

Question 1: What is control flow in JavaScript? Explain how if-else statements work with an example.

Answer:

Control flow means **the order in which JavaScript runs your code**.

Sometimes you want the code to make decisions — for example:

- If age $\geq 18 \rightarrow$ allow login
- If marks $\geq 35 \rightarrow$ pass
- If raining \rightarrow take umbrella

These decisions are done using **if-else**.

How if-else works:

- **if** \rightarrow runs when the condition is **true**
- **else** \rightarrow runs when the condition is **false**
- **else if** \rightarrow used for multiple conditions

Example:

```
let marks = 75;
```

```
if (marks >= 90) {  
    console.log("Grade A");  
} else if (marks >= 60) {  
    console.log("Grade B");  
} else {  
    console.log("Grade C");  
}
```

Question 2: Describe how switch statements work. When should you use switch instead of if-else?

Answer:

A switch statement is used when you have **many conditions for one variable**. It checks the value and matches it with different **cases**.

How switch works:

- Each **case** is checked one by one
- When it matches → that block runs
- **break** stops the switch
- default runs when no case matches

When to use switch?

Use **switch** when:

- You have multiple choices
- You are checking the **same variable**
- Code looks messy with many else-if

Example uses:

- Days of week
- Months
- Menu options
- Grades

Example of Switch:

```
let color = "green";
```

```
switch (color) {  
    case "red":  
        console.log("Stop");  
        break;
```

```
case "yellow":  
    console.log("Wait");  
    break;  
  
case "green":  
    console.log("Go");  
    break;  
  
default:  
    console.log("Invalid color");  
}
```