

## Assignment 1

### 1\_withoutReturnType\_withoutParameters

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

```
void temp()
```

```
{
```

```
    float c;
```

```
    printf("enter temperature in degree C=");
```

```
    scanf("%f",&c);
```

```
    float f=c*9/5+32;
```

```
    printf("temp %.2f in C =%.2f in F",c,f);
```

```
}
```

```
void areaAndCircum()
```

```
{
```

```
    char ch;
```

```
    printf("enter 'c' for circle and 'r' for rectangle=");
```

```
    scanf("%c",&ch);
```

```
    if(ch=='c')
```

```
    {
```

```
        //area and circumference of circle
```

```
        const float pi=3.14;
```

```
        int r;
```

```
        printf("enter the radius of circle=");
```

```
        scanf("%d",&r);
```

```
        float area=pi*r*r;
```

```
        float circum=2*pi*r;
```

```
        printf("area of circle= %.2f and circumference is =%.2f\n",area,circum);
```

```
}
```

```
else if(ch=='r')
```

```
{
```

```
    //area and perimeter of rectangle
```

```
    int l,b,ar;
```

```
    printf("enter length and breadth of rectangle=");
```

```
    scanf("%d %d",&l,&b);
```

```
    ar=l*b;
```

```
    int perim=2*(l+b);
```

```
    printf("area of rectangle=%d and perimeter of rectangle is=%d",ar,perim);
```

```
}
```

```
else
```

```
    printf("please enter correct choise");
```

```
}
```

```
void threeDigitNumber()
```

```
{
```

```
    int b;
```

```
    printf("enter the number=");
```

```
    scanf("%d",&b);
```

```
    int a=b;
```

```
    int temp,rev=0,sum=0;
```

```
    if(a>=100 && a<=999)
```

```
    {
```

```

        while(a>0)
        {
            temp=a%10;
            sum=sum+temp;
            rev=rev*10+temp;
            a=a/10;
        }
        printf("sum of digits of %d is=%d and its rev is %d",b,sum,rev);
    }
    else
        printf("please enter three digit number");
}

void salary()
{
    int basic;
    printf("enter the basic=");
    scanf("%d",&basic);

    float da,ta,hra,totalA,totalSalary;

    if(basic<=5000)
    {
        da=0.1;
        ta=0.2;
        hra=0.25;
        totalA=basic*(da+ta+hra);
        totalSalary=totalA+basic;
    }
    else
    {
        da=0.15;

```

```

        ta=0.25;

        hra=0.3;

        totalA=basic*(da+ta+hra);

        totalSalary=totalA+basic;

    }

    printf("total salary=%.2f",totalSalary);
}

void marriage()
{

    char gender;

    printf("enter the gender(m/f)=");

    scanf("%c",&gender);

    int age;

    printf("enter the age=");

    scanf("%d",&age);


    if(gender=='m'&&age>=21 || gender=='f'&&age>=18)

        printf("eligible");

    else

        printf("not eligible");

}

void main()
{

    temp();

    areaAndCircum();

    threeDigitNumber();

    salary();

    marriage();

}

```

## **2\_withoutReturnType\_withParameters**

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

```
void temp(float c)
{
    float f=c*9/5+32;
    printf("temp %.2f in C =%.2f in F",c,f);
}
```

```
void area(int r)
{
    //area and circumference of circle
    const float pi=3.14;
    float area=pi*r*r;
    printf("area of circle= %.2f\n",area);

}
```

```
void threeDigitNumber(int b)
{

    int a=b;

    int temp,rev=0,sum=0;
    if(a>=100 && a<=999)
    {
        while(a>0)
        {
            temp=a%10;
            sum=sum+temp;
            rev=rev*10+temp;
            a=a/10;
        }
        printf("sum of digits of %d is=%d and its rev is %d",b,sum,rev);
    }
}
```

```

    }

    else

        printf("please enter three digit number");

}

void sallary(int basic)
{

    float da,ta,hra,totalA,totalSallary;

    if(basic<=5000)
    {
        da=0.1;
        ta=0.2;
        hra=0.25;
        totalA=basic*(da+ta+hra);
        totalSallary=totalA+basic;
    }
    else
    {
        da=0.15;
        ta=0.25;
        hra=0.3;
        totalA=basic*(da+ta+hra);
        totalSallary=totalA+basic;
    }

    printf("total sallary=%.2f",totalSallary);

}

void marriage(char gender,int age)
{

    if(gender=='m'&&age>=21 || gender=='f'&&age>=18)

        printf("eligible");

```

```

        else
            printf("not eligible");
    }
void main()
{
    float c;

    printf("enter temperature in degree C=");
    scanf("%f",&c);
temp(c);

    int r;
    printf("enter the radius of circle=");
    scanf("%d",&r);
area(r);

    int b;
    printf("enter the number=");
    scanf("%d",&b);
threeDigitNumber(b);

    int basic;
    printf("enter the basic=");
    scanf("%d",&basic);
sallary(basic);

    fflush(stdin);
    char gender;
    printf("enter the gender(m/f)=");
    scanf("%c",&gender);
    int age;

```

```
    printf("enter the age=");  
    scanf("%d",&age);  
    marriage(gender,age);  
}
```

### **3\_withReturnType\_withoutParameters**

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

```
float temp()  
{  
    float c;  
    printf("enter temperature in degree C=");  
    scanf("%f",&c);  
  
    float f=c*9/5+32;  
    return f;  
}
```

```
float area()  
{  
    fflush(stdin);  
    char ch;  
    printf("enter 'c' for circle and 'r' for rectangle=");  
    scanf("%c",&ch);  
  
    if(ch=='c')  
    {  
        //area and circumference of circle  
        const float pi=3.14;  
        float r;  
        printf("enter the radius of circle=");  
        scanf("%f",&r);
```



```
float a=pi*r*r;  
return a;  
}
```

```
else if(ch=='r')  
{
```

```
    //area and perimeter of rectangle  
    float l,b,ar;  
    printf("enter length and breadth of rectangle=");  
    scanf("%f %f",&l,&b);
```

```
    ar=l*b;  
    return ar;  
}
```

```
else  
    printf("please enter correct choise");  
}
```

```
int threeDigitNumber()  
{  
    int b;  
  
    printf("enter the number=");  
    scanf("%d",&b);  
    int a=b;  
  
    int temp,rev=0,sum=0;  
    if(a>=100 && a<=999)  
    {
```

```

        while(a>0)
        {
            temp=a%10;
            sum=sum+temp;
            rev=rev*10+temp;
            a=a/10;
        }
        return sum;
    }
    else
        printf("please enter three digit number");
    return 0;
}

float salary()
{
    int basic;
    printf("enter the basic=");
    scanf("%d",&basic);

    float da,ta,hra,totalA,totalSalary;

    if(basic<=5000)
    {
        da=0.1;
        ta=0.2;
        hra=0.25;
        totalA=basic*(da+ta+hra);
        totalSalary=totalA+basic;
    }
    else
    {

