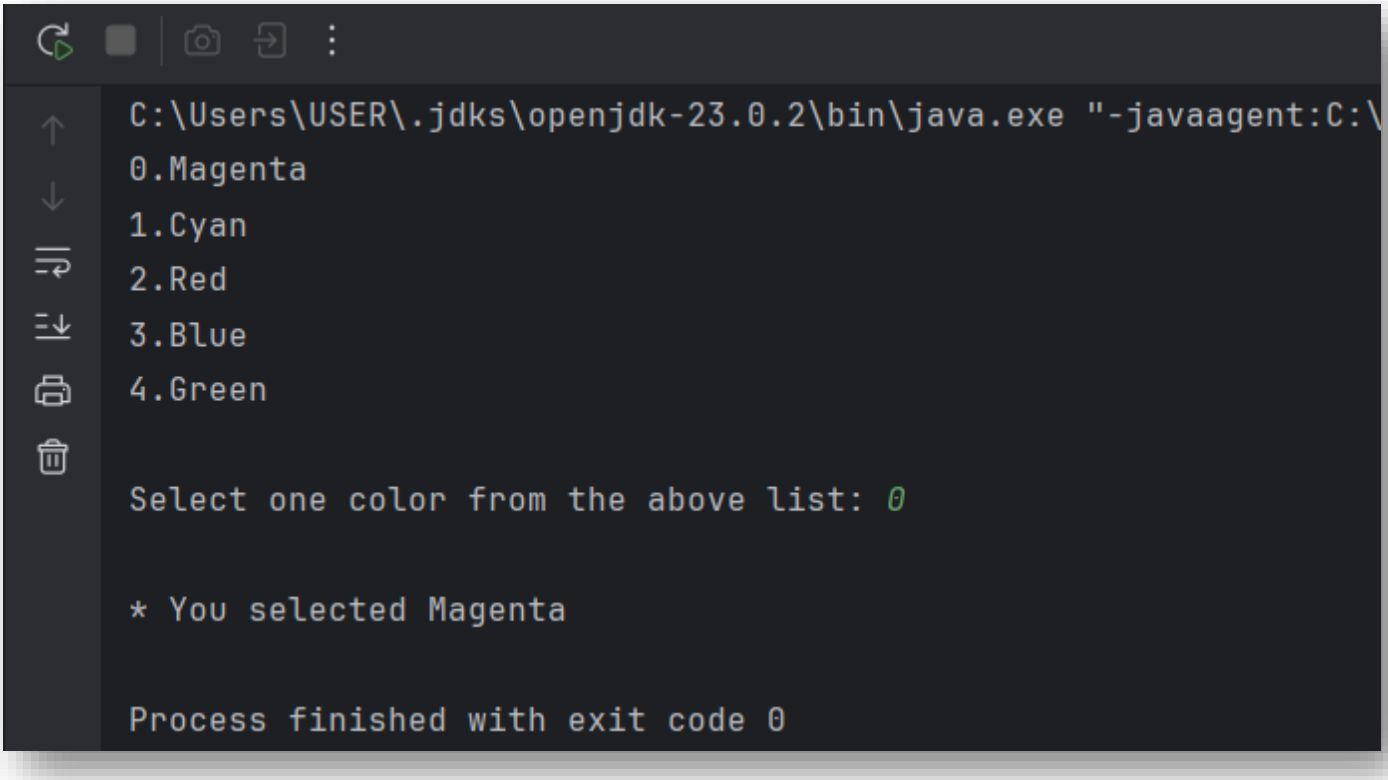

C:\Users\USER\.jdks\openjdk-23.0.2\bin\java.exe "-javaagent:C:\
Enter an integer: 3
Enter an integer: 1
Enter an integer: 5
1 is the smallest integer
Process finished with exit code 0

