Prime Number Program in Java

Prime number in Java: **Prime number** is a number that is greater than 1 and divided by 1 or itself only. In other words, prime numbers can't be divided by other numbers than itself or 1. For example 2, 3, 5, 7, 11, 13, 17.... are the prime numbers.

Note: 0 and 1 are not prime numbers. The 2 is the only even prime number because all the other even numbers can be divided by 2.

Let's see the prime number program in java. In this java program, we will take a number variable and check whether the number is prime or not.

1. **public** **class** PrimeExample{
2. **public** **static** **void** main(String args[]){
3. **int** i,m=0,flag=0;
4. **int** n=3;//it is the number to be checked
5. m=n/2;
6. **if**(n==0||n==1){
7. System.out.println(n+" is not prime number");
8. }**else**{
9. **for**(i=2;i<=m;i++){
10. **if**(n%i==0){
11. System.out.println(n+" is not prime number");
12. flag=1;
13. **break**;
14. }
15. }
16. **if**(flag==0)  { System.out.println(n+" is prime number"); }
17. }//end of else
18. }
19. }

[**Test it Now**](https://www.javatpoint.com/opr/test.jsp?filename=PrimeExample)

Output:

3 is prime number

Prime Number Program using Method in Java

1. **public** **class** PrimeExample2{
2. **static** **void** checkPrime(**int** n){
3. **int** i,m=0,flag=0;
4. m=n/2;
5. **if**(n==0||n==1){
6. System.out.println(n+" is not prime number");
7. }**else**{
8. **for**(i=2;i<=m;i++){
9. **if**(n%i==0){
10. System.out.println(n+" is not prime number");
11. flag=1;
12. **break**;
13. }
14. }
15. **if**(flag==0)  { System.out.println(n+" is prime number"); }
16. }//end of else
17. }
18. **public** **static** **void** main(String args[]){
19. checkPrime(1);
20. checkPrime(3);
21. checkPrime(17);
22. checkPrime(20);
23. }
24. }

[**Test it Now**](https://www.javatpoint.com/opr/test.jsp?filename=PrimeExample2)

Output:

1 is not prime number

3 is prime number

17 is prime number

20 is not prime number

Prime Number Program in Java (Another way)

You can also use a method where number is not predefined. Here, user has to put the number to check if the number is prime.

1. import java.util.Scanner;
3. import java.util.Scanner;
5. **public** **class** PrimeExample3 {
7. **public** **static** **void** main(String[] args) {
8. Scanner s = **new** Scanner(System.in);
9. System.out.print("Enter a number : ");
10. **int** n = s.nextInt();
11. **if** (isPrime(n)) {
12. System.out.println(n + " is a prime number");
13. } **else** {
14. System.out.println(n + " is not a prime number");
15. }
16. }
18. **public** **static** boolean isPrime(**int** n) {
19. **if** (n <= 1) {
20. **return** **false**;
21. }
22. **for** (**int** i = 2; i < Math.sqrt(n); i++) {
23. **if** (n % i == 0) {
24. **return** **false**;
25. }
26. }
27. **return** **true**;
28. }
29. }

Output:

**Use image PrimeExample1**

Find prime numbers between two numbers

You can also find prime numbers between two specified numbers.

1. import java.util.Scanner;
2. **public** **class** PrimeExample4 {
3. **public** **static** **void** main(String[] args) {
4. Scanner s = **new** Scanner(System.in);
5. System.out.print("Enter the first number : ");
6. **int** start = s.nextInt();
7. System.out.print("Enter the second number : ");
8. **int** end = s.nextInt();
9. System.out.println("List of prime numbers between " + start + " and " + end);
10. **for** (**int** i = start; i <= end; i++) {
11. **if** (isPrime(i)) {
12. System.out.println(i);
13. }
14. }
15. }
16. **public** **static** boolean isPrime(**int** n) {
17. **if** (n <= 1) {
18. **return** **false**;
19. }
20. **for** (**int** i = 2; i <= Math.sqrt(n); i++) {
21. **if** (n % i == 0) {
22. **return** **false**;
23. }
24. }
25. **return** **true**;
26. }
27. }

Output:

**Use image PrimeExample2**