**Sachintha Hasaranga**

**IT21194962**

**Malabe group 1.2**

**Exercise 1**

//sachintha hasaranga It21194962

#include<stdio.h>

#include<assert.h>

int qualityPoint(float average); //function qualityPoint declaration

int main(){ //function main begin program execution

float staverage;

assert(qualityPoint(92)==4); //check qualityPoint function is correct

assert(qualityPoint(85)==3);

assert(qualityPoint(78)==2);

assert(qualityPoint(63)==1);

assert(qualityPoint(52)==0);

assert(qualityPoint(100)==4);

assert(qualityPoint(90)==4);

assert(qualityPoint(89)==3);

assert(qualityPoint(80)==3);

assert(qualityPoint(79)==2);

assert(qualityPoint(70)==2);

assert(qualityPoint(69)==1);

assert(qualityPoint(60)==1);

printf("Enter average :- "); //prompt

scanf("%f",&staverage); //read float to staverage

printf("Your quality point is %d",qualityPoint(staverage));//invoke qualityPoint function and print quality point

return 0;

}//end main function

int qualityPoint(float average){ //function qualityPoint implementation

if (average<=100&&average>=90){ //if average between 100 and 90 return 4

return 4;

}//end if condiction

else if(average<=89&&average>=80){ //if average between 89 and 80 return 3

return 3;

}//end else if condiction

else if(average<=79&&average>=70){ //if average between 79 and 70 return 2

return 2;

}//end else if condiction

else if(average<=69&&average>=60){ //if average between 60 and 69 return 1

return 1;

}//end else if condiction

else { //if average lessthan 60 return 0

return 0;

}//end else condiction

}//end function qualitypoint

**Exercise 2,**

//sachintha hasaranga It21194962

#include<stdio.h>

#include<assert.h>

#include<math.h>

double hypotenuse(double side1,double side2); //function hyponenuse declaration

int main(void){

double tside1,tside2; //variables

assert(fabs(hypotenuse(3.0,4.0)-5.0)<=0.01);

assert(fabs(hypotenuse(5.0,12.0)-13.0)<=0.01); //check hypotenuse function is correct

assert(fabs(hypotenuse(8.0,15.0)-17.0)<=0.01);

printf("enter side1 :- "); //prompt

scanf("%lf",&tside1); //read double to tside1 variable

printf("enter side1 :- "); //prompt

scanf("%lf",&tside2); //read double to tside2 variable

printf("side 3 is :- %.2f",hypotenuse(tside1,tside2)); //invoke hypotenuse function and print side 3 value

}//end function main

double hypotenuse(double side1,double side2){ //function hyponenuse implementation

double side3;

side3=(side1\*side1)+(side2\*side2); //assign side3 value

side3= sqrt(side3);

return side3; //return side3 value

}//end function hyponenuse

**Exercise 3**

//sachintha hasaranga It21194962

#include<stdio.h>

#include<assert.h>

#include<math.h>

double hypotenuse(double side1,double side2); //function hyponenuse declaration

void testHypotenuse();//function testHypotenuse declaration

int main(void){

double tside1,tside2; //variables

testHypotenuse(); //invoke testHypotenuse function

printf("enter side1 :- "); //prompt

scanf("%lf",&tside1); //read double to tside1 variable

printf("enter side1 :- "); //prompt

scanf("%lf",&tside2); //read double to tside2 variable

printf("side 3 is :- %.2f",hypotenuse(tside1,tside2)); //invoke hypotenuse function and print side 3 value

}//end function main

double hypotenuse(double side1,double side2){ //function hyponenuse implementation

double side3;

side3=(side1\*side1)+(side2\*side2); //assign side3 value

side3= sqrt(side3);

return side3; //return side3 value

}//end function hyponenuse

void testHypotenuse(){ //function testHyponenuse implementation

assert(fabs(hypotenuse(3.0,4.0)-5.0)<=0.01);

assert(fabs(hypotenuse(5.0,12.0)-13.0)<=0.01); //check hypotenuse function is correct

assert(fabs(hypotenuse(8.0,15.0)-17.0)<=0.01);

}//end function testHyponenuse