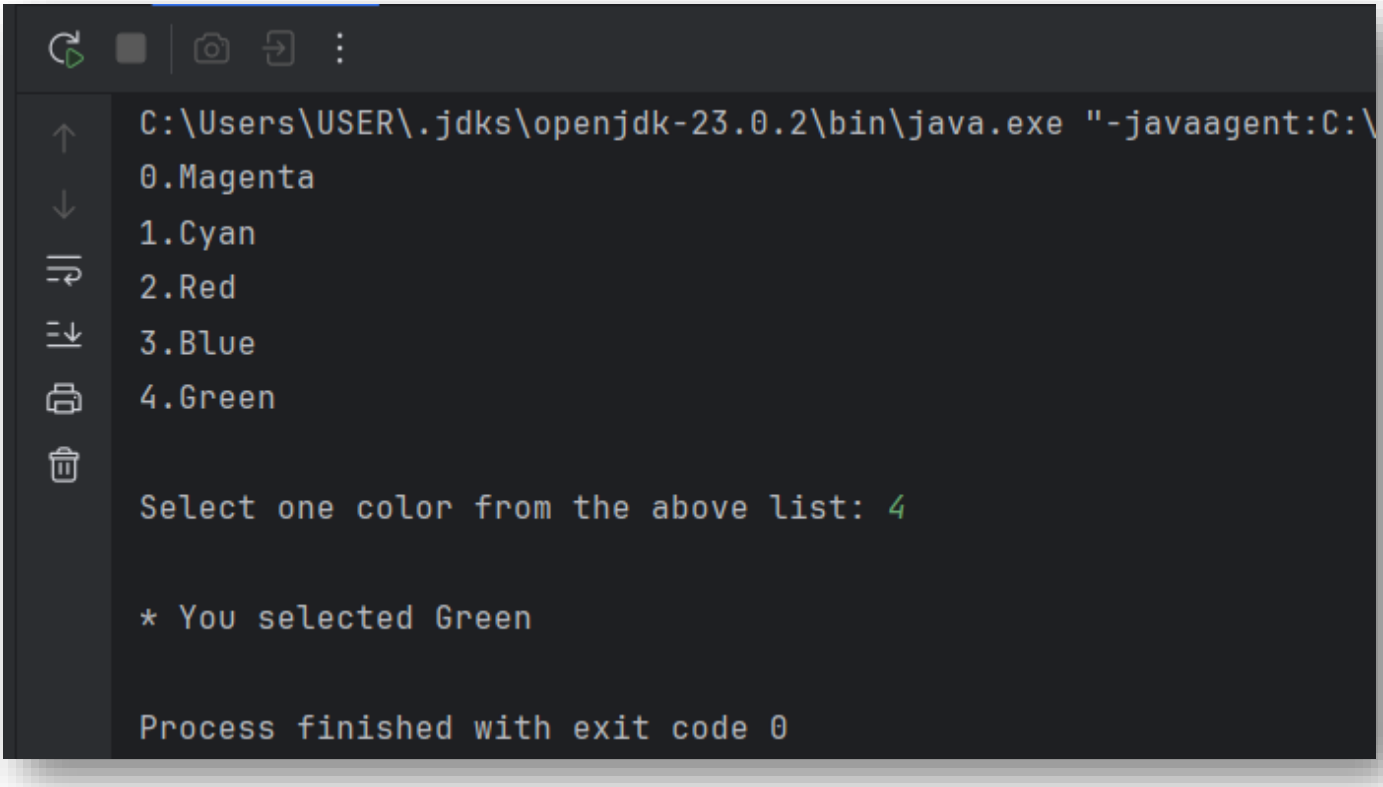
Q2

Code:

```
package Q_02;

import java.util.Scanner;

public class Main {
  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\n");
    System.out.print("Select one color from the above list: ");

    int selection = scanner.nextInt();

    switch (selection) {
      case 0:
        System.out.println("\n* You selected Magenta");
        break;

      case 1:
        System.out.println("\n* You selected Cyan");
        break;

      case 2:
        System.out.println("\n* You selected Red");
        break;

      case 3:
        System.out.println("\n* You selected Blue");
        break;

      case 4:
        System.out.println("\n* You selected Green");
        break;

      default:
        System.out.println("\n* Invalid selection");
    }
  }
}
```

