## JAVA PROGRAMMES

1.Aim:Checkwhether a give number is odd or even. Code: import java.util.Scanner; public class Main1 { public static void main(String[] args) { Scanner scanner = new Scanner(System.in); System.out.print("Enter a number: "); int number = scanner.nextInt(); if (number % 2 == 0) { System.out.println(number + " is Even."); } else { System.out.println(number + " is Odd."); } scanner.close(); }

```
}
Output:
Microsoft Windows [Version 10.0.26100.3323]
(c) Microsoft Corporation. All rights reserved.
C:\Users\prodd\Desktop>javac Main1.java
C:\Users\prodd\Desktop>java Main1
Enter a number: 77
77 is Odd.
C:\Users\prodd\Desktop>
2.Aim:Factorial of a given number.
Code:
import java.util.Scanner;
public class Main2 {
  public static void main(String[] args) {
    Scanner scanner = new Scanner(System.in);
    System.out.print("Enter a number: ");
    int number = scanner.nextInt();
    long factorial = 1;
```

```
for (int i = 1; i <= number; i++) {
    factorial *= i;
}

System.out.println("Factorial of " + number + " is " +
factorial);

scanner.close();
}

Output:</pre>
```

```
C:\Windows\System32\cmd.e × + \version 10.0.26100.3323]

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[:\Users\prodd\Desktop>javac Main2.java
[:\Users\prodd\Desktop>java Main2
[nter a number:
[actorial of 4 is 24]
[:\Users\prodd\Desktop>
```

3.AIM:Reverse a number.

Code:

```
import java.util.Scanner;
public class Main3 {
  public static void main(String[] args) {
    Scanner scanner = new Scanner(System.in);
    System.out.print("Enter a number: ");
    int number = scanner.nextInt();
    int reversed = 0;
    while (number != 0) {
      int digit = number % 10;
       reversed = reversed * 10 + digit;
      number /= 10;
    }
    System.out.println("Reversed number: " + reversed);
    scanner.close();
  }
```

## Output:

```
C:\Windows\System32\cmd.e × + \

Microsoft Windows [Version 10.0.26100.3323]
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C:\Users\prodd\Desktop>javac Main3.java

C:\Users\prodd\Desktop>java Main3

Enter a number: 67

Reversed number: 76

C:\Users\prodd\Desktop>
```

4. Aim: check whether a number is palindrome or not.

## Code:

import java.util.Scanner;

```
public class Main4 {
  public static void main(String[] args) {
    Scanner scanner = new Scanner(System.in);

    System.out.print("Enter a number: ");
    int number = scanner.nextInt();
    int originalNumber = number;
```

```
int reversed = 0;
    while (number != 0) {
      int digit = number % 10;
      reversed = reversed * 10 + digit;
      number /= 10;
    }
    if (originalNumber == reversed) {
      System.out.println(originalNumber + " is a
palindrome.");
    } else {
      System.out.println(originalNumber + " is not a
palindrome.");
    }
    scanner.close();
  }
}
Output:
```

```
C:\Windows\System32\cmd.e: X
Microsoft Windows [Version 10.0.26100.3323]
(c) Microsoft Corporation. All rights reserved.
C:\Users\prodd\Desktop>javac Main4.java
C:\Users\prodd\Desktop>java Main4
Enter a number: 976654
976654 is not a palindrome.
C:\Users\prodd\Desktop>
5.Aim:Multiples of 2 upto 12.
Code:
import java.util.Scanner;
public class Main5 {
  public static void main(String[] args) {
    System.out.println("Multiples of 2 up to 12:");
    for (int i = 1; i <= 12; i++) {
      System.out.println("2 x " + i + " = " + (2 * i));
    }
  }
}
```

## Output:

```
C:\Windows\System32\cmd.e: X
                              + ~
Microsoft Windows [Version 10.0.26100.3323]
(c) Microsoft Corporation. All rights reserved.
C:\Users\prodd\Desktop>javac Main5.java
C:\Users\prodd\Desktop>java Main5
Multiples of 2 up to 12:
2 \times 1 = 2
2 \times 2 = 4
2 \times 3 = 6
2 \times 4 = 8
2 \times 5 = 10
 x 6 = 12
2 \times 7 = 14
2 \times 8 = 16
2 \times 9 = 18
2 \times 10 = 20
2 \times 11 = 22
2 \times 12 = 24
C:\Users\prodd\Desktop>
```

6.Aim:Qudratic equation roots.

