Functions

Objectives:

- Understanding the fundamental of a C User-defined Functions.
- Functions and loops.

1. Complete the following program to find multiplication of two numbers by calling mul function.

```c
/* Computes pairwise averages of three numbers */
#include <stdio.h>
 double mul(double a, double b)
{
  return (………………………….);
}


int main(void)
{
  double x, y;
  printf("Enter two numbers: ");
  scanf(………….);
  printf(…………..);
  return 0;
}
```

2. In the following program, let pass an array to a function. Show the output.

```
#include <stdio.h>

// function prototype
void Wish(int, char[ ]);

void main(void)
{
  Wish(5, "Happy");
}
```

```
// Function definition
void Wish(int num, char mood[])
{
    int i;
    for(i = 1; i <= num; i = i + 1)
        printf("I wish I'm %s\n", mood);
}
```

num   mood

3. Run the following program and show the output.
```
/* Computes pairwise averages of three numbers */
#include <stdio.h>

double average(double a, double b)
{
  return (a + b) / 2;
}

int main(void)
{
  double x, y, z;

  printf("Enter three numbers: ");
  scanf("%lf%lf%lf", &x, &y, &z);
  printf("Average of %g and %g: %g\n", x, y, average(x, y));
  printf("Average of %g and %g: %g\n", y, z, average(y, z));
  printf("Average of %g and %g: %g\n", x, z, average(x, z));

  return 0;
```

}

4. Write a program using a function to count number of an array elements. The end of array is determined by 0.
   (e.g. if the input array be

| 2 | 5 | -8 | 44 | 22 | 0 | | | | | the
|---|---|----|----|----|---|--|--|--|--|

   function returns 5)