Output:


C:\Users\USER\.jdks\openjdk-23.0.2\bin\java.exe "-javaagent:C:\
0.Magenta
1.Cyan
2.Red
3.Blue
4.Green
Select one color from the above list: 0
* You selected Magenta
Process finished with exit code 0

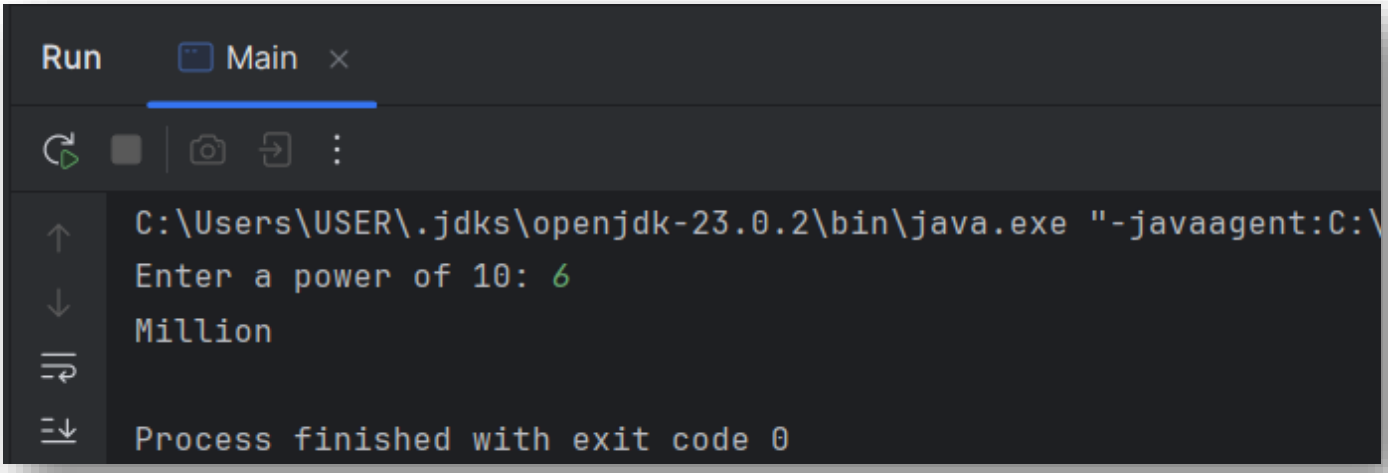

C:\Users\USER\.jdks\openjdk-23.0.2\bin\java.exe "-javaagent:C:\
0.Magenta
1.Cyan
2.Red
3.Blue
4.Green
Select one color from the above list: 4
* You selected Green
Process finished with exit code 0