```

```

        da=0.15;

        ta=0.25;

        hra=0.3;

        totalA=basic*(da+ta+hra);

        totalSalary=totalA+basic;

    }

    return totalSalary;

}

int marriage()
{
    fflush(stdin);

    char gender;

    printf("enter the gender(m/f)=");

    scanf("%c",&gender);

    int age;

    printf("enter the age=");

    scanf("%d",&age);


    if(gender=='m'&&age>=21 || gender=='f'&&age>=18)

        return 1;

    else

        return 0;


}

void main()
{
    float f=temp();

    printf("temp in F=%.2f\n",f);

    float a=area();

```

```

printf("area= %.2f\n",a);

int sum=threeDigitNumber();

if(sum)

printf("sum=%d\n",sum);

float sal=salary();

printf("total sallary=%.2f\n",sal);

int r=marriage();

if(r)

printf("elligible");

else

printf("not elligible");

}

```

#### **4\_withReturnType\_withParameters**

```

#include<stdio.h>

```

```

float temp(int c)

```

```

{

    float f=c*9/5+32;

    return f;

}

```

```

float area(int ch)

```

```

{

    if(ch=='c')

    {

        //area and circumference of circle

        const float pi=3.14;

        float r;

        printf("enter the radius of circle=");

        scanf("%f",&r);


        float a=pi*r*r;
    }
}

```

```
        return a;
    }
```

```
else if(ch=='r')
{
```

```
    //area and perimeter of rectangle
    float l,b,ar;
    printf("enter length and breadth of rectangle=");
    scanf("%f %f",&l,&b);
```

```
    ar=l*b;
    return ar;
}
```

```
else
    printf("please enter correct choise");
}
```

```
int threeDigitNumber(int b)
{
```

```
    int a=b;

    int temp,rev=0,sum=0;
    if(a>=100 && a<=999)
    {
        while(a>0)
        {
            temp=a%10;
            sum=sum+temp;
            rev=rev*10+temp;
```

```

        a=a/10;
    }
    return sum;
}
else
printf("please enter three digit number");
return 0;
}
float sallary(int basic)
{
    float da,ta,hra,totalA,totalSallary;

    if(basic<=5000)
    {
        da=0.1;
        ta=0.2;
        hra=0.25;
        totalA=basic*(da+ta+hra);
        totalSallary=totalA+basic;
    }
    else
    {
        da=0.15;
        ta=0.25;
        hra=0.3;
        totalA=basic*(da+ta+hra);
        totalSallary=totalA+basic;
    }
    return totalSallary;
}

```

```

int marriage(int gender,int age)
{
    if(gender=='m'&&age>=21 || gender=='f'&&age>=18)
        return 1;
    else
        return 0;
}

void main()
{

    float c;

    printf("enter temperature in degree C=");

    scanf("%f",&c);

    float f=temp(c);

    printf("temp in F=%.2f\n",f);


    fflush(stdin);

    char ch;

    printf("enter 'c' for circle and 'r' for rectangle=");

    scanf("%c",&ch);

    float a=area(ch);

    printf("area= %.2f\n",a);


    int b;

    printf("enter the number=");

    scanf("%d",&b);

    int sum=threeDigitNumber(b);

    if(sum)

    printf("sum=%d\n",sum);

```

```
int basic;

printf("enter the basic=");

scanf("%d",&basic);

float sal=salary(basic);

printf("total salary=%.2f\n",sal);
```

```
fflush(stdin);

char gender;

printf("enter the gender(m/f)=");

scanf("%c",&gender);

int age;

printf("enter the age=");

scanf("%d",&age);

int r=marriage(gender,age);

if(r)

printf("eligible");

else

printf("not eligible");

}
```

## **Assignment 2**

### **1\_withoutReturnType\_withoutParameters**

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

```
/*
```

Find the price of item when discount is given (specify different discount based on price)

```
*/
```

```
void discount()
```

```
{
```

```
int price;
```



```
int cost;

printf("enter the cost=");

scanf("%d",&cost);

int disc;

printf("enter the discount(5%,10%,15%,20%)=");

scanf("%d",&disc);


if(cost>0)
{
    if(disc==5)
    {
        price=cost-cost*0.05;
        printf("price=%d\n",price);
    }
    else if(disc==10)
    {
        price=cost-cost*0.10;
        printf("price=%d\n",price);
    }
    else if(disc==15)
    {
        price=cost-cost*0.15;
        printf("price=%d\n",price);
    }

    else if(disc==20)
    {
        price=cost-cost*0.20;
        printf("price=%d\n",price);
    }
    else
```

```

        printf("please enter valid discount\n");
    }
}

```

```

/*

```

Write a program to find greatest of three numbers using nested if-else.

```

*/

```

```

void greatest()

```

```

{
    int a,b,c;
    printf("enter three numbers=");
    scanf("%d %d %d",&a,&b,&c);

    if(a>b)
    {
        if(a>c)
            printf("%d is greater\n",a);
        else
            printf("%d is greater\n",c);
    }
    else
        if(b>c)
            printf("%d is greater\n",b);
        else
            printf("%d is greater\n",c);
}

```

```

/*Accept two numbers from user and an operator (+,-,/,*,%) based on that
perform the desiredoperations

```

```

*/

```

```

void operation()

