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;
}
```
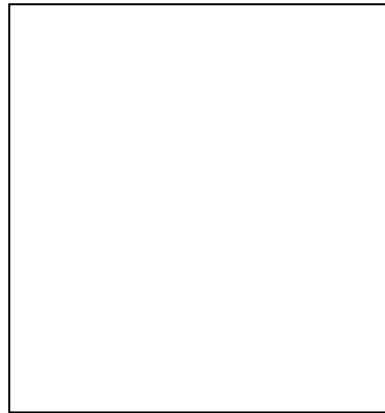
b)

```c
#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  ;
}
```
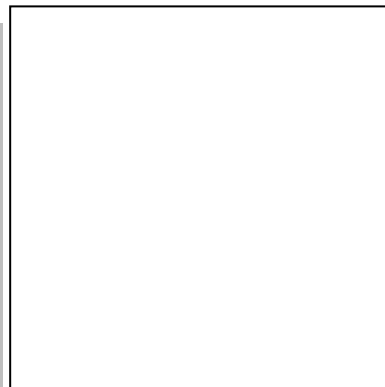
c)

```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);
  }
```
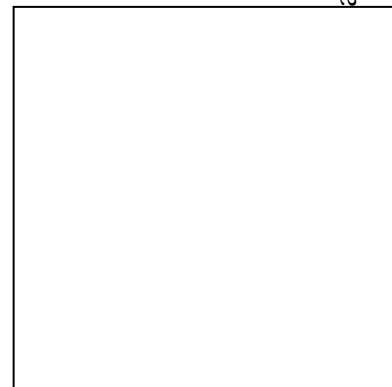
d)

```c
#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));
    }
}
```

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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: Celcius= (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.