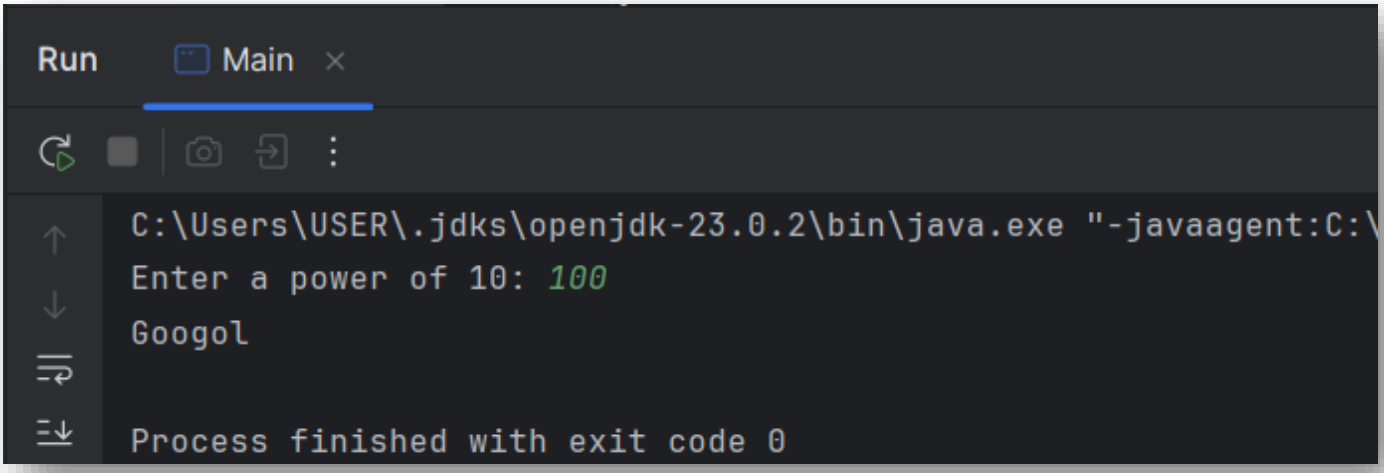
Q3

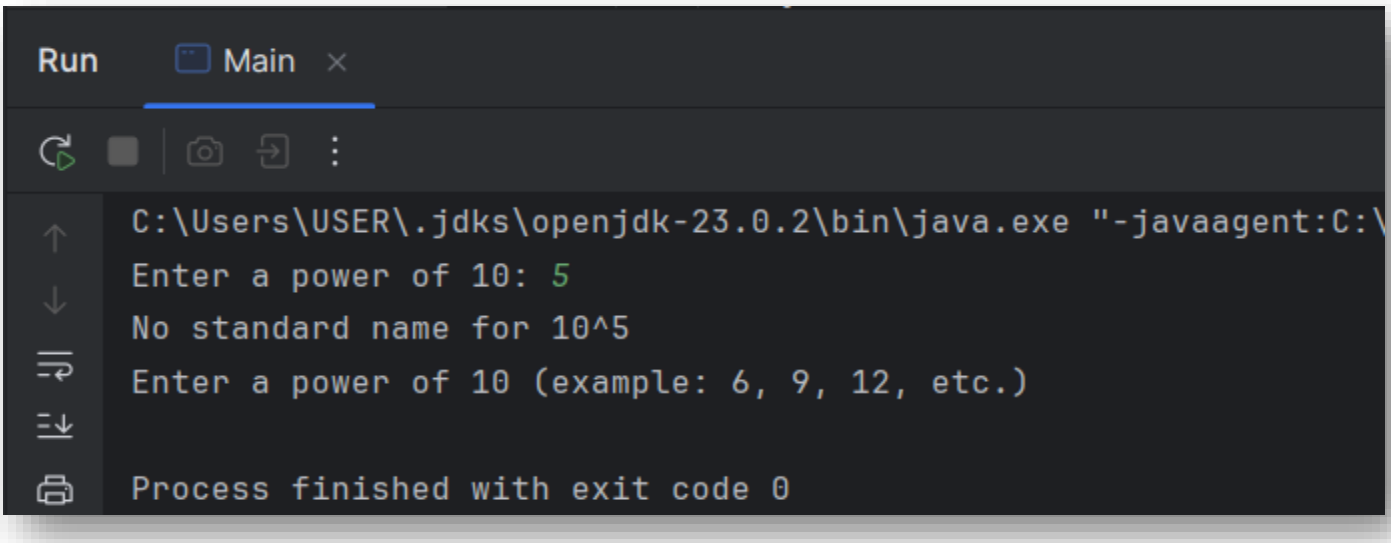
Code:

```
package Q_03;

import java.util.Scanner;

public class Main {

  public static void main(String[] args) {

    Scanner input = new Scanner(System.in);

    System.out.print("Enter a power of 10: ");
    int power = input.nextInt();

    switch (power) {
      case 6:
        System.out.println("Million");
        break;

      case 9:
        System.out.println("Billion");
        break;

      case 12:
        System.out.println("Trillion");
        break;

      case 15:
        System.out.println("Quadrillion");
        break;

      case 18:
        System.out.println("Quintillion");
        break;

      case 21:
        System.out.println("Sextillion");
        break;

      case 30:
        System.out.println("Nonillion");
        break;

      case 100:
        System.out.println("Googol");
        break;

      default:
        System.out.println("No standard name for 10^" + power);
        System.out.println("Enter a power of 10 (example: 6, 9, 12, etc.)");
        break;
    }
  }
}
```

