Assignment 2

// 1. write a program to print all natural number in reverse

```
class control_statement {

   public static void main(String[] args) {
      for (int i = 10; i >= 1; i--) {
         System.out.println(i);

      }
   }
}
```

```
(3.10.6) swarajwattamwar@swarajs-MacBook-Air assignment % cd "/Users/swarajwattamwar/Desktop/Semester-2/java/assignment/" && javac print_nuturalNo.jav
a && java print_nuturalNo
10
9
8
7
6
5
4
3
2
1
```

2. Write a program to print multiplication table of a number.

```
// write a program to print multiplication table of a number
class multiplication_table
{
    Run main | Debug main
    public static void main(String[] args) {
        int num = 5;
        for (int i = 1; i <= 10; i++) {
            System.out.println(num + " * " + i + " = " + num
        }
    }
}
```

```
Caused by: java.lang.ClassNotFoundException: multiplication_table
(3.10.6) swarajwattamwar@swarajs-MacBook-Air assignment % cd "/Users/swarajwattamwar/Desktop/Semester-2/java/assig
nment/" && javac multiplication_tabl
e.java && java multiplication_table
5 * 1 = 5
5 * 2 = 10
5 * 3 = 15
5 * 4 = 20
5 * 5 = 25
5 * 6 = 30
5 * 7 = 35
5 * 8 = 40
5 * 9 = 45
5 * 10 = 50
(3.10.6) swarajwattamwar@swarajs-MacBook-Air assignment %
```

3. Write a program to print all alphabets from a to z.

```java
//write a program to print all alphabets from a to z
class print_alphabets {
    Run main | Debug main
    public static void main(String[] args) {
        for (char ch = 'a'; ch <= 'z'; ch++) {
            System.out.println(ch);
        }
    }
}
```

```
a
b
c
d
e
f
g
h
i
j
k
l
m
n
o
p
q
r
```

4. Write a program to print reverse alphabets from Z to A.

```java
//write a program to print reverse alphabets from Z to A
class reverse_alphabets {
    Run main | Debug main
    public static void main(String[] args) {
        for (char ch = 'Z'; ch >= 'A'; ch--) {
            System.out.println(ch);
        }
    }
}
```

```
(3.10.6) swarajwattamwar@swarajs-MacBook-Air assignment % cd "/Users/swarajwattamwar/Desktop/Semester-2/java/assignment/" && javac reverse_alphabets.java && java reverse_alphabets
Z
Y
X
W
V
U
T
S
R
Q
P
O
N
```

5. Write a program to print all even numbers between 1 to 50.

```java
//write a program to print all even numbers between 1 to 50
class even_no {
    public static void main(String[] args) {
        for (int i = 1; i <= 50; i++) {
            if (i % 2 == 0) {
                System.out.println(i);
            }
        }
    }
}
```

```
(3.10.6) swarajwattamwar@swarajs-MacBook-Air assignment % cd "/Users/swarajwattamwar/Desktop/Semester-2/java/assignment/" && javac even_no.java && java even_no
2
4
6
8
10
12
14
16
18
20
22
24
26
```

6. Write a program to print sum of odd numbers between 1 to 50.

```java
//write a program to print all odd numbers between 1 to 50
class odd_no {
    public static void main(String[] args) {
        for (int i = 1; i <= 50; i++) {
            if (i % 2 != 0) {
                System.out.println(i);
            }
        }
    }
}
```

```
23
25
27
29
31
33
35
37
39
41
43
45
47
49
(3.10.6) swarajwattamwar@swarajs-MacBook-Air assignment %
```

7. Write a program to read a weekday number and print weekday name using switch statement.

```java
// switch statement.
import java.util.Scanner;
class weekday {
    Run main | Debug main
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter a weekday number (1-7)");
        int day = sc.nextInt();
        switch (day) {
            case 1 -> System.out.println("Monday");
            case 2 -> System.out.println("Tuesday");
            case 3 -> System.out.println("Wednesday");
            case 4 -> System.out.println("Thursday");
            case 5 -> System.out.println("Friday");
            case 6 -> System.out.println("Saturday");
            case 7 -> System.out.println("Sunday");
            default -> System.out.println("Invalid weekday number");
        }
    }
}
```

```
at weekday.main(weekday.java:8)
(3.10.6) swarajwattamwar@swarajs-MacBook-Air assignment % cd "/Users/swarajwattamwar/Desktop/Semester-2/java/assignment/" && javac weekday.java && jav
a weekday
Enter a weekday number (1-7)
5
Friday
(3.10.6) swarajwattamwar@swarajs-MacBook-Air assignment %
```