```

```

{
    fflush(stdin);
}

```

```

printf("enter the operator=");

char op;

scanf("%c",&op);


printf("enter two numbers=");

int a,b;

scanf("%d %d",&a,&b);


if(op=='+' || op=='-' || op=='*' || op=='%' || op=='/')
{
    if(op=='+')
        printf("a+bs=%d\n",a+b);

    if(op=='-')
        printf("a-b=%d\n",a-b);

    if(op=='/')
        printf("a/b=%d\n",a/b);

    if(op=='*')
        printf("a*b=%d\n",a*b);

    if(op=='%')
        printf("a %'b=%d\n",a%b);

}

else

printf("invalid operator\n");

}

/*Display a menu to the user (like 1.Even Odd 2. Basic salary etc), ask the user to
enter his choice,then based on that perform the desired operations.*/

```

```
void menudriven()
{
    printf("enter your choice\n 1.Even Odd \n 2.Basic salary\n");
    int choice;
    scanf("%d",&choice);

    if(choice==1)
    {
        int a;
        printf("enter the number=");
        scanf("%d",&a);

        if(a%2==0)
            printf("%d is even\n",a);

        else
            printf("%d if odd\n",a);

    }
    else if(choice==2)
    {
        int basic;
        printf("enter the basic=");
        scanf("%d",&basic);

        float da,ta,hra,totalA,totalSalary;

        if(basic<=5000)
        {
            da=0.1;
```

```

        ta=0.2;
        hra=0.25;
        totalA=basic*(da+ta+hra);
        totalSalary=totalA+basic;
    }
    else
    {
        da=0.15;
        ta=0.25;
        hra=0.3;
        totalA=basic*(da+ta+hra);
        totalSalary=totalA+basic;
    }
    printf("total sallary=%.2f\n",totalSalary);
}

}

/*Accept the price from user. Ask the user if he is a student (user may say yes or
no). If he is a student and he has purchased more than 500 than discount is 20%
otherwise discount is 10%.But if he is not a student then if he has purchased
more than 600 discount is 15% otherwise there is not discount*/
void discountToStudent()
{
    fflush(stdin);
    int price;
    char c;
    printf("enter 's' for student:");
    scanf("%c",&c);
    printf("enter price=");
    scanf("%d",&price);
    int disc;

```

```

    if(c=='s')
    {
        if(price>=500)
        {
            disc=20;
            printf("%d percent discount\n",disc);

        }
        else
        {
            disc=10;
            printf("%d percent discount\n",disc);
        }
    }

    }

    else if(price>=600)
    {
        disc=15;
        printf("%d percent discount\n",disc);
    }

    else
        printf("no discount\n");
}

void main()
{
    discount();
    greatest();
    operation();
    menudriven();
    discountToStudent()    }

```

## 2\_withoutReturnType\_withParameters

//----->functions without return type and with parameters

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

```
/*
```

Find the price of item when discount is given (specify different discount based on price)

```
*/
```

```
void discount(int cost,int disc)
```

```
{
```

```
    int price;
```

```
    if(cost>0)
```

```
    {
```

```
        if(disc==5)
```

```
        {
```

```
            price=cost-cost*0.05;
```

```
            printf("price=%d\n",price);
```

```
        }
```

```
        else if(disc==10)
```

```
        {
```

```
            price=cost-cost*0.10;
```

```
            printf("price=%d\n",price);
```

```
        }
```

```
        else if(disc==15)
```

```
        {
```

```
            price=cost-cost*0.15;
```

```
            printf("price=%d\n",price);
```

```
        }
```

```
        else if(disc==20)
```

```
        {
```

```

        price=cost-cost*0.20;
        printf("price=%d\n",price);
    }
    else
        printf("please enter valid discount\n");
    }
}
/*

```

Write a program to find greatest of three numbers using nested if-else.

```

*/
void greatest(int a,int b,int c)
{
    if(a>b)
    {
        if(a>c)
            printf("%d is greater\n",a);
        else
            printf("%d is greater\n",c);
    }
    else
        if(b>c)
            printf("%d is greater\n",b);
        else
            printf("%d is greater\n",c);
}

/*Accept two numbers from user and an operator (+,-,/,*,%) based on that
perform the desiredoperations
*/
void operation(char op,int a,int b)
{

```



```

        if(op=='+' || op=='-' || op=='*' || op=='%' || op=='/')
        {

            if(op=='+')
                printf("a+b=%d\n",a+b);

            if(op=='-')
                printf("a-b=%d\n",a-b);

            if(op=='/')
                printf("a/b=%d\n",a/b);

            if(op=='*')
                printf("a*b=%d\n",a*b);

            if(op=='%')
                printf("a %'b=%d\n",a%b);

        }

        else

            printf("invalid operator\n");

    }

    /*Display a menu to the user (like 1.Even Odd 2. Basic salary etc), ask the user to
    enter his choice,then based on that perform the desired operations.*/

    void menudriven(int choice)
    {

        if(choice==1)
        {

            int a;

            printf("enter the number=");

            scanf("%d",&a);

```

```
if(a%2==0)

printf("%d is even\n",a);


else

printf("%d if odd\n",a);


}

else if(choice==2)
{
    int basic;

printf("enter the basic=");

scanf("%d",&basic);


float da,ta,hra,totalA,totalSalary;


if(basic<=5000)
{
    da=0.1;
    ta=0.2;
    hra=0.25;
    totalA=basic*(da+ta+hra);
    totalSalary=totalA+basic;
}
else
{
    da=0.15;
    ta=0.25;
    hra=0.3;
    totalA=basic*(da+ta+hra);
    totalSalary=totalA+basic;
}
```

```

        printf("total salary=%.2f\n",totalSalary);
    }

}

/*Accept the price from user. Ask the user if he is a student (user may say yes or
no). If he is a student and he has purchased more than 500 than discount is 20%
otherwise discount is 10%.But if he is not a student then if he has purchased
more than 600 discount is 15% otherwise there is not discount*/
void discountToStudent(char c,int price)
{
    int disc;
    if(c=='s')
    {
        if(price>=500)
        {
            disc=20;
            printf("%d percent discount\n",disc);

        }
        else
        {
            disc=10;
            printf("%d percent discount\n",disc);
        }

    }

    else if(price>=600)
    {
        disc=15;
        printf("%d percent discount\n",disc);
    }
}