Output:


Run
Main
C:\Users\USER\.jdks\openjdk-23.0.2\bin\java.exe "-javaagent:C:\
Enter a power of 10: 6
Million
Process finished with exit code 0


Run
Main
C:\Users\USER\.jdks\openjdk-23.0.2\bin\java.exe "-javaagent:C:\
Enter a power of 10: 100
Googol
Process finished with exit code 0

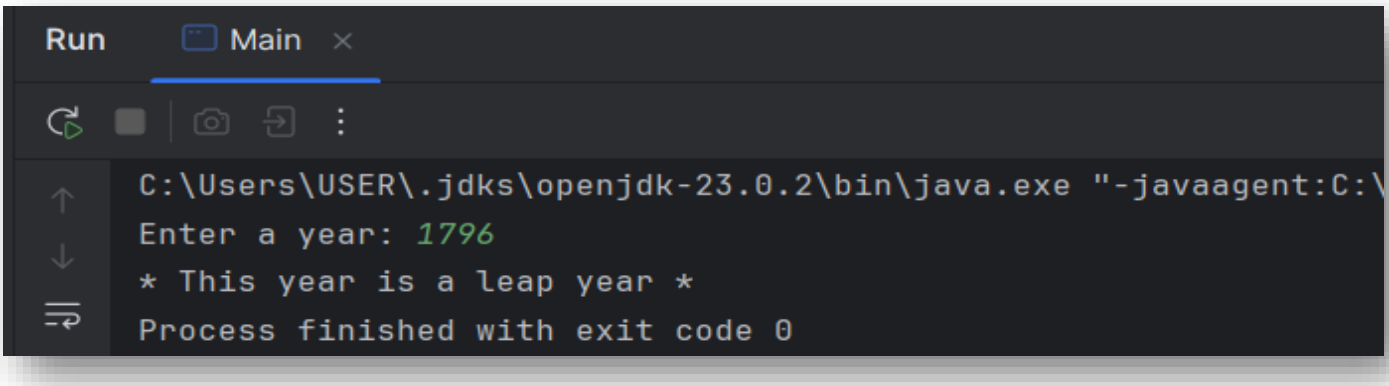

Run
Main
C:\Users\USER\.jdks\openjdk-23.0.2\bin\java.exe "-javaagent:C:\
Enter a power of 10: 5
No standard name for 10^5
Enter a power of 10 (example: 6, 9, 12, etc.)
Process finished with exit code 0

