Coding Challenges

# Coding Challenge #1

# Mark and John are trying to compare their BMI (Body Mass Index), which is calculated using the formula: BMI = mass / height \*\* 2 = mass / (height \* height) (mass in kg and height in meter).

# Your tasks:

# 1. Store Mark's and John's mass and height in variables

# 2. Calculate both their BMIs using the formula (you can even implement both versions)

# 3. Create a Boolean variable 'markHigherBMI' containing information about whether Mark has a higher BMI than John.

# Test data:

# Data 1: Marks weights 78 kg and is 1.69 m tall. John weights 92 kg and is 1.95 m tall.

# Data 2: Marks weights 95 kg and is 1.88 m tall. John weights 85 kg and is 1.76 m tall.

*/\**

*// const massMark = 78;*

*// const heightMark = 1.69;*

*// const massJohn = 92;*

*// const heightJohn = 1.95;*

*\*/*

const massMark = 95;

const heightMark = 1.88;

const massJohn = 85;

const heightJohn = 1.76;

const BMIMark = massMark / heightMark \*\* 2;

const BMIJohn = massJohn / (heightJohn \* heightJohn);

const markHigherBMI = BMIMark > BMIJohn;

console.log(BMIMark, BMIJohn, markHigherBMI);

# Coding Challenge #2

# Use the BMI example from Challenge #1, and the code you already wrote, and improve it.

# Your tasks:

# 1. Print a nice output to the console, saying who has the higher BMI. The message is either "Mark's BMI is higher than John's!" or "John's BMI is higher than Mark's!"

# 2. Use a template literal to include the BMI values in the outputs. Example: "Mark's BMI (28.3) is higher than John's (23.9)!"

# Hint: Use an if/else statement

*if* (BMIMark > BMIJohn) {

    console.log(`Mark's BMI (${BMIMark}) is higher than John's (${BMIJohn})!`)

} *else* {

    console.log(`John's BMI (${BMIJohn}) is higher than Marks's (${BMIMark})!`)

}

# Coding Challenge #3

# There are two gymnastics teams, Dolphins and Koalas. They compete against each other 3 times. The winner with the highest average score wins a trophy!

# Your tasks:

# 1. Calculate the average score for each team, using the test data below

# 2. Compare the team's average scores to determine the winner of the competition, and print it to the console. Don't forget that there can be a draw, so test for that as well (draw means they have the same average score)

# 3. Bonus 1: Include a requirement for a minimum score of 100. With this rule, a team only wins if it has a higher score than the other team, and the same time a score of at least 100 points. Hint: Use a logical operator to test for minimum score, as well as multiple else-if blocks.

# 4. Bonus 2: Minimum score also applies to a draw! So a draw only happens when both teams have the same score and both have a score greater or equal 100 points. Otherwise, no team wins the trophy

# Test data:

# Data 1: Dolphins score 96, 108 and 89. Koalas score 88, 91 and 110

# Data Bonus 1: Dolphins score 97, 112 and 101. Koalas score 109, 95 and 123

# Data Bonus 2: Dolphins score 97, 112 and 101. Koalas score 109, 95 and 106

const scoreDolphins = (96 + 108 + 89) / 3;

const scoreKoalas = (88 + 91 + 110) / 3;

console.log(scoreDolphins, scoreKoalas);

*if* (scoreDolphins > scoreKoalas) {

  console.log('Dolphins win the trophy 🏆');

} *else* *if* (scoreKoalas > scoreDolphins) {

  console.log('Koalas win the trophy 🏆');

} *else* *if* (scoreDolphins === scoreKoalas) {

  console.log('Both win the trophy!');

}

*// BONUS 1*

const scoreDolphins = (97 + 112 + 80) / 3;

const scoreKoalas = (109 + 95 + 50) / 3;

console.log(scoreDolphins, scoreKoalas);

*if* (scoreDolphins > scoreKoalas && scoreDolphins >= 100) {

  console.log('Dolphins win the trophy 🏆');

} *else* *if* (scoreKoalas > scoreDolphins && scoreKoalas >= 100) {

  console.log('Koalas win the trophy 🏆');

} *else* *if* (scoreDolphins === scoreKoalas && scoreDolphins >= 100 && scoreKoalas >= 100) {

  console.log('Both win the trophy!');

} *else* {

  console.log('No one wins the trophy 😭');

}

# Coding Challenge #4

# Steven wants to build a very simple tip calculator for whenever he goes eating in a restaurant. In his country, it's usual to tip 15% if the bill value is between 50 and 300. If the value is different, the tip is 20%.

# Your tasks:

# 1. Calculate the tip, depending on the bill value. Create a variable called 'tip' for this. It's not allowed to use an if/else statement (If it's easier for you, you can start with an if/else statement, and then try to convert it to a ternary operator!)

# 2. Print a string to the console containing the bill value, the tip, and the final value (bill + tip). Example: “The bill was 275, the tip was 41.25, and the total value 316.25”

# Test data:

# Data 1: Test for bill values 275, 40 and 430

# Hints: To calculate 20% of a value, simply multiply it by 20/100 = 0.2 § Value X is between 50 and 300, if it's >= 50 && <= 300

const bill = 430;

const tip = bill <= 300 && bill >= 50 ? bill \* 0.15 : bill \* 0.2;

console.log(`The bill was ${bill}, the tip was ${tip}, and the total value ${bill + tip}`);