```

```

        else
            printf("no discount\n");
    }
void main()
{
    int cost;
    printf("enter the cost=");
    scanf("%d",&cost);
    int disc;
    printf("enter the discount(5%,10%,15%,20%)=");
    scanf("%d",&disc);
    discount(cost,disc);

    int a,b,c;
    printf("enter three numbers=");
    scanf("%d %d %d",&a,&b,&c);
    greatest(a,b,c);

    fflush(stdin);
    printf("enter the operator=");
    char op;
    scanf("%c",&op);
    printf("enter two numbers=");
    int a1,b1;
    scanf("%d %d",&a1,&b1);
    operation(op,a1,b1);

    printf("enter your choice\n 1.Even Odd \n 2.Basic salary\n");
    int choice;
    scanf("%d",&choice);
    menudriven(choice);

```

```

fflush(stdin);

int price;

char c1;

printf("enter if person is student or not(s/n)");

scanf("%c",&c1);

printf("enter price=");

scanf("%d",&price);

discountToStudent(c1,price);

}

```

### **3\_withReturnType\_withoutParameters**

```

#include<stdio.h>

/*
Find the price of item when discount is given (specify different discount based on
price)
*/

int discount()
{
    int price;
    int cost;
    printf("enter the cost=");
    scanf("%d",&cost);
    int disc;
    printf("enter the discount(5%,10%,15%,20%)=");
    scanf("%d",&disc);

    if(cost>0)
    {
        if(disc==5)
        {
            price=cost-cost*0.05;

```

```

        return price;
    }
    else if(disc==10)
    {
        price=cost-cost*0.10;
        return price;
    }
    else if(disc==15)
    {
        price=cost-cost*0.15;
        return price;
    }

    else if(disc==20)
    {
        price=cost-cost*0.20;
        return price;
    }

    else
    printf("please enter valid discount\n");
    return 0;
}

/*

```

Write a program to find greatest of three numbers using nested if-else.

```

*/
int greatest()
{
    int a,b,c;
    printf("enter three numbers=");

```

```
scanf("%d %d %d",&a,&b,&c);
```

```
if(a>b)
```

```
{
```

```
    if(a>c)
```

```
        return a;
```

```
    else
```

```
        return c;
```

```
}
```

```
else
```

```
if(b>c)
```

```
    return b;
```

```
else
```

```
    return c;
```

```
}
```

```
/*Accept two numbers from user and an operator (+,-,/,*,%) based on that  
perform the desiredoperations
```

```
*/
```

```
int sum()
```

```
{
```

```
    printf("enter two numbers=");
```

```
    int a,b;
```

```
    scanf("%d %d",&a,&b);
```

```
    return a+b;
```

```
}
```

```
int subtraction()
```

```
{
```

```
    printf("enter two numbers=");
```

```
    int a,b;
```

```
    scanf("%d %d",&a,&b);
```

```

        return a-b;
    }
    int mult()
    {
        printf("enter two numbers=");
        int a,b;
        scanf("%d %d",&a,&b);
        return a*b;
    }

```

```

    float div()
    {
        printf("enter two numbers=");
        int a,b;
        scanf("%d %d",&a,&b);
        return a/b;
    }

```

```

    int mod()
    {
        printf("enter two numbers=");
        int a,b;
        scanf("%d %d",&a,&b);
        return a%b;
    }

```

/\*Display a menu to the user (like 1.Even Odd 2. Basic salary etc), ask the user to enter his choice,then based on that perform the desired operations.\*/

```

    int menudriven()
    {
        printf("enter your choice\n 1.Even Odd \n 2.Basic salary\n");
    }

```



```
int choice;

scanf("%d",&choice);


if(choice==1)
{
    int a;
    printf("enter the number=");
    scanf("%d",&a);

    if(a%2==0)
        return 1;

    else
        return 0;

}
else if(choice==2)
{
    int basic;
    printf("enter the basic=");
    scanf("%d",&basic);

    float da,ta,hra,totalA,totalSalary;

    if(basic<=5000)
    {
        da=0.1;
        ta=0.2;
        hra=0.25;
        totalA=basic*(da+ta+hra);
```

```

        totalSalary=totalA+basic;
    }
    else
    {
        da=0.15;
        ta=0.25;
        hra=0.3;
        totalA=basic*(da+ta+hra);
        totalSalary=totalA+basic;
    }
    return totalSalary;

}

}

/*Accept the price from user. Ask the user if he is a student (user may say yes or
no). If he is a student and he has purchased more than 500 than discount is 20%
otherwise discount is 10%.But if he is not a student then if he has purchased
more than 600 discount is 15% otherwise there is not discount*/
int discountToStudent()
{
    fflush(stdin);
    int price;
    char c;
    printf("enter 's' for student:");
    scanf("%c",&c);
    printf("enter price=");
    scanf("%d",&price);
    int disc;

    if(c=='s')

```

```

    {
        if(price>=500)
        {
            disc=20;
            return disc;
        }
        else
        {
            disc=10;
            return disc;
        }
    }

    else if(price>=600)
    {
        disc=15;
        return disc;
    }

    else
    printf("no discount\n");
    return 0;
}

void main()
{
    int price=discount();
    printf("price=%d\n",price);

    int res=greatest();
    printf("greatest=%d\n",res);

    fflush(stdin);

```

```
printf("enter the operator=");

char op;

scanf("%c",&op);

if(op=='+')

{

int a=sum();

printf("sum=%d\n",a);

}

else if(op=='*')

{

int b=mult();

printf("mult=%d\n",b);

}

else if(op=='/')

{

float c=div();

printf("div=%d\n",c);

}

else if(op=='%')

{

int d=mod();

printf("mod=%d\n",d);

}

else if(op=='-')

{

int e=subtraction();

printf("sub=%d\n",e);

}

else

printf("invalid operator");
```

```

        int disc=discountToStudent();

        printf("%d percent discount\n",disc);

    }

```

#### **4\_withReturnType\_withParameters**

```

#include<stdio.h>

/*
Find the price of item when discount is given (specify different discount based on
price)
*/
int discount(int cost,int disc)
{
    int price;
    if(cost>0)
    {
        if(disc==5)
        {
            price=cost-cost*0.05;
            return price;
        }
        else if(disc==10)
        {
            price=cost-cost*0.10;
            return price;
        }
        else if(disc==15)
        {
            price=cost-cost*0.15;
            return price;
        }
    }
}

```

```

        else if(disc==20)
        {
            price=cost-cost*0.20;
            return price;

        }
        else
        printf("please enter valid discount\n");
        return 0;
    }
}
/*

