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;

}

|  |  |
| --- | --- |
| INPUT | OUTPUT |
| 456 45  561 41  821 20  193 25  882 37  -1  872  272  345  892  764  -1 | 193 25  456 45  561 41  821 20  882 37  892  872  764  345  272  193 25  892  456 45  872  561 41  764  821 20  345  882 37  272 |
| 256 15  761 21  421 50  -1  172  433  125  -1 | 256 15  421 50  761 21  433  172  125  256 15  433  421 50  172  761 21  125 |
| 444 45  333 32  -1  588  655  -1 | 333 32  444 45  655  588  333 32  655  444 45  588 |

main.c

|  |
| --- |
| #include <stdio.h>  #include <stdlib.h>  #include <malloc.h>  #include "function.h"  struct nodeFB \*startFB = NULL;  struct nodeGS \*startGS = NULL;  struct newNodeFB \*startNewFB = NULL;  int main()  {  int id, age;  scanf("%d", &id);  while(id!=-1)  {  scanf("%d", &age);  insertFB(&startFB, id, age);  scanf("%d", &id);  }    scanf("%d", &id);  while(id!=-1)  {  insertGS(&startGS, id);  scanf("%d", &id);  }    printFB(startFB);  printGS(startGS);  createFinalList(&startNewFB,startFB,startGS);  printAll(startNewFB);    return 0;    } |

function.h

|  |
| --- |
| struct nodeFB  {  int id;  int age;  struct nodeFB \*next;  };  struct nodeGS  {  int id;  struct nodeGS \*next;  };  struct newNodeFB  {  int id;  int age;  struct newNodeGS \*next;  };  struct newNodeGS  {  int id;  struct newNodeFB \*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. |