Code:

import java.util.Scanner;

public class Main6 {

```
public static void main(String[] args) {
    Scanner scanner = new Scanner(System.in);
    System.out.print("Enter coefficient a: ");
    double a = scanner.nextDouble();
    System.out.print("Enter coefficient b: ");
    double b = scanner.nextDouble();
    System.out.print("Enter coefficient c: ");
    double c = scanner.nextDouble();
    double discriminant = b * b - 4 * a * c;
    if (discriminant > 0) {
       double root1 = (-b + Math.sqrt(discriminant)) / (2 * a);
       double root2 = (-b - Math.sqrt(discriminant)) / (2 * a);
       System.out.println("Roots are real and distinct: " +
root1 + " and " + root2);
    } else if (discriminant == 0) {
       double root = -b / (2 * a);
```

```
System.out.println("Roots are real and equal: " + root);
} else {
    double realPart = -b / (2 * a);
    double imaginaryPart = Math.sqrt(-discriminant) / (2 * a);
    System.out.println("Roots are imaginary: " + realPart + " ± " + imaginaryPart + "i");
}
scanner.close();
}
Output:
```

```
C:\Windows\System32\cmd.e \times + \times

Microsoft Windows [Version 10.0.26100.3323]

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C:\Users\prodd\Desktop>javac Main6.java

C:\Users\prodd\Desktop>java Main6

Enter coefficient a:

I enter coefficient b: 5

Enter coefficient c: 3

Roots are imaginary: -0.625 ?± 0.5994789404140899i

C:\Users\prodd\Desktop>
```

```
7.Aim: To Find Hypotenuse of a Triangle
Code:
import java.util.Scanner;

public class Main7
{
    public static void main(String[] args) {
        double x;
        double y;
```

```
double z;
          Scanner scanner = new Scanner(System.in);
          System.out.println("Enter side x: ");
          x =scanner.nextDouble();
       System.out.println("Enter side y: ");
       y =scanner.nextDouble();
       z = Math.sqrt((x*x)+(y*y));
       System.out.println("The hypotenuse is: "+z);
       scanner.close();
    }
}
Output:
```

```
Microsoft Windows [Version 10.0.26100.3323]
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C:\Users\prodd\Desktop>javac java.Main7
error: Class names, 'java.Main7', are only accepted if annotation processing is expl
1 error

C:\Users\prodd\Desktop>javac Main7.java

C:\Users\prodd\Desktop>javac Main7
Enter side a: 3
Enter side b: 4
The hypotenuse is: 5.0

C:\Users\prodd\Desktop>
```

```
8.AIM:Square root of a number.
Code:
import java.util.Scanner;
public class SquareRootCalculator {
  public static void main(String[] args) {
    Scanner scanner = new Scanner(System.in);
    System.out.print("Enter a number: ");
    double number = scanner.nextDouble();
    if (number < 0) {
      System.out.println("Square root of a negative number
is not real.");
```

```
} else {
      double squareRoot = Math.sqrt(number);
      System.out.println("The square root of " + number + "
is: " + squareRoot);
    }
    scanner.close();
 }
}
Output:
    C:\Windows\System32\cmd.e: ×
Microsoft Windows [Version 10.0.26100.3323]
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C:\Users\prodd\Desktop>javac Main8.java
C:\Users\prodd\Desktop>java Main8
Enter a number: 4
```

9.Aim:Armstrong of a number.

C:\Users\prodd\Desktop>

The square root of 4.0 is: 2.0

Code:

import java.util.Scanner;

```
public class Main9 {
  public static boolean isArmstrong(int num) {
    int originalNum = num, sum = 0, digits = 0;
    int temp = num;
    while (temp > 0) {
      temp /= 10;
      digits++;
    }
    temp = num;
    while (temp > 0) {
      int digit = temp % 10;
      sum += Math.pow(digit, digits);
      temp /= 10;
    }
    return sum == originalNum;
  }
```

```
public static void main(String[] args) {
    Scanner scanner = new Scanner(System.in);
    System.out.print("Enter a number: ");
    int number = scanner.nextInt();
    if (isArmstrong(number)) {
      System.out.println(number + " is an Armstrong
number.");
    } else {
      System.out.println(number + " is not an Armstrong
number.");
    }
    scanner.close();
  }
}
Output:
```

```
C:\Windows\System32\cmd.e: X
Microsoft Windows [Version 10.0.26100.3323]
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C:\Users\prodd\Desktop>javac Main9.java
C:\Users\prodd\Desktop>java Main9
Enter a number: 153
153 is an Armstrong number.
C:\Users\prodd\Desktop>
10. Aim: greastest of three numbers.
Code:
import java.util.Scanner;
public class Main10 {
  public static void main(String[] args) {
    Scanner scanner = new Scanner(System.in);
    System.out.print("Enter first number: ");
    int a = scanner.nextInt();
    System.out.print("Enter second number: ");
    int b = scanner.nextInt();
```

```
System.out.print("Enter third number: ");
    int c = scanner.nextInt();
    int greatest;
    if (a >= b \&\& a >= c) {
       greatest = a;
    } else if (b >= a && b >= c) {
       greatest = b;
    } else {
       greatest = c;
    }
    System.out.println("The greatest number is: " + greatest);
    scanner.close();
  }
Output:
```

C:\Windows\System32\cmd.e: × + v

Microsoft Windows [Version 10.0.26100.3323] (c) Microsoft Corporation. All rights reserved.

C:\Users\prodd\Desktop>javac Main10.java

C:\Users\prodd\Desktop>java Main10

Enter first number: 4
Enter second number: 7
Enter third number: 9

The greatest number is: 9

C:\Users\prodd\Desktop>