Function definitions and main function can be in the same file, or functions can be in a different file called header file. However, in order to use such a file, you need to add the .h extension header file to the program with the #include statement in the file containing the main function. Below is a simple example of defining a function and using it in the header file. This program prints the sum and difference of two numbers received from the user on the screen. To run this program, all you have to do is put the main.c and function.h files in the same folder, compile your program with the gcc main.c command and then run your program by saying ./a.out.

//main.c

#include<stdio.h>

#include "function.h"

int main()

{

int number1, number2;

scanf("%d%d", &number1, &number2);

printf("Sum=%d Difference=%d\n", add(number1, number2), subtract(number1, number2));

return 0;

}

//function.h

int add(int num1, int num2)

{

return num1+num2;

}

int subtract(int num1, int num2)

{

return num1-num2;

}

main.c

|  |
| --- |
| #include <stdio.h>  #include <stdlib.h>  #include <malloc.h>  #include "function.h"  int main()  {  struct nodeClass \*head = NULL;  int id, midterm;  scanf("%d", &id);  while(id!=-1)  {  scanf("%d", &midterm);  insert(&head, id, midterm);  scanf("%d", &id);  }  computeClassAverage(head);  printAll(head).  return 0;  } |

function.h

|  |
| --- |
| struct nodeClass  {  int classID;  double classMidtermAverage;  struct nodeClass \*next;  struct nodeStudent \*studentPtr;  };  struct nodeStudent  {  int studentID;  int midterm;  struct nodeStudent \*next;  };  // You must write all the function definitions to be used in this lab into this file.  // You may also write other functions that may be called from our functions.  // Do not make any changes to the main.c file.  // Upload function.h file to the system as StudentNumber.h. |