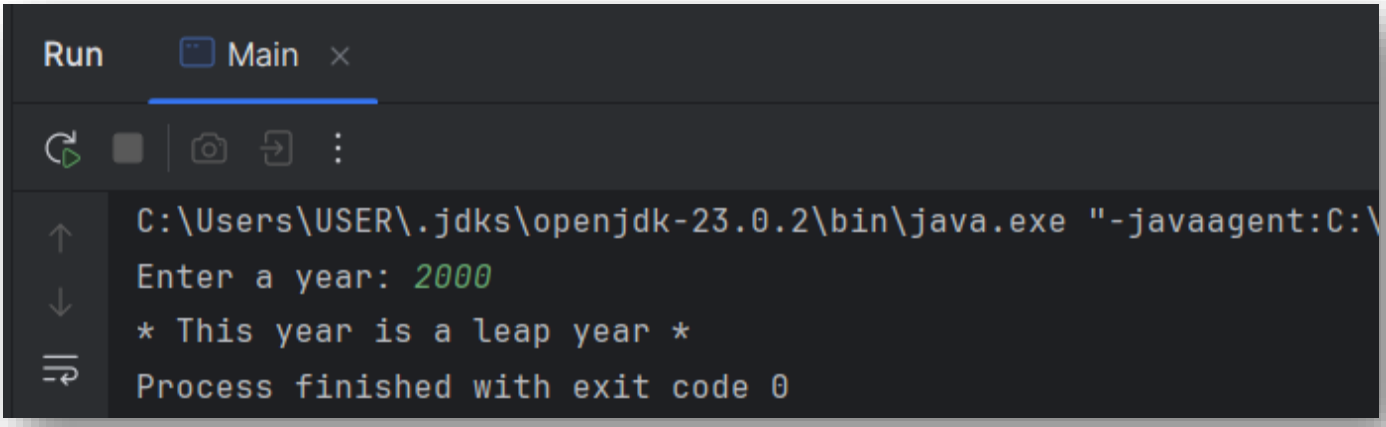
Q4

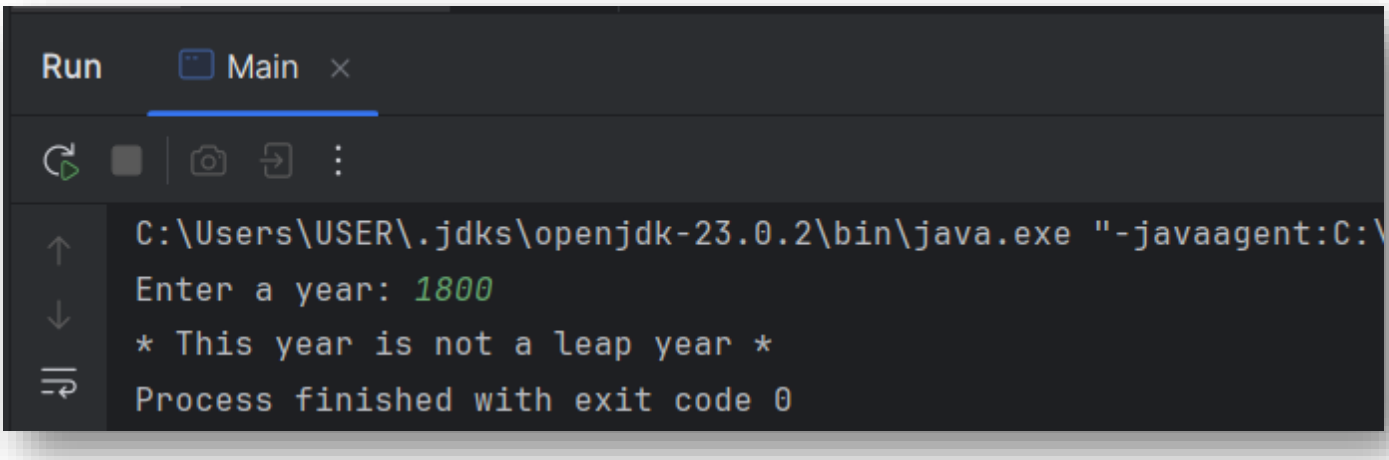
Code:

