

## 1. Check Whether a Character is a Vowel or Consonant

Input: A single alphabet character

Output: Whether it is a vowel or a consonant

Example: 'a' → Vowel, 'z' → Consonant

### Program:

```
import java.util.*;

class Main {

    public static void main(String[] args) {

        Scanner sc=new Scanner(System.in);

        char c=sc.next().charAt(0);

        if(c=='a' || c=='e' || c=='i' || c=='o' || c=='u' || c=='A' || c=='E' || c=='I' || c=='O' || c=='U')

        {

            System.out.print(c+ " is a Vowel");

        }

        else{

            System.out.print(c+ " is a Consonant");

        }

    }

}
```

### Output:

e  
e is a Vowel

## 2. Print the Grade Based on Marks

Input: Marks (0 to 100)

Use if-else ladder to print:

90–100 → Grade A

75–89 → Grade B

60–74 → Grade C

40–59 → Grade D

Below 40 → Fail

```
import java.util.*;
class Main {

    public static void main(String[] args) {

        Scanner sc=new Scanner(System.in);

        int marks=sc.nextInt();

        if(marks>=90&&marks<=100){

            System.out.print("Grade A");

        }

        else if(marks>=75&&marks<=89){ System.out.print("Grade
B");

        }

        else if(marks>=60&&marks<=74){

            System.out.print("Grade C");

        }

        else if(marks>=40&&marks<=59){

            System.out.print("Grade D");

        }

        else if(marks<40){

            System.out.print("Fail");

        }

    }

}
```

```
        else{  
            System.out.print("Invalid Marks");  
        }  
    }  
}
```

**Output:**

78

Grade B

### 3. Simple Interest or Compound Interest Calculator

Input: User chooses 1 for Simple Interest, 2 for Compound Interest Take

input for P (principal), R (rate), T (time)

Output: Display the calculated interest

#### Program:

```
import java.util.*;

class Main {

    public static void main(String[] args) {

        Scanner sc=new Scanner(System.in);

        int p=sc.nextInt();

        int r=sc.nextInt();

        int t=sc.nextInt();

        int SI=(p*r*t)/100;

        double a=p*Math.pow((1+(r/100.0)),t);

        double CI=a-p;

        System.out.println(SI);

        System.out.println(CI);

    }

}
```

#### Output:

```
1
2000
4
3
240
```

#### 4. Print All Prime Numbers from 1

to N Input: A number N

Output: All prime numbers between 1 and N using for loop and if conditions

##### Program:

```
import java.util.Scanner;

public class
PrimeNumbers {

    public static void main(String[]
        args) { Scanner s = new
        Scanner(System.in); int N =
        s.nextInt();
        for (int i = 2; i <= N;
            i++) { boolean
            prime = true;
            for (int j = 2; j <= i / 2;
                j++) { if (i % j == 0) {
                    prime =
                    false;
                    break;
                }
            }
            if (prime) {

                System.out.print(i + " ");

            }
        }
    }
```

}

**Output:**

15

2 3 5 7 11 13