```

Write a program to find greatest of three numbers using nested if-else.

```

*/
int greatest(int a,int b,int c)
{

    if(a>b)
    {
        if(a>c)
            return a;
        else
            return c;
    }
    else
        if(b>c)
            return b;
        else
            return c;
}

```

```
/*Accept two numbers from user and an operator (+,-,/,*,%) based on that  
perform the desiredoperations
```

```
*/
```

```
int sum(int a1,int b1)
```

```
{
```

```
    return a1+b1;
```

```
}
```

```
int subtraction(int a1,int b1)
```

```
{
```

```
    return a1-b1;
```

```
}
```

```
int mult(int a1,int b1)
```

```
{
```

```
    return a1*b1;
```

```
}
```

```
float div(int a1,int b1)
```

```
{
```

```
    return a1/b1;
```

```
}
```

```
int mod(int a1,int b1)
```

```
{
```

```
    return a1%b1;
```

```
}
```

```
/*Display a menu to the user (like 1.Even Odd 2. Basic salary etc), ask the user to  
enter his choice,then based on that perform the desired operations.*/
```

```
int menudriven()
```

```
{
```

```
    printf("enter your choice\n 1.Even Odd \n 2.Basic salary\n");
```

```
int choice;

scanf("%d",&choice);


if(choice==1)
{
    int a;
    printf("enter the number=");
    scanf("%d",&a);

    if(a%2==0)
        return 1;

    else
        return 0;

}
else if(choice==2)
{
    int basic;
    printf("enter the basic=");
    scanf("%d",&basic);

    float da,ta,hra,totalA,totalSalary;

    if(basic<=5000)
    {
        da=0.1;
        ta=0.2;
        hra=0.25;
        totalA=basic*(da+ta+hra);
```



```

        totalSalary=totalA+basic;
    }
    else
    {
        da=0.15;
        ta=0.25;
        hra=0.3;
        totalA=basic*(da+ta+hra);
        totalSalary=totalA+basic;
    }
    return totalSalary;

}

}

/*Accept the price from user. Ask the user if he is a student (user may say yes or
no). If he is a student and he has purchased more than 500 than discount is 20%
otherwise discount is 10%.But if he is not a student then if he has purchased
more than 600 discount is 15% otherwise there is not discount*/
int discountToStudent(char c,int price)
{
    int disc;
    if(c=='s')
    {
        if(price>=500)
        {
            disc=20;
            return disc;
        }
        else
        {

```

```

        disc=10;
    return disc;
}

}

else if(price>=600)
{
    disc=15;
    return disc;
}

else
    printf("no discount\n");
    return 0;
}

void main()
{
    //function1

    int cost;

    printf("enter the cost=");

    scanf("%d",&cost);

    int disc;

    printf("enter the discount(5%,10%,15%,20%)=");

    scanf("%d",&disc);

    int price=discount(cost,disc);

    printf("price=%d\n",price);


    //function2

    int a,b,c;

    printf("enter three numbers=");

    scanf("%d %d %d",&a,&b,&c);

    int res=greatest(a,b,c);

```

```
printf("greatest=%d\n",res);
```

```
//function3
```

```
fflush(stdin);
```

```
printf("enter the operator=");
```

```
char op;
```

```
scanf("%c",&op);
```

```
printf("enter two numbers=");
```

```
int a1,b1;
```

```
scanf("%d%d",&a1,&b1);
```

```
if(op=='+')
```

```
printf("sum=%d\n",sum(a1,b1));
```

```
else if(op=='*')
```

```
printf("mult=%d\n",mult(a1,b1));
```

```
else if(op=='/')
```

```
printf("div=%d\n",div(a1,b1));
```

```
else if(op=='%')
```

```
printf("mod=%d\n",mod(a1,b1));
```

```
else if(op=='-')
```

```
printf("sub=%d\n",subtraction(a1,b1));
```

```
else
```

```
printf("invalid operator");
```

```
//function4
```

```
fflush(stdin);
```

```
char c;
```

```

printf("enter 's' for student:");

scanf("%c",&c);

int price;

printf("enter price=");

scanf("%d",&price);

printf("%d percent discount\n",discountToStudent(c,price));

}

```

### Assignment 3

#### 1\_ withoutReturn\_type\_withoutParameters

```

void numbers()
{
    int i=1;
    while(i<=10)
    {
        printf("%d\n",i);
        i++;
    }
}

void table()
{
    int no;
    printf("enter the number=");
    scanf("%d",&no);
    int i=1;
    while(i<=10)
    {
        printf("%d*%d=%d\n",no,i,no*i);
        i++;
    }
}

```

```

void sumOfNumbersBtn()
{
    int a,b,sum=0;
    printf("enter a and b=");
    scanf("%d %d",&a,&b);
    int i=a;
    while(i<=b)
    {
        sum=sum+i;
        i++;
    }
    printf("sum of numbers btn %d to %d is =%d\n",a,b,sum);
}

```

```

void prime()
{
    int num;
    printf("enter the number=");
    scanf("%d",&num);

    int i=1,count=0;
    while(i<=num)
    {
        if(num%i==0)
            count++;
        i++;
    }

    if(count==2)
        printf("%d is prime number\n",num);
    else

```

```

        printf("%d is not a prime number\n",num);
    }
void armstrong()
{
    //Armstrong number is number who's sum of cubes of its digits is equal to number itself
    int num;
    printf("enter the number to be check=");
    scanf("%d",&num);
    int num1=num;
    int rem,sum=0;

    while(num1>0)
    {

        rem=num1%10;
        num1=num1/10;
        sum=sum+rem*rem*rem;

    }
    if(sum==num)
        printf("%d is a Armstrong number.\n",num);

    else
        printf("%d is not a Armstrong number.\n",num);
}
void perfect()
{
    //perfect number is a positive integer that is equal to sum of its proper divisors excluding
    itself

    int num,sum=0;

```

```

printf("enter the number=");

scanf("%d",&num);

int i=1;
while(i<num)
{
    if(num%i==0)
        sum=sum+i;
    i++;
}
if(num==sum)
printf("%d is a perfect number\n",num);

else
printf("%d is not a perfect number\n",num);

}

void facto()
{
    int num;

    printf("enter the number whose factorial is to be find=");

    scanf("%d",&num);

    int fact=1;

    int i=num;
    while(i>0)
    {
        fact*=i;
        i--;
    }

    printf("factorial of %d is =%d\n",num,fact);

}

