

Assignment 5: Conditional Statement (Advanced)

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1. A function f is defined as follows;

$F(x) = ax^3 - bx^2 + cx - d$ if $x > k$

$= 0$ if $x = k$

$= -ax^3 + bx^2 - cx + d$ if $x < k$

Write a program to accept a, b, c, d, k and x . and display the value of $f(x)$.

Answer:

Source code:

```
#include <stdio.h>
```

```
#include <math.h>
```

```
int main(){
```

```
int fx,a,b,c,d,k,x;
```

```
printf("The function works as\n fx= ax^3-bx^2+cx-d , if x>k\n fx=0 , if x=k\n fx= -ax^3+bx^2- cx+d,if x<k\n");
```

```
printf("Enter The Value of a \n");
```

```
Scanf("%d",&a);
Printf("Enter The Value of b \n");
Scanf("%d",&b);
Printf("Enter The Value of c \n");
Scanf("%d",&c);
Printf("Enter The Value of d \n");
Scanf("%d",&d);
Printf("Enter The Value of k \n");
Scanf("%d",&k);
Printf("Enter The Value of x \n");
Scanf("%d",&x);
```

```
If(x>k)
{
Fx=(a*x*x*x)-(b*x*x)+(c*x)-d;
Printf("The value of x is greater than k/n");
}
```

Else if(x=k)

```
{
Fx=0;
```

```
Printf("The value of x is equal to k \n");
```

```
}
```

Else if(x<k)

```
{
```

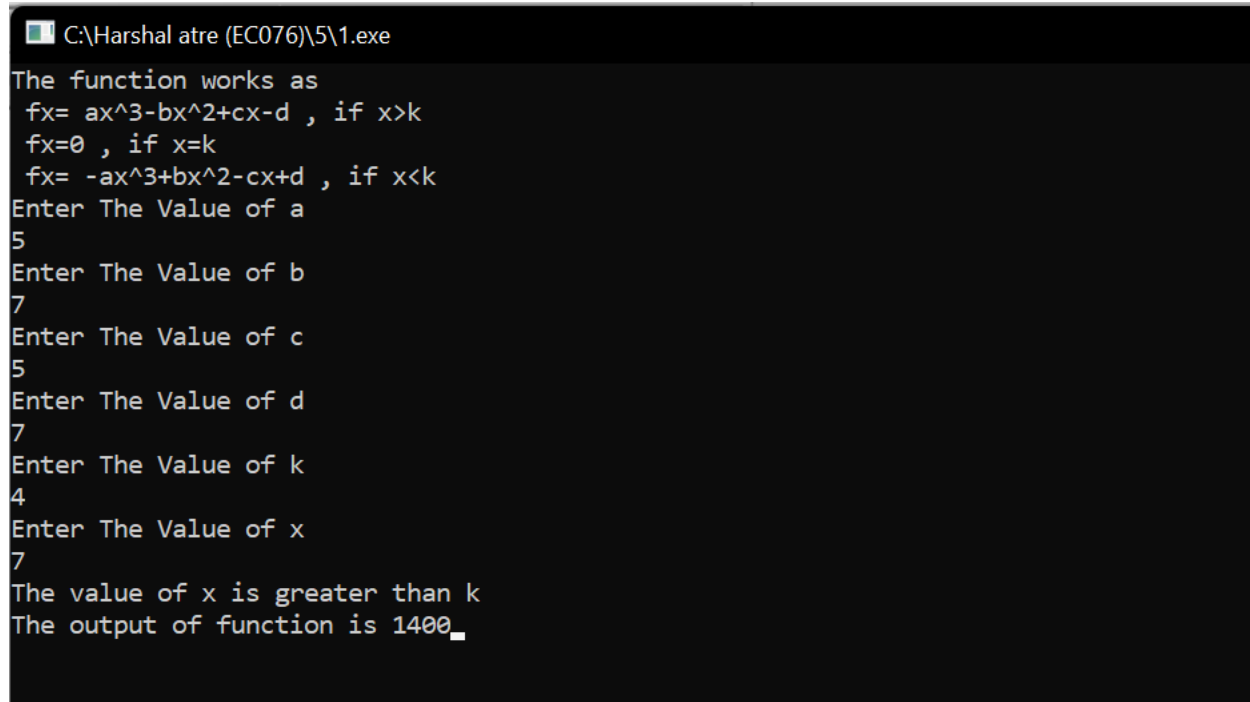
```
Fx=-(a*x*x*x)+(b*x*x)-(c*x)+d;
```

```
Printf("The value of x is smaller than \n");
```

```
}
```

```
        Printf("The output of function is %d",fx);  
    }
```

Output:



```
C:\Harshal atre (EC076)\5\1.exe  
The function works as  
fx= ax^3-bx^2+cx-d , if x>k  
fx=0 , if x=k  
fx= -ax^3+bx^2-cx+d , if x<k  
Enter The Value of a  
5  
Enter The Value of b  
7  
Enter The Value of c  
5  
Enter The Value of d  
7  
Enter The Value of k  
4  
Enter The Value of x  
7  
The value of x is greater than k  
The output of function is 1400_
```

2.

