Algorithms & Data Structures I Week 10 Lecture Note

Notebook: Algorithms & Data Structures I

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Cornell Notes

Topic:

Sorting data I, Part 2

Course: BSc Computer Science

Class: CM1035 Algorithms & Data

Structures | [Lecture]

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Essential Question:

How do we implement bubble and insertion sort in JavaScript?

Questions/Cues:

- How do we assign variable in Javascript like pseudocode?
- How increment/decrement a variable in Javascript?
- How do end a loop in JavaScript?
- What is the syntax for a for loop and a while loop in JavaScript?
- Why do we assign variable to use inside loops outside the actual loop?
- How do we implement bubble sort in JS?

Notes

- Assignment in JavaScript is done using the "=", the equal sign
- Variable are declared using the "var" or let keyword before the variable name
- To increment a value by one, we use the syntax variableName++

```
o for (var i =1; i <= done; i++) {
```

}

- The curly braces in the for loop includes what we want to happen for every iteration of the loop
- The ending curly brace replaces the "end for" or "end while" in pseudocode
- Always declare variable and initialize variables to use inside loops outside, to avoid reassignment of the variable for each iteration of the loop

```
o while (cereal > 0) {
    cereal--;
}
```

■ the "--" is to decrease the variable by one just like ++ is increase it by one

```
function BubbleSort(vector)
    for 1 \le i \le n - 1 do
         count \leftarrow 0
         for 1 \le j \le n - 1 do
              if vector[j+1] < vector[j]
                    Swap(vector, j, j + 1)
                    count \leftarrow count + 1
               end if
         end for
         if count = 0 then
               break
         end if
    end for
    return vector
end function
```

Summary

In this week, we learned about how to translate pseudocode into JavaScript.