BIL214 - Systems Programming

LAB5

In this lab, you will answer the 2 questions given below. For both questions, you will write a C script into a file named “q1_<studentid>.c”, “q2_<studentid>.c” and upload your file into the form below. Make sure your scripts can be compiled correctly with the gcc compiler.

Upload Form: https://forms.gle/7UN3TEw4X1pMdcGM7
Deadline: 18:30 21.10.2021

1. **Arrays**

   In this question, you will write a C script called “sort_strings.c” that takes a number of strings and sorts them in alphabetical order. Your program should ask for strings until “sort” string is given. After, it should sort and print the given strings in alphabetical order. You are allowed to use array notation “[ ]”. The maximum length of each string is 20 and the maximum number of strings is 10. Your program should work like the example below.

   ```
   ~$./q1_111111111
   Welcome,
   Enter a string: tansel
   Enter a string: yahya
   Enter a string: bahattin
   Enter a string: sort
   The sorted strings:
   bahattin
   tansel
   yahya
   Exiting program.
   ```

2. **Pointers**

In this question, you will write a C function that adds a new number to a given array. The function signature should be like "**void add_index(int *a, int value, int index)**". Your function will take an integer pointer which holds the starting address of the array, a value and an index number, then put the value into the indexed location. The rest of the array should be shifted. You need to also write main function that asks the user for a value and an index. After inserting new value into array the program should display the array and ask the user if the one wants to continue. Your program should work like the example below. You are **not** allowed to use array notation "[ ]". (You can assume that the last number of array is always -1)

```
~$./q2_111111111
Welcome,
The array: 5 3 56 8 0 -1
Enter a value: 8
Enter an index: 2
The new array: 5 3 8 56 8 0 -1
Do you want to continue? (Y/N)
Y
Enter a value: -5
Enter an index: 2
The new array: 5 3 -5 8 56 8 0 -1
Do you want to continue? (Y/N)
N
Exiting program.
```