Write a program to read marks from the keyboard and display equivalent grade.

(Use if-else if ladder)

Marks	Grade
-------	-------

100 – 80.	Distinction
-----------	-------------

60 – 79	First Class
---------	-------------

35 – 59 Second Class

0 – 35. Fail

Source code:

```
#include <stdio.h>

#include<conio.h>

int main(){

    int marks;

    printf("Enter Your marks\n");

    scanf("%d",&marks);


    if(100>= marks >=80){

        printf("Distinction\n");

    }

    else if(79>= marks <=60){

        printf("First class\n");

    }

    else if(59>= marks <=35){

        printf("Second class");

    }

    else if(35>= marks <=0){

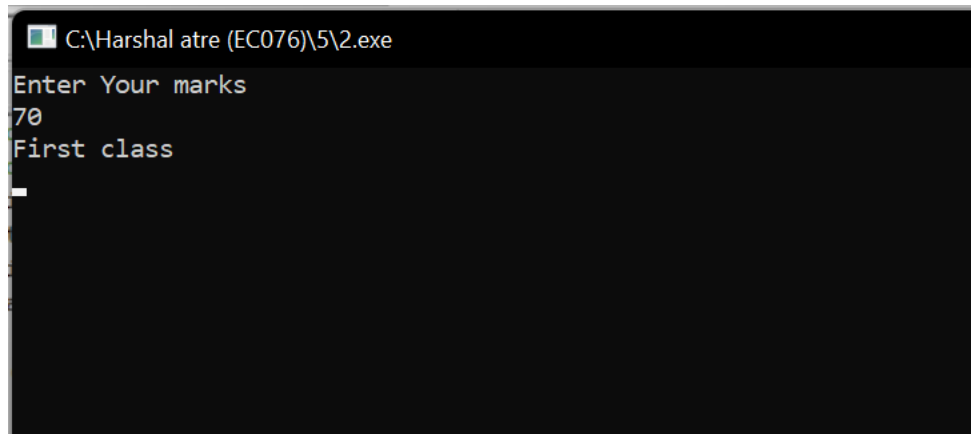
        printf("Fail");

    }

    getch();

}
```

Output:



```
C:\Harshal atre (EC076)\5\2.exe
Enter Your marks
70
First class
```

3. Write programs for the following:

1. Take two numbers of float and divide the first number by second and show the result as integer number.
2. Take the first number as -VE integer and second as +VE float, divide the first by second and display output as integer number.
3. Take the first number as +VE float and second number as -VE integer, divide the first number by second and display output in the float.

Answer:

Source code:

3.1

```
#include <stdio.h>
#include <conio.h>
int main(){
    float a,b;
    printf("Enter the Numerator ");
    scanf("%f",&a);
```

```

printf("Enter the Denominator ");
scanf("%f",&b);
int ans=a/b;
printf( "The Answer is %d ",ans);
    getch();
}

```

3.2

```

#include <stdio.h>
#include<conio.h>

```

```

int main(){
int a;
float b;
printf("Enter the Numerator ");
scanf("%d",&a);
printf("Enter the Denominator ");
scanf("%f",&b);
int ans =a/b;
printf("%d",ans);
getch();
}

```

3.3

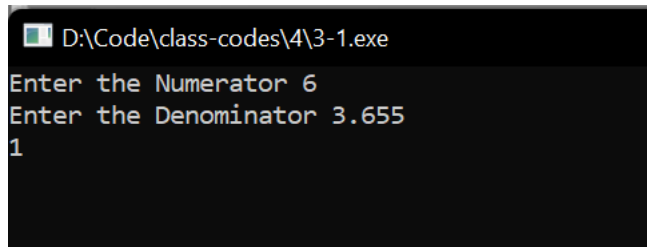
```

#include <stdio.h>
#include<conio.h>

```

```
int main(){  
    float a;  
    int b;  
    printf("Enter the Numerator ");  
    scanf("%f",&a);  
    printf("Enter the Denominator ");  
    scanf("%d",&b);  
    float ans=a/b;  
    printf("%f",ans);  
    getch();  
}
```

Output:



```
D:\Code\class-codes\4\3-1.exe  
Enter the Numerator 6  
Enter the Denominator 3.655  
1
```

```
D:\Code\class-codes\4\3-1.exe
Enter the Numerator 56.776
Enter the Denominator 8
7.097000

D:\Code\class-codes\4\3-1.exe
Enter the Numerator 56.776
Enter the Denominator 8.667
The Answer is 6 _
```

5.

5. A cloth showroom has announced the following seasonal discount on the purchase of items.

Purchase Amount	Discount	
	Mill Cloth	Handloom Items
0 – 100	-	5.0%
101 – 200	5.0 %	7.5%
201 – 300	7.5 %	10.0%
Above 300	10.0 %	15.0%

Write a program to compute the net amount to be paid by a customer.