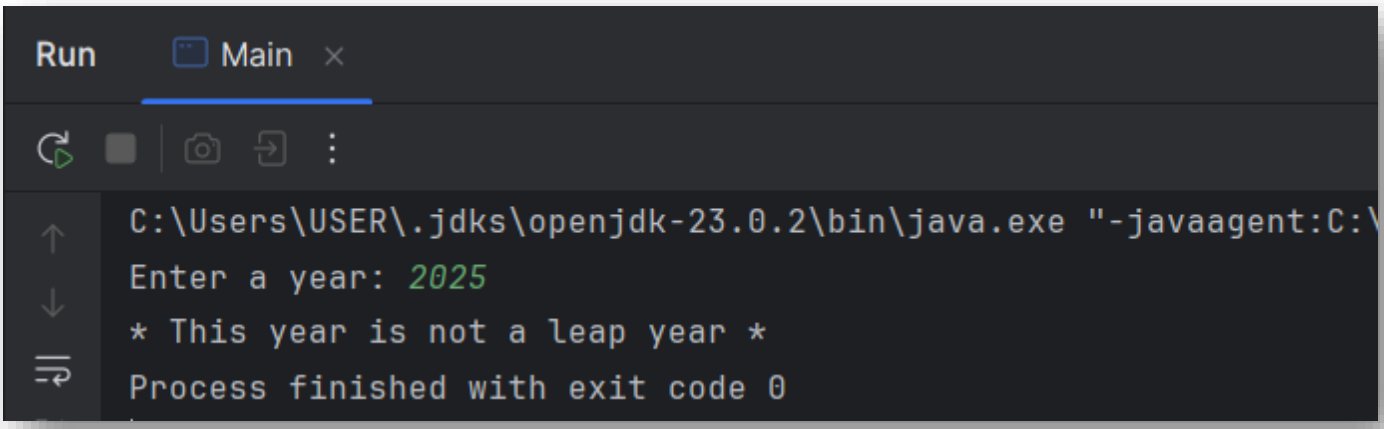
```
package Q_04;

import java.util.Scanner;

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

      Scanner input = new Scanner(System.in);

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

      if (year % 4 == 0) {
         if (year % 100 == 0 && year % 400 == 0)
            System.out.print("* This year is a leap year *");

         else if (year % 100 != 0)
            System.out.print("* This year is a leap year *");

         else
            System.out.print("* This year is not a leap year *");

      } else
         System.out.print("* This year is not a leap year * ");
   }
}
```

Output:




Run
Main
C:\Users\USER\.jdks\openjdk-23.0.2\bin\java.exe "-javaagent:C:\
Enter a year: 2000
* This year is a leap year *
Process finished with exit code 0


Run
Main
C:\Users\USER\.jdks\openjdk-23.0.2\bin\java.exe "-javaagent:C:\
Enter a year: 1800
* This year is not a leap year *
Process finished with exit code 0


Run
Main
C:\Users\USER\.jdks\openjdk-23.0.2\bin\java.exe "-javaagent:C:\
Enter a year: 2025
* This year is not a leap year *
Process finished with exit code 0

