

Web Programming 2X1

JavaScript Decision Constructs

Outcomes

Students should understand the following outcomes, upon successful completion of this module:

- Decision Constructs

Decision Constructs

- Logic is used to make decisions in code; choosing to run one piece of code or another depending on the comparisons made.
- This requires use of something called a **conditional**.
- There are multiple different types of conditionals in JavaScript including:
 - i. **“If” statements**: where if a condition is true it is used to specify execution for a block of code.
 - ii. **“Else” statements**: where if the same condition is false it specifies the execution for a block of code.
 - iii. **“Else if” statements**: this specifies a new test if the first condition is false.

Decision Constructs

If Statement Example:

```
if (10 > 5) {  
  var outcome = "10 is greater than 5: True";  
}  
  
console.log(outcome);
```

The most common type of conditional, the *if* statement only runs if the condition enclosed in parentheses () is *truthy*.

Else Statement Example:

```
if ("cat" === "dog") {  
  console.log('a cat is a dog');  
} else {  
  console.log('a cat is not a dog');  
}
```

Extend an *if* statement with an *else* statement, which adds another block to run when the if conditional doesn't pass.

"cat" and "dog" are not equal, so the *else block* runs.

Decision Constructs

Else-If Statement Example:

```
if (false) {  
  console.log("This block wont run");  
} else if (true) {  
  console.log("if-else block run only if true");  
} else {  
  console.log("runs if both options above are false");  
}
```

Also extends an *if* statement with an *else if* statement, which adds another conditional with its own block.

You can use multiple if else conditionals, but note that only the first else if block runs.

JavaScript skips any remaining conditionals after it runs the first one that passes.

Decision Constructs

Question: Say you had the following code:

```
if (false) {  
  console.log("if block runs");  
} else if (false) {  
  console.log("1st if-else block runs");  
} else if (true) {  
  console.log("2nd if-else block runs");  
} else if (false) {  
  console.log("3rd if-else block runs");  
} else if (true) {  
  console.log("4th if-else block runs");  
} else {  
  console.log("else block runs");  
}
```

Which block of code will be run, and explain your reasoning?

Decision Constructs

An else if statement doesn't need a following else statement to work. If none of the if or else if conditions pass, then JavaScript moves forward and doesn't run any of the conditional blocks of code

```
if (false) {  
  console.log("if block runs");  
} else if (false) {  
  console.log("1st if-else block runs");  
}
```

Which block of code will be run, and explain your reasoning?

Decision Constructs

Exercise:

Write a JavaScript program that fetches the current time. If the time is less than 20:00, create a "Good day" greeting, otherwise "Good evening":

Solution:

```
let time = new Date().getHours();  
  
if (time < 20) {  
    console.log("Good day");  
} else {  
    console.log("Good evening");  
}
```


Decision Constructs

JavaScript switch Statement

- The switch statement is a part of JavaScript's "*Conditional*" Statements, which are used to perform different actions based on different conditions.
- The switch statement executes a block of code depending on different cases.
- Use switch to select one of many blocks of code to be executed. This is the perfect solution for long, nested if/else statements.

Syntax:

```
switch (expression) {  
  case n:  
    code block  
    break;  
  case n:  
    code block  
    break;  
  default:  
    default code block  
}
```

Decision Constructs

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Solution:

Example switch Statement:

Create a JavaScript application that use's today's weekday number to calculate the weekday name (Monday=1, Tuesday=2, Wednesday=4, ...). Only display the week days, Saturday and Sunday can be referred to as weekend.

```
var day;
switch (new Date().getDay()) {
  case 1:
    day = "Monday";
    break;
  case 2:
    day = "Tuesday";
    break;
  case 3:
    day = "Wednesday";
    break;
  case 4:
    day = "Thursday";
    break;
  case 5:
    day = "Friday";
    break;
  default:
    day = "Its a weekend";
}
console.log(day);
```

Exercises

Exercises on Decision Constructs on Moodle

Thank You!

The End

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