9. Write a program to reverse the digits of a given integer number.

```java
// Reverse a number
import java.util.Scanner;

class reverseNum{

    Run main | Debug main
    public static void main(String[] args) {
        Scanner rev =new Scanner(System.in);
        System.out.println("Enter a number: ");
        int num=rev.nextInt();
        int reverse=0;
        int rem;
        while(num>0){
            rem=num%10;
            reverse=(reverse*10)+rem;
            num=num/10;
        }
        System.out.println(reverse);
```

```
at java.base/java.util.Scanner.nextInt(Scanner.java:2267)
at java.base/java.util.Scanner.nextInt(Scanner.java:2221)
at weekday.main(weekday.java:8)
(3.10.6) swarajwattamwar@swarajs-MacBook-Air assignment % cd "/Users/swarajwattamwar/Desktop/Semester-2/java/assignment/" && javac weekday.java && jav
a weekday
Enter a weekday number (1-7)
5
Friday
(3.10.6) swarajwattamwar@swarajs-MacBook-Air assignment % cd "/Users/swarajwattamwar/Desktop/Semester-2/java/assignment/" && javac reverseNum.java &&
java reverseNum
Enter a number:
345
543
(3.10.6) swarajwattamwar@swarajs-MacBook-Air assignment %
```

10.Write a program to find sum of digits of a number.

```java
import java.util.Scanner;

class SumOfDigits {
    Run main | Debug main
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        System.out.println("Enter a number to find the sum of its digits:");
        int num = sc.nextInt();
        int originalNum = num; // To store the original number
        num = Math.abs(num);   // Take the absolute value to handle negative numt

        int sum = 0;
        while (num > 0) {
            sum += num % 10;  // Add the last digit to sum
            num /= 10;        // Remove the last digit
        }
```

```
PROBLEMS 3   OUTPUT   DEBUG CONSOLE   TERMINAL   PORTS   COMMENTS
        at java.base/java.util.Scanner.nextInt(Scanner.java:2267)
        at java.base/java.util.Scanner.nextInt(Scanner.java:2221)
        at sum_no.main(sum_no.java:8)
(3.10.6) swarajwattamwar@swarajs-MacBook-Air assignment % cd "/Users/swarajwattamwar/Desktop/Semester-2/java/assignment/" && javac sum_no.java && java
 sum_no
Enter a number to find sum of its digits
4 4
Sum of digits: 4
(3.10.6) swarajwattamwar@swarajs-MacBook-Air assignment % cd "/Users/swarajwattamwar/Desktop/Semester-2/java/assignment/" && javac sum_no.java && java
 sum_no
Enter a number to find sum of its digits
1234
Sum of digits: 10
(3.10.6) swarajwattamwar@swarajs-MacBook-Air assignment %
```

11.WAP to check whether the inputted number is Armstrong Number or not.

```java
class ArmStrong{
    public static void main(String[] args) {
        Scanner arm =new Scanner(System.in);
        System.out.println("Enter a number: ");
        int num=arm.nextInt();
        int temp=num;
        int sum=0;
        int rem;
        int n=0;
        while(num>0){
            num=num/10;
            n++;
        }
        num=temp;
        while(num>0){
            rem=num%10;
            sum=sum+(int)Math.pow(rem,n);
            num=num/10;
        }
        if(temp==sum){
            System.out.println("Armstrong number");
        }
        else{
            System.out.println("Not an Armstrong number");
```

```
PROBLEMS 3   OUTPUT   DEBUG CONSOLE   TERMINAL   PORTS   COMMENTS
 sum_no
Enter a number to find sum of its digits
4 4
Sum of digits: 4
(3.10.6) swarajwattamwar@swarajs-MacBook-Air assignment % cd "/Users/swarajwattamwar/Desktop/Semester-2/java/assignment/" && javac sum_no.java && java
 sum_no
Enter a number to find sum of its digits
1234
Sum of digits: 10
(3.10.6) swarajwattamwar@swarajs-MacBook-Air assignment % cd "/Users/swarajwattamwar/Desktop/Semester-2/java/assignment/" && javac ArmStrong.java && java ArmStrong
Enter a number:
23
Not an Armstrong number
(3.10.6) swarajwattamwar@swarajs-MacBook-Air assignment %
```

12.Write a Java program to check if a given number is a prime number.

```java
import java.util.Scanner;

class prime_no {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter a number to check if it is prime or not");
        int num = sc.nextInt();
        boolean isPrime = true;
        if (num <= 1) {
            isPrime = false;
        } else {
            for (int i = 2; i <= num / 2; i++) {
                if (num % i == 0) {
                    isPrime = false;
                    break;
                }
            }
        }
        if (isPrime) {
            System.out.println(num + " is a prime number");
        } else {
            System.out.println(num + " is not a prime number");
        }
```

```
(3.10.6) swarajwattamwar@swarajs-MacBook-Air assignment % cd "/Users/swarajwattamwar/Desktop/Semester-2/java/assignment/" && javac sum_no.java && java
 sum_no
Enter a number to find sum of its digits
1234
Sum of digits: 10
(3.10.6) swarajwattamwar@swarajs-MacBook-Air assignment % cd "/Users/swarajwattamwar/Desktop/Semester-2/java/assignment/" && javac ArmStrong.java && java ArmStrong
Enter a number:
23
Not an Armstrong number
(3.10.6) swarajwattamwar@swarajs-MacBook-Air assignment % cd "/Users/swarajwattamwar/Desktop/Semester-2/java/assignment/" && javac prime_no.java && java prime_no
Enter a number to check if it is prime or not
22
22 is not a prime number
(3.10.6) swarajwattamwar@swarajs-MacBook-Air assignment %
```

