Gebze Technical University
Department of Computer Engineering
CSE 107 - Introduction to Computer Science Lab.

Date: 10 Dec 2021

Content:

1. Recursive function exercises.
2. Serial communication between Arduino and serial monitor.

1. Recursive Functions:

1.1. Addition

```
int addition (int n)

{

   if (n==0) return 0;

   else return n + addition(n - 1);

}
```

1.2. Factorial

```
int fact (int n)

{

   if (n==1) return 1;

   else return n * fact(n - 1);

}
```

1.3. Fibonacci

```
int fibo (int n)

{

   if (n==0 || n==1) return 1;

   else return fibo(n - 1) + fibo(n - 2);

}
```

2. Task - Serial communication between Arduino and serial monitor:

Write an Arduino program that processes a string (character array) letter by letter and prints the type of incumbent letter on the serial monitor. The type of letters may be one of capital, lowercase, or number. You can declare the string read only for simplicity. There should be at least 150 milliseconds between each print line (each iteration of loop). The program should be waiting for 5 seconds after all the letters are processed and it starts from the beginning again.

Hint: You can use ASCII codes of characters for classifying letters. ASCII codes of character types are given below:

- Capital: [A-Z] => [65-90]
- Lower case: [a-z] => [97-122]
- Numbers: [0-9] => [48-57]