

Assignment W1D2 Functions

First do the **readings and complete the following tasks** from The JavaScript Language book. Try to complete the answers before looking at the solutions. Implement the coding assignments in VSCode.

JavaScript Fundamentals chapter

The “switch” statement

- Rewrite the “Switch” into an “if”
- Rewrite “if” into “switch”

Functions

- Rewrite the function using “?” or “||”
- Function min(a, b)
- Function pow(x, n)

Programming homeworks

Put your solutions for the following into your GitHub course repository according to the instructions in Sakai > Resources > lab helpers > setupGithubRepository.pdf. Be sure to include function calls that test your functions.

1. Write a function, computeSalesCommission that takes a Boolean argument for salaried and number argument for salesAmount. It should return the sales commission based on following rules. First make a defining table for the function.
 - If the salesman is salaried then
 - There is no commission for sales below \$300
 - 1% for sales between \$300 and \$500 (inclusive, and commission on the entire amount)
 - 2% for sales above \$500 (only for the portion above 500 plus the 1% commission on the first 500)
 - If the salesman is not salaried then
 - no commission for sales below \$300
 - 2% for sales between \$300 and \$500 (inclusive, and commission on the entire amount)
 - 3% for sales above \$500 (only for the portion above 500 plus the 2% commission on the first 500)

```
console.log("expect 0: ", computeSalesCommission(true, 200));
console.log("expect 0: ", computeSalesCommission(false, 200));
console.log("expect 3: ", computeSalesCommission(true, 300));
console.log("expect 6: ", computeSalesCommission(false, 300));
console.log("expect 65: ", computeSalesCommission(true, 3500));
console.log("expect 100: ", computeSalesCommission(false, 3500));
```

2. Make a defining table and function that will return the balance of a savings account that compounds interest monthly. Parameters for the function will be:
- initial amount
 - annual interest rate
 - number of years to compound

```
console.log("expect 110.47", compoundInterest(100, 10, 1));  
console.log("expect 16470.09", compoundInterest(10000, 5, 10));
```

3. Cost of House Down Payment

Make a defining table and then write a function that calculates down payment for a home loan based on following rules. Your function should have a parameter for the cost and return the down payment amount.

Cost of House	Down Payment
\$0 to less than 50K	5% of the cost
\$50K to less than 100K	\$2500 + 10% of (cost - \$50K)
\$100K to less than 200K	\$7500 + 15% of (cost - \$100K)
\$200K and above	\$20000 + 10% of (cost - \$200K)

```
console.log("expect 2000: ", calcDownpayment(40000));  
console.log("expect 2500: ", calcDownpayment(50000));  
console.log("expect 7500: ", calcDownpayment(100000));  
console.log("expect 25000: ", calcDownpayment(250000));
```

4. Write functions sumDigits and multDigits that take an integer parameter and return the sum or product of the digits in the number. Use the / and % operators to find the digits.

Input	sumDigits Output	multDigits Output
1234	10	24
102	3	0
8	8	8

5. Write a function, convertFahrenheit, that takes an input parameter with a temperature in Fahrenheit and returns the temperature in Celsius.

```
console.log("expect 0: ", convertFahrenheit (32));  
console.log("expect -17.7778: ", convertFahrenheit (0));  
console.log("expect 100: ", convertFahrenheit (212));  
console.log("expect 37.7778: ", convertFahrenheit (100));
```

6. Write a function that takes x and y co-ordinates of two points as inputs and returns the distance between these two points based on the formula, $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

```
console.log("expect 7.07 : ", calcDistance (0, 0, 5, 5));
```