EEE101 C Programming and Software Engineering
Solutions to Lab Practice 4

Exercise 1

for loop

```
#include<stdio.h>

main(){
int i;

for(i=1;i<11;i++){
        printf("%d %d\n",i,i*i);        /* to print and to calculate the squares */
        }
}
```

while loop

```
#include<stdio.h>

main(){
int i=1;

while(i<11){
        printf("%d  %d\n",i,i*i);
        i++;
        }
}
```

Exercise 2

```
#include<stdio.h>

main(){

int rows, columns;

for (rows=1; rows<=5;  rows++){
        for (columns=1; columns<=rows; columns++){
                printf("*");      /* to print a star as long as the number of columns is
                                    smaller or equal to the number of rows */
                }
        printf("\n");
        }
}
```

Exercise 3

```
#include<stdio.h>

main(){
int i;

for(i=1;i<11;i++){
        if(i%2==0)
                printf("%d is even\n",i);          /* using the modulus operator % to check
                                                      if the number is even  */
        else
                printf("%d is odd\n",i);
        }
}
```

Exercise 4

```
#include<stdio.h>

main(){
int i,j;
int factorial;

for(i = 1; i <= 7; i++){                /* for-loop for the calculation of the first 7 positive
        factorial = i;                  integers and their factorials */

        for(j = 1; j <= i; j++){
                factorial = factorial*j;
                }
        printf("The factorial of %d  is 1",i);

        for(j = 2; j <=i; j++){
                printf("  *  %d",j);
                }

        printf("  =  %d\n",factorial);
        }
}
```

Exercise 5

```
#include<stdio.h>

main(){
int i,j;
float sum=0.0;

printf("Please  enter  a  positive  integer.\n");
scanf("%d", &n);

for(i=1;i<=n;i++){
        sum = sum + ((float) 1/i);      /* to compute the sum according to the given
        }                                       equation */

printf("The sum is %.5f\n",sum);
}
```