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Course title: Programming Fundamentals

Lab assignment: 2

Topic: Loops

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*Lab Task 1.**Program Objective:* ***Using sentinel-controlled loop****Program name.* ***Updated multiplication table program***

***Code:***

***//this function is made by ali hassan reg.no sp20-bse-013.***

***//this function inputs a number and prints its table upto 5 terms again asks to continue this process continue until user enters n.***

**#include<stdio.h>**

**#include<stdlib.h>**

**#include<stdbool.h>**

**int main(){**

**int no,i=1,z=5,x=6;**

**bool exit=false;**

**char op;**

**printf("Enter a number to print its table:");**

**scanf("%d",&no);**

**if(no>=2 && no<=20){**

**do{**

**printf("%d x %d=%d\n",no,i,no\*i);**

**i++;**

**if(i==x){**

**printf("Do you want to continue (y/n):\n");**

**op=getche();**

**if(op!='y'){**

**exit=true;**

**}**

**printf("\n");**

**x+=5;**

**}**

**}while(!exit );**

**}**

**return 0;**

**}**

*Lab Task 2.**Program Objective:* ***Using endfile-controlled loop****Program name.* ***Average student score (batch mode)***

***Code :***

**#include<stdio.h>**

**#include<stdbool.h>**

**#include<stdbool.h>**

**int main(){**

**int number=0,sum=0,counter=0,input\_status;**

**float average=0;**

**bool exit=false;**

**while(input\_status!=EOF && counter<=20)**

**{**

**printf("Enter a your marks :");**

**input\_status=scanf("%d",&number);**

**if(input\_status!=EOF){**

**sum+=number;**

**counter++;**

**}**

**}**

**printf("\n");**

**if(counter==0){**

**printf("You did not enter any number");**

**}**

**else if(counter>0){**

**average=(sum/counter);**

**printf("The average is %.2f",average);**

**}**

**return 0;**

**}**

*Lab Task 3.**Program Objective:* ***Using general-conditional loop****Program name.* ***Pair of divisible integers***

***Code:***

//Design an interactive input loop that scans pairs of integers until it reaches a pair in which the first integer

//evenly divides the second

#include<stdio.h>

int main(){

int no1,no2;

while(no2%no1!=0){

printf("Enter 1st number:");

scanf("%d",&no1);

printf("Enter 2nd number:");

scanf("%d",&no2);

}

printf("No 1=%d No2=%d",no1,no2);

return 0;

}

*Home Task.**Program Objective:* ***Using endfile-conditional loop****Program name.* ***Named students score percentage (batch mode)***

***Code :***

#include<stdio.h>

#include<stdlib.h>

#include<math.h>

#include<conio.h>

int main(){

char c=' ',z=' ';

char name[]={};

int i=0,x=0,input\_status;

float float1=0.0,grade,marks,tmarks;

while(input\_status!=EOF){

//implement EOF loop

printf("Enter your name :");

c=getch();

input\_status=c;

name[i]=c;

i++;

while(c!=' '){ //taking name input

scanf("%c", &c);

name[i]=c;

i++;

}

fflush(stdin); //dispose input stream

printf("Enter obtained score:");

scanf("%f",&marks);

printf("Enter total marks:\n");

scanf("%f",&tmarks);

c=name[0];

i=0;

while(c!=' '){ //printing name

c=name[i];

printf("%c",c);

i++;

}

float1=marks/tmarks;

grade=float1\*100;

if(grade>90){ //showing results

printf(" %0.f%% %f Excellent\n",grade,float1);

}

else if(grade>80 ){

printf(" %0.f%% %f Well done\n",grade,float1);

}

else if(grade>70){

printf(" %0.f%% %f Good\n",grade,float1);

}

else if(grade>=60 ){

printf(" %0.f%% %f Need improvement\n",grade,float1);

}

else if(grade<50 ){

printf(" %0.f%% %f Fail\n",grade,float1);

}

}

return 0;

}

***Lab Assignment.  
Program Objective:  
• Develop input validation loop  
• Develop sentinel-controlled loop  
• Program separate functions for different sub-problems***

***Code :***

#include<stdio.h>

#include<stdlib.h>

#include<math.h>

#include<conio.h>

int main(){

char c=' ',z=' ';

char name[]={};

int i=0,x=0,input\_status;

float float1=0.0,grade,marks,tmarks;

while(input\_status!=EOF){

//implement EOF loop

printf("Enter your name :");

c=getch();

input\_status=c;

name[i]=c;

i++;

while(c!=' '){ //taking name input

scanf("%c", &c);

name[i]=c;

i++;

}

fflush(stdin);

printf("Enter obtained score:");

scanf("%f",&marks);

printf("Enter total marks:\n");

scanf("%f",&tmarks);

c=name[0];

i=0;

while(c!=' '){ //printing name

c=name[i];

printf("%c",c);

i++;

}

float1=marks/tmarks;

grade=float1\*100;

if(grade>90){ //showing results

printf(" %0.f%% %f Excellent\n",grade,float1);

}

else if(grade>80 ){

printf(" %0.f%% %f Well done\n",grade,float1);

}

else if(grade>70){

printf(" %0.f%% %f Good\n",grade,float1);

}

else if(grade>=60 ){

printf(" %0.f%% %f Need improvement\n",grade,float1);

}

else if(grade<50 ){

printf(" %0.f%% %f Fail\n",grade,float1);

}

}

return 0;

}