13.Write a menu based Java program for performing different arithmetic operations.

```java
import java.util.Scanner;

class arithmetic_op {
    public static void main(String[] args) {
        try (Scanner sc = new Scanner(System.in)) {

            System.out.println("Enter two numbers:");
            double a = sc.nextDouble();
            double b = sc.nextDouble();

            System.out.println("Enter 1 for addition");
            System.out.println("Enter 2 for subtraction");
            System.out.println("Enter 3 for multiplication");
            System.out.println("Enter 4 for division");
            System.out.println("Enter your choice:");
            int choice = sc.nextInt();

            double result;
            switch (choice) {
                case 1:
                    result = a + b;
                    System.out.println("The result of addition is: " + result);
                    break;
```

```
(3.10.6) swarajwattamwar@swarajs-MacBook-Air assignment % cd "/Users/swarajwattamwar/Desktop/Semester-2/java/assignment/" && javac sum_no.java && java
 sum_no
Enter a number to find sum of its digits
1234
Sum of digits: 10
(3.10.6) swarajwattamwar@swarajs-MacBook-Air assignment % cd "/Users/swarajwattamwar/Desktop/Semester-2/java/assignment/" && javac ArmStrong.java && java ArmStrong
Enter a number:
23
Not an Armstrong number
(3.10.6) swarajwattamwar@swarajs-MacBook-Air assignment % cd "/Users/swarajwattamwar/Desktop/Semester-2/java/assignment/" && javac prime_no.java && java prime_no
Enter a number to check if it is prime or not
22
22 is not a prime number
(3.10.6) swarajwattamwar@swarajs-MacBook-Air assignment %
```

```java
class arithmetic_op {
    public static void main(String[] args) {
        int choice = sc.nextInt();

        double result;
        switch (choice) {
            case 1:
                result = a + b;
                System.out.println("The result of addition is: " + result);
                break;
            case 2:
                result = a - b;
                System.out.println("The result of subtraction is: " + result);
                break;
            case 3:
                result = a * b;
                System.out.println("The result of multiplication is: " + result);
                break;
            case 4:
                if (b != 0) {
                    result = a / b;
                    System.out.println("The result of division is: " + result);
                } else {
                    System.out.println("Error: Division by zero is not allowed.");
                }
                break;
            default:
                System.out.println("Invalid choice. Please select a valid option.");
        }
    }
}
```

```
sum_no
Enter a number to find sum of its digits
1234
Sum of digits: 10
(3.10.6) swarajwattamwar@swarajs-MacBook-Air assignment % cd "/Users/swarajwattamwar/Desktop/Semester-2/java/assignment/" && javac ArmStrong.java && java ArmStrong
Enter a number:
23
Not an Armstrong number
(3.10.6) swarajwattamwar@swarajs-MacBook-Air assignment % cd "/Users/swarajwattamwar/Desktop/Semester-2/java/assignment/" && javac prime_no.java && java prime_no
Enter a number to check if it is prime or not
22
22 is not a prime number
(3.10.6) swarajwattamwar@swarajs-MacBook-Air assignment %
```

14.WAP to find average of consecutive N Odd numbers and even numbers.

```java
import java.util.Scanner;

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

        // Input the number of terms
        System.out.println("Enter the value of N:");
        int n = sc.nextInt();

        // Variables to store sums and counts
        int oddSum = 0, evenSum = 0;

        // Calculate sums of first N odd and even numbers
        for (int i = 1; i <= n; i++) {
            // Add to oddSum (Odd numbers: 2*i-1)
            oddSum += (2 * i - 1);

            // Add to evenSum (Even numbers: 2*i)
            evenSum += (2 * i);
        }

        // Calculate averages
```

```
Enter a number:
23
Not an Armstrong number
(3.10.6) swarajwattamwar@swarajs-MacBook-Air assignment % cd "/Users/swarajwattamwar/Desktop/Semester-2/java/assignment/" && javac prime_no.java && java prime_no
Enter a number to check if it is prime or not
22
22 is not a prime number
(3.10.6) swarajwattamwar@swarajs-MacBook-Air assignment % cd "/Users/swarajwattamwar/Desktop/Semester-2/java/assignment/" && javac even_odd.java && java even_odd
Enter the value of N:
23
The average of the first 23 odd numbers is: 23.0
The average of the first 23 even numbers is: 24.0
(3.10.6) swarajwattamwar@swarajs-MacBook-Air assignment %
```