Q5

Code:

```
package Q_05;

import java.util.Scanner;

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

      double eCost, sdCost, dCost;
      int qtyE = 0, qtySD = 0, qtyD = 0;
      int Entree, sDish, Drink;
      // Assume that the maximum quantity allowed per item is 10 at a time

      Scanner input = new Scanner(System.in);

      System.out.println("*** Welcome to MyJava Lo-Fat Burgers ***");

      System.out.println("\n****  Entree Menu  ****");
      System.out.println("1 -> Tofu Burger     $3.49");
      System.out.println("2 -> Cajun Chicken   $4.59");
      System.out.println("3 -> Buffalo Wings   $3.99");
      System.out.println("4 -> Rainbow Fillet  $2.99");

      System.out.println("\n*** Side Dish Menu ***");
      System.out.println("1. Rice Cracker    $0.79");
      System.out.println("2. No-Salt Fries   $0.69");
      System.out.println("3. Zucchini       $1.09");
      System.out.println("4. Brown Rice     $0.59");

      System.out.println("\n*** Drink Menu ***");
      System.out.println("1. Cafe Mocha     $1.99");
      System.out.println("2. Cafe Latte     $1.90");
      System.out.println("3. Espresso       $2.49");
      System.out.println("4. Oolong Tea     $0.99");
```

```
// Entree
System.out.print("\nEntree item (Enter 0 to skip): ");
Entree = input.nextInt();
while (Entree < 0 || Entree > 4) {
   System.out.println("Invalid Entree choice. Please enter again");
   System.out.print("\nEntree item (Enter 0 to skip): ");
   Entree = input.nextInt();
}

if (Entree == 1)
   eCost = 3.49;
else if (Entree == 2)
   eCost = 4.59;
else if (Entree == 3)
   eCost = 3.99;
else if (Entree == 4)
   eCost = 2.99;
else
   eCost = 0.00;

if (Entree != 0) {
   System.out.print("Quantity: ");
   qtyE = input.nextInt();
   while (qtyE < 1 || qtyE > 10) {
      System.out.println("Invalid quantity. Please enter again");
      System.out.print("Quantity: ");
      qtyE = input.nextInt();
   }
}


// Side Dish
System.out.print("\nSide Dish item (Enter 0 to skip): ");
sDish = input.nextInt();
while (sDish < 0 || sDish > 4) {
   System.out.println("Invalid Side Dish choice. Please enter again");
   System.out.print("\nSide Dish item (Enter 0 to skip): ");
   sDish = input.nextInt();
}
```

```
if (sDish == 1)
   sdCost = 0.79;
else if (sDish == 2)
   sdCost = 0.69;
else if (sDish == 3)
   sdCost = 1.09;
else if (sDish == 4)
   sdCost = 0.59;
else
   sdCost = 0.00;

if (sDish != 0) {
   System.out.print("Quantity: ");
   qtySD = input.nextInt();
   while (qtySD < 1 || qtySD > 10) {
      System.out.println("Invalid quantity. Please enter again");
      System.out.print("Quantity: ");
      qtySD = input.nextInt();
   }
}


// Drink
System.out.print("\nDrink item (Enter 0 to skip): ");
Drink = input.nextInt();
while (Drink < 0 || Drink > 4) {
   System.out.println("Invalid Drink choice. Please enter again");
   System.out.print("\nDrink item (Enter 0 to skip): ");
   Drink = input.nextInt();
}

if (Drink == 1)
   dCost = 1.99;
else if (Drink == 2)
   dCost = 1.90;
else if (Drink == 3)
   dCost = 2.49;
else if (Drink == 4)
   dCost = 0.99;
else
   dCost = 0.00;
```

```
if (Drink != 0) {
   System.out.print("Quantity: ");
   qtyD = input.nextInt();
   while (qtyD < 1 || qtyD > 10) {
      System.out.println("Invalid quantity. Please enter again");
      System.out.print("Quantity: ");
      qtyD = input.nextInt();
   }
}


if (Entree == 0 && sDish == 0 && Drink == 0) {
         System.out.println("\nNo items selected");
      } else {
         double total = (eCost * qtyE) + (sdCost * qtySD) + (dCost * qtyD);
         System.out.println("\n*** Your Order ***");
         System.out.println("\nCategory    Price    Qty    Amount");
         System.out.println("-----------------------------------");
         System.out.printf("Entree:    $%.2f    %d    $%.2f", eCost, qtyE, (eCost * qtyE));
         System.out.printf("\nSide Dish:  $%.2f    %d    $%.2f", sdCost, qtySD, (sdCost * qtySD));
         System.out.printf("\nDrink:     $%.2f    %d    $%.2f", dCost, qtyD, (dCost * qtyD));
         System.out.println("\n-----------------------------------");
         System.out.printf("Total:                $%.2f", total);
         System.out.println("\n-----------------------------------");
      }

   }
}
```

Output:


Run
Main
C:\Users\USER\.jdks\openjdk-23.0.2\bin\java.exe "-javaagent:C:\Program Files\
*** Welcome to MyJava Lo-Fat Burgers ***
**** Entree Menu ****
1 -> Tofu Burger $3.49
2 -> Cajun Chicken $4.59
3 -> Buffalo Wings $3.99
4 -> Rainbow Fillet $2.99
*** Side Dish Menu ***
1. Rice Cracker $0.79
2. No-Salt Fries $0.69
3. Zucchini $1.09
4. Brown Rice $0.59
*** Drink Menu ***
1. Cafe Mocha $1.99
2. Cafe Latte $1.90
3. Espresso $2.49
4. Oolong Tea $0.99
Entree item (Enter 0 to skip):

```
Entree item (Enter 0 to skip): 1
Quantity: 2

Side Dish item (Enter 0 to skip): 2
Quantity: 1

Drink item (Enter 0 to skip): 4
Quantity: 3

*** Your Order ***

Category    Price    Qty    Amount
-----------------------------------
Entree:     $3.49     2     $6.98
Side Dish:  $0.69     1     $0.69
Drink:      $0.99     3     $2.97
-----------------------------------
Total:                    $10.64
-----------------------------------

Process finished with exit code 0
```