skill academy

Foundation for Coding (Lect 3)

Anurag Parashar

Switch Case

- A switch statement, also known as a switch case, is a control flow statement in programming languages, including JavaScript. It provides a way to select one of many code blocks to be executed based on the value of a given expression.
- The switch statement evaluates an expression once and then compares the resulting value with multiple cases. It executes the code block associated with the first matching case. If no case matches, an optional default block is executed.

Switch Case Syntax

```
switch (expression) {
case value1:
 // code to be executed when expression matches value1
break;
case value2:
 // code to be executed when expression matches value2
break;
 // additional cases...
default:
 // code to be executed when none of the cases match
break;
}
```

Write a JavaScript program that takes a day number (1-7) as input and displays the corresponding day of the week using a switch case.

```
let dayNumber = 4;
let day;
switch (dayNumber) {
case 1:
day = "Sunday";
break;
case 2:
day = "Monday";
break;
case 3:
day = "Tuesday";
break;
case 4:
day = "Wednesday";
break;
```

Write a JavaScript program that takes a day number (1-7) as input and displays the corresponding day of the week using a switch case.

```
case 5:
day = "Thursday";
break;
case 6:
day = "Friday";
break;
case 7:
day = "Saturday";
break;
default:
day = "Invalid day number";
break; }
console.log("The corresponding day is: " + day);
```

Looping statements (for, while, do-while):

- Looping statements allow you to execute a block of code repeatedly as long as a certain condition is true.
- The "for" loop is commonly used when you know the number of iterations in advance. It consists of an initialization, a condition, an increment or decrement, and the code block to execute.
- The "while" loop is used when you want to repeat a block of code as long as a certain condition is true. It only has a condition and the code block to execute.
- In JavaScript, the do-while loop is a control flow statement that executes a block of code repeatedly until a specified condition evaluates to false.

while loop:

```
while (condition) {
  // code to be executed
}
```

The while loop executes a block of code repeatedly as long as the specified condition is true. It first checks the condition, and if it evaluates to true, it executes the code block. After each iteration, it checks the condition again. If the condition evaluates to false, the loop terminates, and the program continues with the next statement after the loop.

do-while loop:

```
do {
  // code to be executed
} while (condition);
```

The do-while loop is similar to the while loop, but it first executes the code block and then checks the condition. If the condition evaluates to true, it continues to execute the code block. After each iteration, it checks the condition again. The do-while loop guarantees that the code block will execute at least once, regardless of the condition.

For Loop:

```
for (initialization; condition; increment/decrement) {
  // code to be executed
}
```

The for loop is commonly used when you know the number of iterations in advance. It consists of three parts: initialization, condition, and increment/decrement. The initialization sets the starting point, the condition is checked before each iteration, and the increment/decrement is executed after each iteration. If the condition evaluates to true, the code block is executed. If the condition evaluates to false, the loop terminates.

JavaScript program to check if a given number is positive or negative:

```
let number = 10;

if (number > 0) {
  console.log("The number is positive.");
} else if (number < 0) {
  console.log("The number is negative.");
} else {
  console.log("The number is zero.");
}
```

JavaScript program to check if a given number is even or odd:

```
let number = 7;
if (number % 2 === 0) {
console.log("The number is even.");
} else
{ console.log("The number is odd.");
}
```

JavaScript program to determine if a person is eligible to vote based on their age:

```
let age = 18;
if (age >= 18) {
console.log("You are eligible to vote.");
} else {
console.log("You are not eligible to vote
yet.");
}
```

Write a JavaScript program to print the numbers from 1 to 5 using a while loop, do-while loop, and for loop.

While Loop:

```
let i = 1;
while (i <= 5) {
console.log(i); i++; `
}
```

Write a JavaScript program to print the numbers from 1 to 5 using a while loop, do-while loop, and for loop.

do-While Loop:

```
let i = 1;
do {
console.log(i);
i++;
} while (i <= 5);
```

Write a JavaScript program to print the numbers from 1 to 5 using a while loop, do-while loop, and for loop.

For Loop:

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

What are Algorithms:

Algorithms are step-by-step procedures or sets of rules designed to solve specific problems or perform specific tasks. They are a fundamental concept in computer science and are used in various fields of study, including programming, mathematics, and problem-solving.

An algorithm can be thought of as a recipe or a set of instructions that guide the computer or the person implementing it on how to solve a problem or complete a task. It defines the sequence of actions to be taken, the order in which they should be performed, and the conditions or criteria for making decisions during the process.

Thank You