Answer:

Source code:

```
#include <stdio.h>
```

```
#include<conio.h>
```

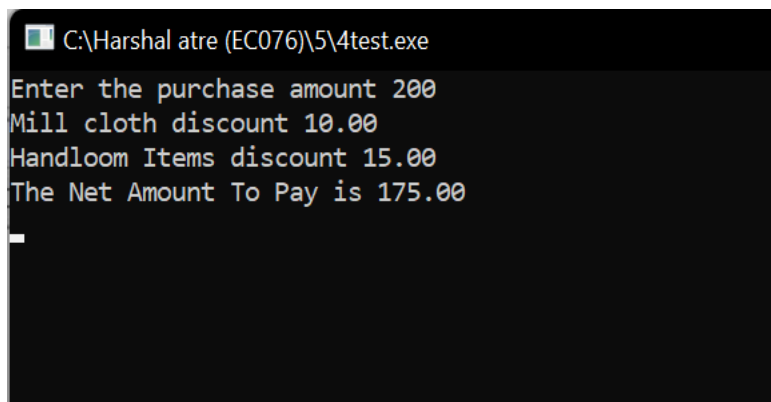


```
int main(){  
    float purchaseAmt;  
    printf("Enter the purchase amount ");  
    scanf("%f",&purchaseAmt);  
    float bill,milld,handd;  
    if(0<=purchaseAmt && purchaseAmt<=100){  
        milld=0;  
        handd=(5*purchaseAmt)/100;  
        printf("Mill cloth discount %.02f\n",milld);  
        printf("Handloom Items discount %.02f\n",handd);  
    }  
    else if(101<=purchaseAmt&& purchaseAmt<=200){  
        milld=((5)*purchaseAmt)/100;  
        handd=((7.5)*purchaseAmt)/100;  
        printf("Mill cloth discount %.02f\n",milld);  
        printf("Handloom Items discount %.02f\n",handd);  
    }  
    else if(201<=purchaseAmt&& purchaseAmt<=300){  
        milld=((7.5)*purchaseAmt)/100;  
        handd=((10)*purchaseAmt)/100;  
        printf("Mill cloth discount %.02f\n",milld);  
        printf("Handloom Items discount %.02f\n",handd);  
    }  
    else if(purchaseAmt>=300){
```

```
    milld=((10)*purchaseAmt)/100;
    handd=((15)*purchaseAmt)/100;
    printf("Mill cloth discount %.02f\n",milld);
    printf("Handloom Items discount %.02f\n",handd);
}
else{
    printf("invalid input");
}

bill=purchaseAmt-(milld+handd);
printf("The Net Amount To Pay is %.02f\n",bill );
getch();
}
```

Output:



```
C:\Harshal atre (EC076)\5\4test.exe
Enter the purchase amount 200
Mill cloth discount 10.00
Handloom Items discount 15.00
The Net Amount To Pay is 175.00
_
```

6.

6. The commission a life insurance sales woman earns on insurance policy sold is as follows:

Policy Amount (Rs.)	Commission
Less or Equal to 10000	0.5 % of Policy Amount
Between 10000 and 25000	Rs 50 + 0.6 % of the amount in excess of Rs 10000
Greater or Equal to 25000	Rs 140 + 0.75 % of the amount in excess of Rs 25000

Write a program that reads the amount of insurance sold and output the commission due to the sales woman.

Answer:

Source code:

```
#include <stdio.h>
#include<conio.h>

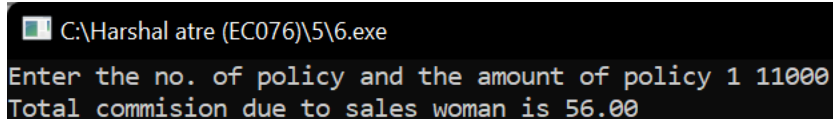
int main(){
    int noOfpolicy,amtOfpolicy;
    float commission;
    printf("Enter the no. of policy and the amount of policy ");
    scanf("%d%d",&noOfpolicy,&amtOfpolicy);

    if(amtOfpolicy<=10000){
        commission=amtOfpolicy*noOfpolicy*0.005;
    }
```

```
else if(amtOFpolicy<=25000 && amtOFpolicy>=10000){
    commission=50 + (amtOFpolicy-10000)*noOFpolicy*0.006;
}
else if(amtOFpolicy>25000){
    commission=140 + (amtOFpolicy-25000)*noOFpolicy*0.0075;
}
else{
    printf("Invalid input");
    commission=0;
}
printf("Total commision due to sales woman is %.02f",commission);

getch();
}
```

Output:



```
C:\Harshal atre (EC076)\5\6.exe
Enter the no. of policy and the amount of policy 1 11000
Total commision due to sales woman is 56.00
```