```

//strong number is a number who's sum of factorial of each digit is same as number itself

```
void strong()
```

```
{
```

```
    int num;
```

```
    printf("enter the number=");
```

```
    scanf("%d",&num);
```

```
    int i=num;
```

```
    int rem,sum=0;
```

```
    while(i>0)
```

```
    {
```

```
        //1.extracting last digit of number
```

```
        rem=i%10;
```

```
        i=i/10;
```

```
        //2.finding factorial of last digit i.e fact of rem
```

```
        int fact=1;
```

```
        while(rem>0)
```

```
        {
```

```
            fact*=rem;
```

```
            rem--;
```

```
        }
```

```
        //3.adding the factorial of each digit.
```

```
        sum+=fact;
```

```
    }
```

```
    if(sum==num)
```

```
        printf("%d is a Strong Number.\n",num);
```

```
    else
```

```
        printf("%d is not a Strong number.\n",num);
```

```
}
```

```
void palindrome()
```

```
{
```



```

int num;

printf("enter the number=");

scanf("%d",&num);


int i=num,rem,rev=0;
while(i>0)
{
    rem=i%10;

    i=i/10;

    rev=rev*10+rem;

}

if(rev==num)

printf("%d is a Palindrome number.\n",num);

else

printf("%d is not a Palindrome number.\n",num);

}

void sumOfFirstAndLastDigit()
{

    int num;

    printf("enter the number=");

    scanf("%d",&num);

    int rem,first,last;

    int i=num;

    while(i>0)

    {

        rem=i%10;

        if(i==num)

            last=rem;

        i=i/10;

    }

```

```

        first=rem;

        printf("sum of first and last digit of %d is=%d\n",num,first+last);

    }

void main()
{
    numbers();
    table();
    sumOfNumbersBtn();
    prime();
    armstrong();
    perfect();
    facto();
    strong();
    palindrome();
    sumOfFirstAndLastDigit();
}

```

## **2\_ withoutReturn Type \_withParameters**

```

void numbers(int i,int j)
{

    while(i<=j)
    {
        printf("%d\n",i);
        i++;
    }
}

void table(int no)
{
    int i=1;
    while(i<=10)

```

```

        {

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

            i++;

        }

    }

void sumOfNumbersBtn(int a,int b)

{

    int sum=0;

    int i=a;

    while(i<=b)

    {

        sum=sum+i;

        i++;

    }

    printf("sum of numbers btn %d to %d is =%d\n",a,b,sum);

}

void prime(int num)

{

    int i=1,count=0;

    while(i<=num)

    {

        if(num%i==0)

            count++;

        i++;

    }

    if(count==2)

        printf("%d is prime number\n",num);

    else

```

```

        printf("%d is not a prime number\n",num);
    }
void armstrong(int no)
{
    //Armstrong number is number who's sum of cubes of its digits is equal to number itself

    int num1=no;
    int rem,sum=0;

    while(num1>0)
    {

        rem=num1%10;
        num1=num1/10;
        sum=sum+rem*rem*rem;

    }
    if(sum==no)
        printf("%d is a Armstrong number.\n",no);

    else
        printf("%d is not a Armstrong number.\n",no);
}
void perfect(int number)
{
    //perfect number is a positive integer that is equal to sum of its proper devisors excluding
    itself

    int sum=0;
    int i=1;

```

```

while(i<number)
{
    if(number%i==0)
        sum=sum+i;
    i++;
}
if(number==sum)
printf("%d is a perfect number\n",number);

else
printf("%d is not a perfect number\n",number);

}

```

```

void facto(int numb)
{
    int fact=1;

    int i=numb;
    while(i>0)
    {
        fact*=i;
        i--;
    }
    printf("factorial of %d is =%d\n",numb,fact);
}

```

//strong number is a number who's sum of factorial of each digit is same as number itself

```

void strong(int x)
{

    int i=x;

```

```

int rem,sum=0;
while(i>0)
{
    //1.extracting last digit of number
    rem=i%10;
    i=i/10;
    //2.finding factorial of last digit i.e fact of rem
    int fact=1;
    while(rem>0)
    {
        fact*=rem;
        rem--;
    }
    //3.adding the factorial of each digit.
    sum+=fact;
}
if(sum==x)
printf("%d is a Strong Number.\n",x);
else
printf("%d is not a Strong number.\n",x);
}

void palindrome(int t)
{
    int i=t,rem,rev=0;
    while(i>0)
    {
        rem=i%10;
        i=i/10;
        rev=rev*10+rem;
    }
    if(rev==t)

```

```

        printf("%d is a Palindrome number.\n",t);

    else

        printf("%d is not a Palindrome number.\n",t);
}

void sumOfFirstAndLastDigit(int y)
{
    int rem,first,last;

    int i=y;

    while(i>0)
    {
        rem=i%10;

        if(i==y)

            last=rem;

        i=i/10;

    }

    first=rem;

    printf("sum of first and last digit of %d is=%d\n",y,first+last);

}

void main()
{
    int i,j;

    printf("enter the starting and ending=");

    scanf("%d%d",&i,&j);

    numbers(i,j);

    int no;

    printf("enter the number=");

    scanf("%d",&no);

    table(no);

```

```
int a,b;  
  
printf("enter a and b=");  
scanf("%d %d",&a,&b);  
sumOfNumbersBtn(a,b);
```

```
int num;  
  
printf("enter the number=");  
scanf("%d",&num);  
prime(num);
```

```
int numb;  
  
printf("enter the number to be check=");  
scanf("%d",&numb);  
armstrong(numb);
```

```
int number;  
  
printf("enter the number=");  
scanf("%d",&number);  
perfect(number);
```

```
int z;  
  
printf("enter the number whose factorial is to be find=");  
scanf("%d",&z);  
facto(z);
```

```
int x;  
  
printf("enter the number=");  
scanf("%d",&x);  
strong(x);
```



```
int t;

printf("enter the number=");

scanf("%d",&t);

palindrome(t);
```

```
int y;

printf("enter the number=");

scanf("%d",&y);

sumOfFirstAndLastDigit(y);
```

```
}
```

