

Program:

```
import java.util.HashSet;  
import java.util.Scanner;  
import java.util.Set;
```

```
public class Main {
```

```
    static String getPrimeFactors(long number){  
        Set<Integer> setPrimeFactors = new HashSet<>();  
        for (int i = 2; i<= number; i++) {  
            if (number % i == 0) {  
                setPrimeFactors.add(i);  
                number = number/ i;  
                i--;  
            }  
        }  
        return setPrimeFactors.toString();  
    }
```

```
    public static void main(String[] args) {
```

```
        boolean isPrime = true;  
        int temp;
```

```
        Scanner sc = new Scanner(System.in);  
        System.out.print("Enter any Number : ");  
        int number = sc.nextInt();
```

```
for(int i=2;i<=number/2;i++) {  
    temp = number % i;  
    if (temp == 0) {  
        isPrime = false;  
        break;  
    }  
}  
if(isPrime)  
    System.out.println(number + " is a prime number");  
  
else  
    System.out.println("Prime Factors of "+number+" is : "+getPrimeFactors(number));  
  
}  
}
```

Output:

```

1
2 import java.util.HashSet;
3 import java.util.Scanner;
4 import java.util.Set;
5
6
7 public class Main {
8
9     static String getPrimeFactors(long number){
10         Set<Integer> setPrimeFactors = new HashSet<>();
11         for (int i = 2; i<= number; i++) {
12             if (number % i == 0) {
13                 setPrimeFactors.add(i);
14                 number = number/ i;
15                 i--;
16             }
17         }
18         return setPrimeFactors.toString();
19     }
20 }
21
22 public static void main(String[] args) {
23
24     boolean isPrime = true;
25     int temp;
26
27     Scanner sc = new Scanner(System.in);
28     System.out.print("Enter any Number : ");
29     int number = sc.nextInt();
30
31     for(int i=2;i<=number/2;i++) {
32         temp = number % i;
33         if (temp == 0) {
34             isPrime = false;
35             break;
36         }
37     }
38     if(isPrime)

```

```

PS C:\Users\Keerthivasan K\desktop\java> javac Main.java
PS C:\Users\Keerthivasan K\desktop\java> java Main
Enter any Number : 13
13 is a prime number
PS C:\Users\Keerthivasan K\desktop\java> java Main
Enter any Number : 54
Prime Factors of 54 is : [2, 3]
PS C:\Users\Keerthivasan K\desktop\java>

```

```

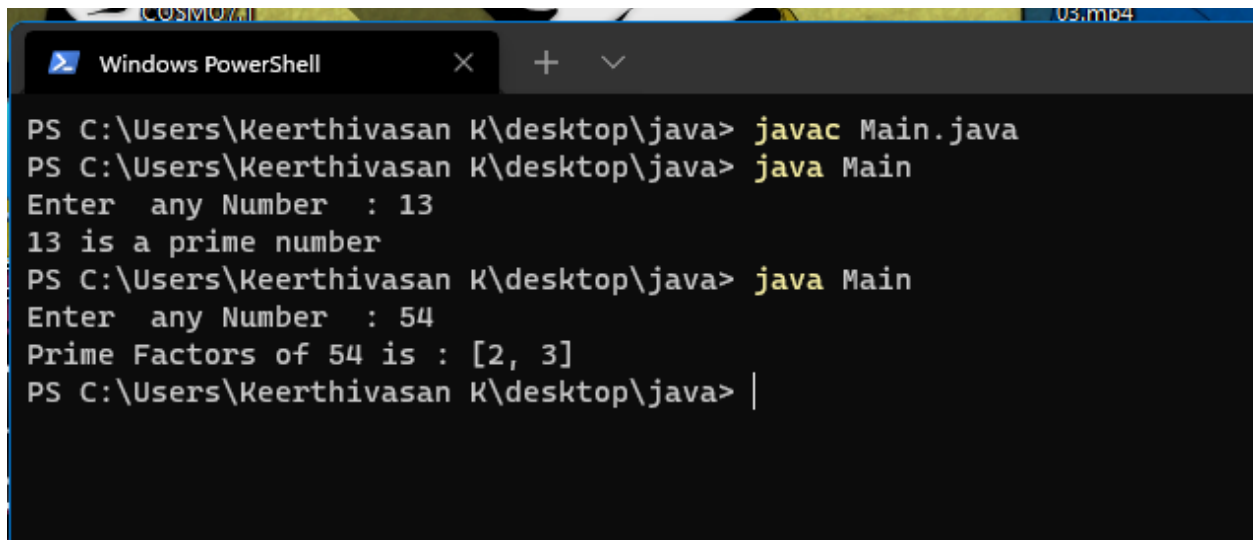
13         setPrimeFactors.add(i);
14         number = number/ i;
15         i--;
16     }
17 }
18     return setPrimeFactors.toString();
19 }
20
21 public static void main(String[] args) {
22
23     boolean isPrime = true;
24     int temp;
25
26     Scanner sc = new Scanner(System.in);
27     System.out.print("Enter any Number : ");
28     int number = sc.nextInt();
29
30     for(int i=2;i<=number/2;i++) {
31         temp = number % i;
32         if (temp == 0) {
33             isPrime = false;
34             break;
35         }
36     }
37     if(isPrime)
38         System.out.println(number + " is a prime number");
39     else
40         System.out.println("Prime Factors of "+number+" is : ");
41 }
42
43
44
45
46
47 }

```

```

PS C:\Users\Keerthivasan K\desktop\java> javac Main.java
PS C:\Users\Keerthivasan K\desktop\java> java Main
Enter any Number : 13
13 is a prime number
PS C:\Users\Keerthivasan K\desktop\java> java Main
Enter any Number : 54
Prime Factors of 54 is : [2, 3]
PS C:\Users\Keerthivasan K\desktop\java>

```



```
Windows PowerShell
PS C:\Users\Keerthivasan K\desktop\java> javac Main.java
PS C:\Users\Keerthivasan K\desktop\java> java Main
Enter any Number : 13
13 is a prime number
PS C:\Users\Keerthivasan K\desktop\java> java Main
Enter any Number : 54
Prime Factors of 54 is : [2, 3]
PS C:\Users\Keerthivasan K\desktop\java> |
```