

Chapter 3

1. if Statement

✓ Definition:

The if statement executes a block of code only if the condition is true.

```
let age = 20;  
if (age >= 18) {  
  console.log("You are an adult.");  
}
```

2. if-else Statement

✓ Definition:

Executes one block if the condition is true, otherwise executes another block.

```
let number = 10;  
if (number % 2 === 0) {  
  console.log("Even number");  
}
```

```
} else {  
  console.log("Odd number");  
}
```

3. if-else if-else statement

✓ Definition:

Checks multiple conditions and executes the first matching block.

```
let score = 85;  
if (score >= 90) {  
  console.log("Grade: A");  
} else if (score >= 75) {  
  console.log("Grade: B");  
} else {  
  console.log("Grade: C");  
}
```

4. switch Statement

✓ Definition:

Used to check multiple cases for a variable.

```
let day = 3;  
switch (day) {  
  case 1:  
    console.log("Monday");  
    break;  
  case 2:  
    console.log("Tuesday");  
    break;  
  case 3:  
    console.log("Wednesday");  
    break;  
  default:  
    console.log("Invalid day");  
}
```

5. for Loop

✅ Definition:

Repeats a block of code a known number of times.

```
for (let i = 1; i <= 5; i++) {
```

```
console.log("Iteration:", i);  
}
```

6. while Loop

✓ Definition:

Repeats a block of code while a condition is true.

```
let count = 1;  
while (count <= 5) {  
  console.log("Count:", count);  
  count++;  
}
```

7. do-while Loop

✓ Definition:

Executes the loop at least once, then checks the condition.

```
let num = 1;  
do {
```

```
console.log("Number:", num);
```

```
num++;
```

```
} while (num <= 5);
```

8. for...in Loop

✓ Definition:

Iterates over the keys of an object.

```
let student = { name: "Alice", age: 22, grade: "A" };
```

```
for (let key in student) {
```

```
  console.log(key, ":", student[key]);
```

```
}
```

9. for...of Loop

✓ Definition:

Iterates over the values of an iterable (array, string).

```
let numbers = [10, 20, 30];
```

```
for (let num of numbers) {
```

```
  console.log(num);
```

```
}
```

10. break Statement

✓ Definition:

Exits a loop immediately.

```
for (let i = 1; i <= 10; i++) {  
  if (i === 5) {  
    break;  
  }  
  console.log(i);  
}
```

11. continue Statement

✓ Definition:

Skips the current iteration and continues.

```
for (let i = 1; i <= 5; i++) {  
  if (i === 3) {  
    continue;  
  }  
  console.log(i);  
}
```



```
}
```

12. Labeled Statements

✓ Definition:

Allows breaking/continuing nested loops.

```
outerLoop:
```

```
for (let i = 1; i <= 3; i++) {  
  for (let j = 1; j <= 3; j++) {  
    if (i === 2 && j === 2) {  
      break outerLoop;  
    }  
    console.log(`i=${i}, j=${j}`);  
  }  
}
```