$n = 24$

↳ find the factors of 'n' ?

↳ 2 - 3 minutes.

24 = 1, 2, 3, 4, 6, 8, 12, 24

→ 24 (2 ==)
↳ remainder = 0

→ 'i' is called a factor of 'n' when "n % a == 0"

→ 1 is a factor of every no
↓
smallest value

→ 'n' is the largest factor of no 'n'

```
for (int i = 1; i <= n; i++)
{
    if (n % i == 0)
    {
        cout (i + " ");
    }
}
```

n = 12

i = 1 <= 12 (T) — 12 % 1 == 0 (T)

i = 2 <= 12 (T) — 12 % 2 == 0 (T)

i = 3 <= 12 (T) — 12 % 3 == 0 (T)

i = 4 <= 12 (T) — 12 % 4 == 0 (T)

i = 5 <= 12 (T) — 12 % 5 == 0 (F)

i = 6 <= 12 (T) — 12 % 6 == 0 (T)

i = 7 <= 12 (T) — 12 % 7 == 0 (F)

i = 8 <= 12 (T) — 12 % 8 == 0 (F)

i = 9 <= 12 (T) — 12 % 9 == 0 (F)

i = 10 <= 12 (T) — 12 % 10 == 0 (F)

i = 11 <= 12 (T) — 12 % 11 == 0 (F)

i = 12 <= 12 (T) — 12 % 12 == 0 (T)

i = 13 <= 12 (F)

O/P

1 2 3 4 6 12

```java
import java.io.*;
import java.util.*;

public class Solution {

    public static void main(String[] args) {
        /* Enter your code here. Read input from STDI
        int n = 24;
        for(int i=1;i<=n;i++){
            if(n%i == 0){
                System.out.print(i + " ");
            }
        }
    }
}
```

Your Output

```
1 2 3 4 6 8 12 24
```

n = 24

↳ 1 2 3 4 6 8 12 24

f1 f2

1 * 24 = 24

2 * 12 = 24

3 * 8 = 24

4 * 6 = 24

n = 36

↳ 1, 2, 3, 4, 6, 9, 12, 18, 36

f1 f2

1 * 36 = 36

2 * 18 = 36

3 * 12 = 36

4 * 9 = 36

6 * 6 = 36

$f1 * f2 = n$

$\Rightarrow f2 * f2 = n$ → $f2 = \sqrt{n}$

$\Rightarrow f2^2 = n$

① $f1 < f2$

② $f1 = f2$

$\Rightarrow$ $f1 <= f2$ — ①

$f1 \Rightarrow$

$f2 = \frac{n}{f1}$

$i <= \sqrt{n}$

for(int i = 1 ; i * i <= n ; i++)

{ if (n % i == 0) {

$f2 = \frac{n}{i}$; → if (i == f2)

}

}

for(int i=1; i<=n; i++)

1 → n

n iterations.

$\sqrt{n}$ iterations

$i <= \sqrt{n}$.

$i^2 <= n$

$i * i <= n$.

$\sqrt{n}$

n ** 0.5

i * i = n

$\sqrt{n}$ Math.sqrt

Your Output

```
1 24 2 12 3 8 4 6
```

n → 24

6 iterations.

$\sqrt{n} \rightarrow \sqrt{24} = 4$

↓

4 iterations

36 = 6

1 * 1 <= 24

```java
import java.io.*;
import java.util.*;

public class Solution {

    public static void main(String[] args) {
        /* Enter your code here. Read input from STDIN. Pri
        int n = 24;
        for(int i=1;i*i<=n;i++){
            if(n%i == 0){
                System.out.print(i + " ");
                int f2 = n/i;
                if(f2 != i){
                    System.out.print(f2 + " ");
                }
            }
        }
    }
}
```

→ To remove duplicate factors

i = 6 → 36 % 6 == 0 (T) → f2 = 36/6 = 6

2 * 2 <= 24

3 * 3 <= 24

4 * 4 <= 24

5 * 5 <= 24

i = 1 (T) → 24 % 1 == 0 (T) → f2 = 24/1 = 24

i = 2 (T) → 24 % 2 == 0 (T) → f2 = 24/2 = 12

i = 3 (T) → 24 % 3 == 0 (T) → f2 = 24/3 = 8

i = 4 (T) → 24 % 4 == 0 (T) → f2 = 24/4 = 6

i = 5 (F)

1, 24
2, 12
3, 8
4, 6

4 9:10 pm

Check Prime Number (03rd June)