### **3\_ withReturnType\_withoutParameters**

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

```
int sumOfNumbersBtn()
```

```
{
```

```
    int a,b,sum=0;

    printf("enter a and b=");

    scanf("%d %d",&a,&b);

    int i=a;

    while(i<=b)

    {

        sum=sum+i;

        i++;

    }

    return sum;
```

```
}
```

```
int prime()
```

```
{
```

```
    int num;

    printf("enter the number to check if prime or not=");

    scanf("%d",&num);
```

```

    int i=2;
    while(i<num)
    {
        if(num%i==0)
            return 0;
        i++;
    }
    return 1;
}

int armstrong()
{
    //Armstrong number is number who's sum of cubes of its digits is equal to number itself
    int num;
    printf("enter the number to be check if armstrong or not=");
    scanf("%d",&num);
    int num1=num;
    int rem,sum=0;

    while(num1>0)
    {

        rem=num1%10;
        num1=num1/10;
        sum=sum+rem*rem*rem;

    }
    if(sum==num)
        return 1;

    else
        return 0;
}

```

```

}

int perfect()
{
    //perfect number is a positive integer that is equal to sum of its proper devisors excluding
    itself

    int num,sum=0;
    printf("enter the number ot be check if perfect or not=");
    scanf("%d",&num);
    int i=1;
    while(i<num)
    {
        if(num%i==0)
            sum=sum+i;
        i++;
    }
    if(num==sum)
        return 1;

    else
        return 0;
}

int facto()
{
    int num;
    printf("enter the number whose factorial is to be find=");
    scanf("%d",&num);
    int fact=1;

    int i=num;
    while(i>0)

```

```

        {
            fact*=i;
            i--;
        }
    return fact;

}

//strong number is a number who's sum of factorial of each digit is same as number itself

```

```

int strong()
{
    int num;
    printf("enter the number to be check if strong or not=");
    scanf("%d",&num);
    int i=num;
    int rem,sum=0;
    while(i>0)
    {
        //1.extracting last digit of number
        rem=i%10;
        i=i/10;
        //2.finding factorial of last digit i.e fact of rem
        int fact=1;
        while(rem>0)
        {
            fact*=rem;
            rem--;
        }
        //3.adding the factorial of each digit.
        sum+=fact;
    }
}

```

```

    }
    if(sum==num)
    return 1;
    else
    return 0;

}

int palindrome()
{
    int num;

    printf("enter the number to be check if palindrome or not=");
    scanf("%d",&num);

    int i=num,rem,rev=0;
    while(i>0)
    {
        rem=i%10;
        i=i/10;
        rev=rev*10+rem;
    }
    if(rev==num)
    return 1;
    else
    return 0;

}

int sumOfFirstAndLastDigit()
{
    int num;

    printf("enter the number to find sum of its first and last digit=");
    scanf("%d",&num);

```

```

int rem,last;

int i=num;//123
while(i>0)
{
    rem=i%10;
    if(i==num)
        last=rem;
    i=i/10;
}

return rem+last;

}

void main()
{

    int sum=sumOfNumbersBtn();
    printf("sum is =%d\n",sum);


    if(prime())
        printf("prime number\n");
    else
        printf("not prime number\n");


    if(armstrong())
        printf("armstrong number\n");
    else
        printf("not armstrong number\n");


    if(perfect())

```

```
printf("perfect number\n");  
  
else  
  
printf("not perfect number\n");  
  
  
printf("factorial is =%d\n",facto());
```

```
if(strong())  
printf("strong\n");  
  
else  
  
printf("not strong\n");
```

```
if(palindrome())  
printf("palindrome\n");  
  
else  
  
printf("not palindrom\n");
```

```
printf("sum=%d\n",sumOfFirstAndLastDigit());
```

```
}
```

#### **4\_ withReturnType\_withParameters**

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

```
int sumOfNumbersBtn(int a,int b)
```

```
{
```

```
    int sum=0;
```

```
    int i=a;
```

```
    while(i<=b)
```

```
    {
```

```
        sum=sum+i;
```

```
        i++;
```

```
    }
```

```
    return sum;
```

```

}
int prime(int num)
{
    int i=2;
    while(i<num)
    {
        if(num%i==0)
            return 0;
        i++;
    }
    return 1;
}
int armstrong(int num1)
{
    //Armstrong number is number who's sum of cubes of its digits is eqaul to number itself
    int num2=num1;
    int rem,sum=0;

    while(num2>0)
    {

        rem=num2%10;
        num2=num2/10;
        sum=sum+rem*rem*rem;

    }
    if(sum==num1)
        return 1;

    else
        return 0;
}

```



```

}
int perfect(int num2)
{
    //perfect number is a positive integer that is equal to sum of its proper devisors excluding
    itself

    int sum=0;
    int i=1;
    while(i<num2)
    {
        if(num2%i==0)
        {
            sum=sum+i;
            i++;
        }
    }
    if(num2==sum)
    {
        return 1;
    }
    else
    {
        return 0;
    }
}

int facto(int no)
{
    int fact=1;

    int i=no;
    while(i>0)
    {
        fact*=i;
        i--;
    }
    return fact;
}

```

```
}
```

//strong number is a number who's sum of factorial of each digit is same as number itself

```
int strong(int n)
```

```
{
```

```
    int i=n;
```

```
    int rem,sum=0;
```

```
    while(i>0)
```

```
    {
```

```
        //1.extracting last digit of number
```

```
        rem=i%10;
```

```
        i=i/10;
```

```
        //2.finding factorial of last digit i.e fact of rem
```

```
        int fact=1;
```

```
        while(rem>0)
```

```
        {
```

```
            fact*=rem;
```

```
            rem--;
```

```
        }
```

```
        //3.adding the factorial of each digit.
```

```
        sum+=fact;
```

```
    }
```

```
    if(sum==n)
```

```
        return 1;
```

```
    else
```

```
        return 0;
```

```
}
```

```
int palindrome(int s)
```

```

{
    int i=s,rem,rev=0;
    while(i>0)
    {
        rem=i%10;
        i=i/10;
        rev=rev*10+rem;
    }
    if(rev==s)
    return 1;
    else
    return 0;
}

int sumOfFirstAndLastDigit(int number)
{

    int rem,last;
    int i=number;
    while(i>0)
    {
        rem=i%10;
        if(i==number)
        last=rem;
        i=i/10;
    }

    return rem+last;

}

void main()

