

# CMPE 108 - Experiment 7

## Functions

### OBJECTIVES:

- Understand how to edit, compile and execute C computer codes.
- Understand C programming: Functions

### NOTES:

- You should prepare the preliminary work before coming to the laboratory session and bring soft or hard copies of the preliminary work with you.
- Before writing a computer code, you should do the following steps:
  - 1) understand and analyze the problem,
  - 2) develop an algorithm and/or flowchart,
  - 3) convert the algorithm and/or the flowchart into a C code.

### PRELIMINARY WORK:

1. Write down the output of the following C programs.

a)

```
#include <stdio.h>
float avg(float, float);

int main()
{ float y1, y2, average;
  y1=5.0;
  y2=7.0;
  average = avg(y1, y2);
  printf("y1 = %f \ny2=%f \n The average is=
  %f", y1, y2, average);
  return 0;
}

float avg(float x1, float x2)
{ float result;
  result = (x1+x2)/2;
  return result;
}
```

**b)**

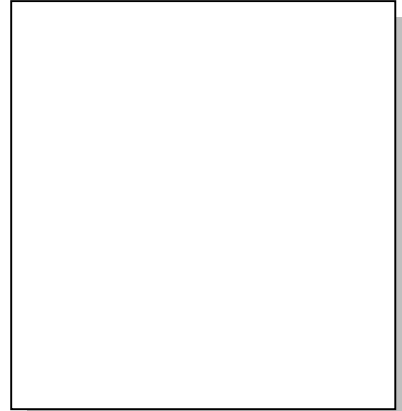
```
#include <stdio.h>

float square ( float x);

void main( )
{ float m, n ;
  printf ( "\nEnter some number for
  finding square \n");

  scanf ( "%f", &m ) ;
  n = square ( m ) ;
  printf ( "\nSquare of the given
  number %f is %f",m,n );
}

float square ( float x )
{
  float p ;
  p = x * x ;
  return p ;
}
```

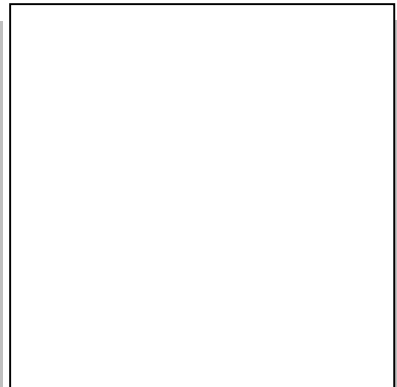


**c)**

```
#include <stdio.h>

void swap(int a, int b);
int main()
{ int m = 22, n = 44;
  printf(" values before swap m =
  %d \nand n = %d", m, n);
  swap(m, n);
}

void swap(int a, int b)
{ int tmp;
  tmp = a;
  a = b;
  b = tmp;
  printf(" \nvalues after swap m
  = %d\n and n = %d", a, b);
}
```



d)

```
#include <stdio.h>
int f(int a)
{ return a%2 ? ++a : a--; }

void main()
{ int i , a = 2;
  for (i = 0 ; i < 5 ; i++)
  { a += i;
    printf("%d,%d",i,f(a));
  }
}
```

### TASKS during the LAB hours

1. Write a C program, **Using Functions** that will ask the user to enter a temperature in Fahrenheit and display it in Celsius.

Fahrenheit to Celsius formula is:  $Celsius = (5/9) * (Fahrenheit - 32)$ .

2. Write a C program that reads a series of numbers, from the keyboard. Write three functions that will find the largest number, the average of all numbers, and the number of positive numbers.