Problem | Submissions | Leaderboard | Discussions

1. You've to check whether a given number is prime or not.

2. Take a number "n"

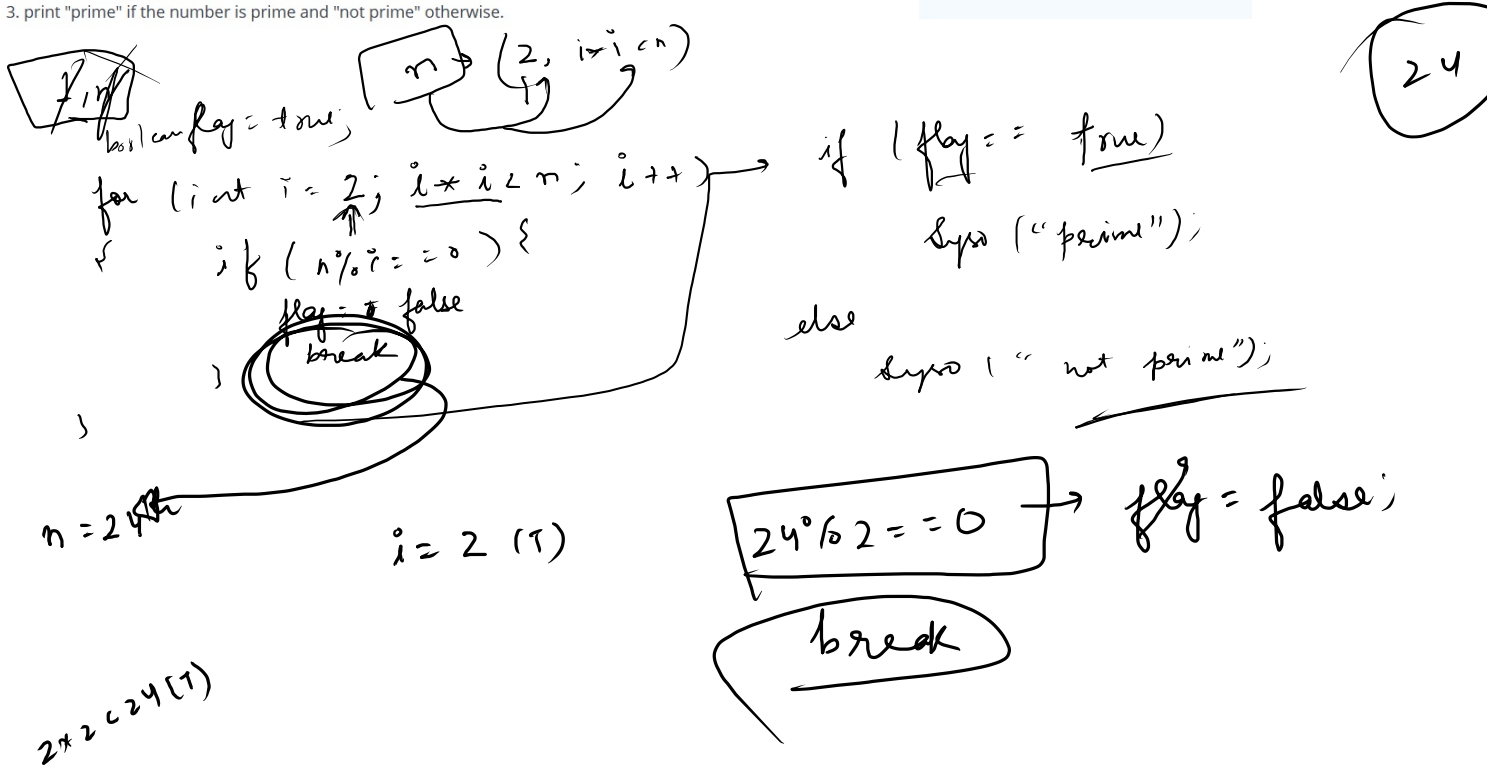
3. print "prime" if the number is prime and "not prime" otherwise.

Sample Input 0

```
13
```

Sample Output 0

```
prime
```



```java
import java.io.*;
import java.util.*;

public class Solution {

    public static void main(String[] args) {
        /* Enter your code here. Read input from STDIN. Print outp
        Scanner scn = new Scanner(System.in);
        int n = scn.nextInt();
        boolean flag = true;
        for(int i = 2 ;i *i <= n;i++){
            if(n%i == 0){
                flag = false;
                break;
            }
        }

        if (flag == true){
            System.out.println("prime");
        }
        else{
            System.out.println("not prime");
        }
    }
}
```