```

```

{
//function 1
int a,b;
printf("enter a and b=");
    scanf("%d %d",&a,&b);
    printf("sum is =%d\n",sumOfNumbersBtn(a,b));

//function 2
int num;
printf("enter the number to check if prime or not=");
scanf("%d",&num);
if(prime(num))
printf("prime number\n");
else
printf("not prime number\n");

//function 3
int num1;
printf("enter the number to be check if armstrong or not=");
scanf("%d",&num1);
if(armstrong(num1))
printf("armstrong number\n");
else
printf("not armstrong number\n");

//function 4
int num2;
printf("enter the number ot be check if perfect or not=");
scanf("%d",&num2);
if(perfect(num2))
printf("perfect number\n");

```

```
else  
printf("not perfect number\n");
```

```
//function 5
```

```
int no;  
printf("enter the number whose factorial is to be find=");  
scanf("%d",&no);  
printf("factorial is =%d\n",facto(no));
```

```
//function 6
```

```
int n;  
printf("enter the number to be check if strong or not=");  
scanf("%d",&n);  
if(strong(n))  
printf("strong\n");  
else  
printf("not strong\n");
```

```
//function 7
```

```
int s;  
printf("enter the number to be check if palindrome or not=");  
scanf("%d",&s);  
if(palindrome(s))  
printf("palindrome\n");  
else  
printf("not palindrom\n");
```

```
//function 8
```

```
int number;  
printf("enter the number to find sum of its first and last digit=");
```

```

scanf("%d",&number);

printf("sum=%d\n",sumOfFirstAndLastDigit(number));

}

```

#### Assignment 4

##### 1\_ withoutReturn\_type\_withoutParameters

```

#include<stdio.h>

void primeNumbersBtn()
{
    int start,end;

    printf("enter start and end to check prime numbers btn=");
    scanf("%d%d",&start,&end);

    for(int i=start;i<=end;i++)
    {
        int flag=0;
        for(int j=2;j<=i/2;j++)
        {
            if(i%j==0)
            {
                flag=1;
                break;
            }
        }
        if(flag==0)
            printf("%d\n",i);
    }
}

void armstrongBtn()
{
    int start,end;

    printf("enter start and end to check armstrong numbers btn=");

```

```

scanf("%d%d",&start,&end);

for(int i=start;i<=end;i++)
{
    int rem,sum=0;
    int j=i;
    while(j>0)
    {
        rem=j%10;
        j=j/10;
        sum=sum+rem*rem*rem;
    }

    if(sum==i)
        printf("%d\n",i);
}
}

void perfectNumbersBtn()
{
    int start,end;

    printf("enter start and end to check perfect numbers btn=");
    scanf("%d%d",&start,&end);

    for(int i=start;i<=end;i++)
    {
        int sum=0;
        for(int j=1;j<i;j++)
        {
            if(i%j==0)
                sum=sum+j;
        }
    }
}

```

```

        if(sum==i)
            printf("%d\n",i);
    }
}

void strongNumbersBtn()
{
    int start,end;

    printf("enter start and end to check strong numbers btn =");
    scanf("%d%d",&start,&end);

    for(int i=start;i<=end;i++)
    {
        int flag=0;
        for(int j=2;j<=i/2;j++)
        {
            if(i%j==0)
            {
                flag=1;
                break;
            }
        }
        if(flag==0)
            printf("%d\n",i);
    }
}

void fibonicii()
{
    int no;

    printf("enter the number upto which u want to printf fibonicii series=");
    scanf("%d",&no);

```



```

    int a=0,b=1;

    printf("%d\n%d\n",a,b);

    for(int i=1;i<no-1;i++)
    {

        int c=a+b;
        printf("%d\n",c);
        a=b;
        b=c;
    }
}

void main()
{
    primeNumbersBtn();
    armstrongBtn();
    perfectNumbersBtn();
    strongNumbersBtn();
    fibonici();
}

```

## 2\_ withoutReturn Type\_ withParameters

```

#include<stdio.h>

void primeNumbersBtn(int start,int end)
{

    for(int i=start;i<=end;i++)
    {
        int flag=0;
        for(int j=2;j<=i/2;j++)
        {
            if(i%j==0)

```

```

        {
            flag=1;
            break;
        }
    }
    if(flag==0)
        printf("%d\n",i);
}

}

void armstrongBtn(int start,int end)
{
    for(int i=start;i<=end;i++)
    {
        int rem,sum=0;
        int j=i;
        while(j>0)
        {
            rem=j%10;
            j=j/10;
            sum=sum+rem*rem*rem;
        }

        if(sum==i)
            printf("%d\n",i);
    }
}

void perfectNumbersBtn(int start,int end)
{
    for(int i=start;i<=end;i++)
    {
        int sum=0;

```

```

        for(int j=1;j<i;j++)
        {
            if(i%j==0)
                sum=sum+j;
        }
        if(sum==i)
            printf("%d\n",i);
    }
}

void strongNumbersBtn(int start,int end)
{
    for(int i=start;i<=end;i++)
    {
        int flag=0;
        for(int j=2;j<=i/2;j++)
        {
            if(i%j==0)
            {
                flag=1;
                break;
            }
        }
        if(flag==0)
            printf("%d\n",i);
    }
}

void fibonicki(int no)
{
    int a=0,b=1;
    printf("%d\n%d\n",a,b);

```

```

for(int i=1;i<no-1;i++)
{

    int c=a+b;
    printf("%d\n",c);
    a=b;
    b=c;
}
}
void main()
{
    int start,end;
    printf("enter start and end to check prime numbers btn=");
    scanf("%d%d",&start,&end);
    primeNumbersBtn(start,end);

    printf("enter start and end to check armstrong numbers btn=");
    scanf("%d%d",&start,&end);
    armstrongBtn(start,end);

    printf("enter start and end to check perfect numbers btn=");
    scanf("%d%d",&start,&end);
    perfectNumbersBtn(start,end);

    printf("enter start and end to check strong numbers btn =");
    scanf("%d%d",&start,&end);
    strongNumbersBtn(start,end);

    int no;
    printf("enter the number upto which u want to printf fibonici series=");
    scanf("%d",&no);

```

```
fibonacci(no);
```

```
}
```