JavaScript Fundamentals – Part 1

# LECTURE: Values and Variables

# 1. Declare variables called 'country', 'continent' and 'population' and assign their values according to your own country (population in millions)

# 2. Log their values to the console

let country = 'India';

const continent = 'Asia';

var population = 100;

console.log(country);

console.log(continent);

console.log(population);

# LECTURE: Data Types

# 1. Declare a variable called 'isIsland' and set its value according to your country. The variable should hold a Boolean value. Also declare a variable 'language', but don't assign it any value yet

# 2. Log the types of 'isIsland', 'population', 'country' and 'language' to the console

let isIsland = true;

let language;

console.log(typeof isIsland); *// boolean*

console.log(typeof population); *// undefined*

console.log(typeof country); *// undefined*

console.log(typeof language); *// undefined*

# LECTURE: let, const and var

# 1. Set the value of 'language' to the language spoken where you live (some countries have multiple languages, but just choose one)

# 2. Think about which variables should be const variables (which values will never change, and which might change?). Then, change these variables to const.

# 3. Try to change one of the changed variables now, and observe what happens

language = 'portuguese';

 const country = 'Portugal';

 const continent = 'Europe';

 const isIsland = false;

 isIsland = true; *// TypeError: Assignment to constant variable.*

# LECTURE: Basic Operators

# 1. If your country split in half, and each half would contain half the population, then how many people would live in each half?

# 2. Increase the population of your country by 1 and log the result to the console

# 3. Finland has a population of 6 million. Does your country have more people than Finland?

# 4. The average population of a country is 33 million people. Does your country have less people than the average country?

# 5. Based on the variables you created, create a new variable 'description' which contains a string with this format: 'Portugal is in Europe, and its 11 million people speak portuguese'

const country = 'India';

const continent = 'Asia';

let population = 1300

const language = 'Hindi'

console.log(population / 2); *// 650*

population++;

console.log(population); *// 1301*

console.log(population > 6); *// true*

console.log(population < 33); *// false*

const description1 =

country +

' is in ' +

continent +

', and its ' +

population +

' million people speak ' +

language;

console.log(description1); *// India is in Asia, and its 1301 million people speak Hindi*

# LECTURE: Strings and Template Literals

# 1. Recreate the 'description' variable from the last assignment, this time using the template literal syntax

const description = `${country} is in ${continent}, and its

${population} million people speak ${language}`;

console.log(description); *// India is in Asia, and its 1301 million people speak Hindi*

# LECTURE: Taking Decisions: if / else Statements

# 1. If your country's population is greater that 33 million, log a string like this to the console: 'Portugal's population is above average'. Otherwise, log a string like 'Portugal's population is 22 million below average' (the 22 is the average of 33 minus the country's population)

# 2. After checking the result, change the population temporarily to 13 and then to 130. See the different results, and set the population back to original

*if* (population > 33) {

    console.log(`${country}'s population is above average`); *// India's population is above average*

    } *else* {

    console.log(`${country}'s population is ${33 - population} millionbelow average`);

    }

# LECTURE: Type Conversion and Coercion

# 1. Predict the result of these 5 operations without executing them: '9' - '5'; '19' - '13' + '17'; '19' - '13' + 17; '123' < 57; 5 + 6 + '4' + 9 - 4 - 2;

# 2. Execute the operations to check if you were right

console.log('9' - '5'); *// 4*

console.log('19' - '13' + '17'); *// '617'*

console.log('19' - '13' + 17); *// 23*

console.log('123' < 57); *// false*

console.log(5 + 6 + '4' + 9 - 4 - 2); *// 1143*

# LECTURE: Equality Operators: == vs. ===

# 1. Declare a variable 'numNeighbours' based on a prompt input like this: prompt('How many neighbour countries does your country have?');

# 2. If there is only 1 neighbour, log to the console 'Only 1 border!' (use loose equality == for now)

# 3. Use an else-if block to log 'More than 1 border' in case 'numNeighbours' is greater than 1

# 4. Use an else block to log 'No borders' (this block will be executed when 'numNeighbours' is 0 or any other value)

# 5. Test the code with different values of 'numNeighbours', including 1 and 0.

# 6. Change == to ===, and test the code again, with the same values of 'numNeighbours'. Notice what happens when there is exactly 1 border! Why is this happening?

# 7. Finally, convert 'numNeighbours' to a number, and watch what happens now when you input 1

# 8. Reflect on why we should use the === operator and type conversion in this situation

const numNeighbours = prompt(

'How many neighbour countries does your country have?',

);

*if* (numNeighbours == 1) {

console.log('Only 1 border!');

} *else* *if* (numNeighbours > 1) {

console.log('More than 1 border');

} *else* {

console.log('No borders');

}

*// const numNeighbours = Number(*

*//     prompt('How many neighbour countries does your country have?')*

*// );*

# LECTURE: Logical Operators

# 1. Comment out the previous code so the prompt doesn't get in the way

# 2. Let's say Sarah is looking for a new country to live in. She wants to live in a country that speaks english, has less than 50 million people and is not an island.

# 3. Write an if statement to help Sarah figure out if your country is right for her. You will need to write a condition that accounts for all of Sarah's criteria. Take your time with this, and check part of the solution if necessary.

# 4. If yours is the right country, log a string like this: 'You should live in Portugal :)'. If not, log 'Portugal does not meet your criteria :('

# 5. Probably your country does not meet all the criteria. So go back and temporarily change some variables in order to make the condition true (unless you live in Canada :D)

const country = 'India';

const continent = 'Asia';

let population = 1300

const language = 'Hindi'

const isIsland = false;

*if* (language === 'english' && population < 50 && !isIsland)

{

    console.log(`You should live in ${country} :)`);

} *else* {

    console.log(`${country} does not meet your criteria :(`); *// India does not meet your criteria :(*

}

# LECTURE: The switch Statement

# 1. Use a switch statement to log the following string for the given 'language': chinese or mandarin: 'MOST number of native speakers!' spanish: '2nd place in number of native speakers' english: '3rd place' hindi: 'Number 4' arabic: '5th most spoken language' for all other simply log 'Great language too :D'

const language = 'hindi'

*switch* (language) {

*case* 'chinese':

*case* 'mandarin':

    console.log('MOST number of native speakers!');

*break*;

*case* 'spanish':

    console.log('2nd place in number of native speakers');

*break*;

*case* 'english':

    console.log('3rd place');

*break*;

*case* 'hindi':

    console.log('Number 4');

*break*;

*case* 'arabic':

    console.log('5th most spoken language');

*break*;

*default*:

    console.log('Great language too :D');

}

# LECTURE: The Conditional (Ternary) Operator

# 1. If your country's population is greater than 33 million, use the ternary operator to log a string like this to the console: 'Portugal's population is above average'. Otherwise, simply log 'Portugal's population is below average'. Notice how only one word changes between these two sentences!

# 2. After checking the result, change the population temporarily to 13 and then to 130. See the different results, and set the population back to original

console.log(`${country}'s population is ${population > 33 ? 'above' : 'below'} average`); *// India's population is above average*