Shraddhesh-08

Detail Notes

FLAG VARIABAL

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Q. WHAT IS A FLAG VARIABLE?

A flag variable is a variable that holds true or false value.
It is used to indicate whether a certain condition is met or not in a program.
It works like a signal to show if something happened.

Example:

```
 boolean flag = false;
if (a == b) {
    flag = true;
}


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```

Here, the flag shows whether a and b are equal or not.

Q. WHY DO WE USE FLAG VARIABLES?

Sometimes, when we use if-else inside a loop,
both blocks keep running in every iteration — this can give wrong or unpredictable results.
In such cases, we use a flag variable to handle the logic correctly.

simple words:

A flag variable is used to mark when a certain condition becomes true inside a loop, and then decide the result after the loop.

◆ Short Summary:

Flag variable → holds true/false value.
Used for → checking if a condition happened inside a loop.
Benefit → gives clear and correct output.

Syntax of Flag

```
boolean flag = false;   // Step 1: Declare and initialize flag variable

while(condition) {     // Step 2: Loop starts
   if(someCondition) {
      flag = true;   // Step 3: Update flag if condition is true
      break;         // (optional) exit loop if needed
   }
}

if(flag) {           // Step 4: Check flag after loop
   System.out.println("Condition is true");
} else {
   System.out.println("Condition is false");
}
```

Example :

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

        System.out.print("Enter a number: ");
        int n = sc.nextInt();

        boolean flag = false;

        int i = 2;
        while (i <= n / 2) {
            if (n % i == 0) {
                flag = true;
                break;
            }
            i++;
        }

        if (!flag) {
            System.out.println(n + " is a Prime Number");
        } else {
            System.out.println(n + " is Not a Prime Number");
        }

    }
}
```

Output

```
D:\SHRADDHESH-08>javac Demo.java

D:\SHRADDHESH-08>java Demo
Enter a number: 5
5 is a Prime Number

D:\SHRADDHESH-08>
```