Assignment 5

Assignment1

1. Finding F from C (temp)

```
//function without parameters without returntype
//findind F from C (temp)
#include<stdio.h>
void F_C();
void main(){

    F_C();
}
void F_C(){
    float C=12.3;
    float F;

    F=(C*9/5)+32;
    printf(" c is %f and its F is %f",C,F);
}
```

2

. Finding area and perimeter of rectangle or circle

```
//function without parameters without returntype
//find area of rectangle and circle
#include<stdio.h>

void cicle();
void rectangle();


void main(){
```

```
                circle();
                rectangle();

}

void circle(){


        float radius=3.5,pie=3.14,area_C,perimeter_C;
        area_C=pie*radius*radius;
        perimeter_C=2*pie*radius;
        printf("\narea of circle is %f",area_C);
        printf("\nperimeter of circle is %f\n",perimeter_C);


}


void rectangle(){

    float length=12.3,breadth=10,area_R,perimeter_R;


    area_R=length*breadth;
    perimeter_R=2*(length+breadth);


    printf("\narea of rectangle is %f",area_R);
    printf("\nperimeter of rectangle is %f",perimeter_R);
}
```

---

2. 3. Accept a 3 digit number from user and find the sum of the digits and also reverse the numbe

```
////function without parameters without returntype
//accept 3 digit num ,sum the digits and reverse
```

```
#include<stdio.h>
//declaration
void sum();
void rev();


void main(){


        sum();
        rev();

}


//defination
void sum(){
    int num=123,sum,rev;
    int r1,r2,r3,q1,q2,q3;

    r1=num%10;
    q1=num/10;

    r2=q1%10;
    q2=q1/10;

    r3=q2%10;
    q3=q2/10;

    sum=r1+r2+r3;
```

```
    printf("\nThe sum of the digit is %d ",sum);



}

void  rev(){
            int num=123,sum,rev;
    int r1,r2,r3,q1,q2,q3;

    r1=num%10;
    q1=num/10;

    r2=q1%10;
    q2=q1/10;

    r3=q2%10;
    q3=q2/10;



    rev=(r1*100)+(r3*10)+(r3*1);



    printf("\nThe reverse of the number is %d",rev);

}
```

---

3. Check if the given number is even or odd.

```
    //function without parameters without returntype
    //check even and odd
    #include<stdio.h>
    //declaration
    void even_Odd();
```

```
void main(){

	//call
	even_Odd();
}
//defination
void even_Odd(){
	int num;
	printf("Enter the num:");
	scanf("%d",&num);

	if(num%2==0){
		printf("Even number");
	}
	else
	{
		printf("odd number");
	}
}
```

5. Calculating total salary based on basic. If basic <=5000 da, ta and hra will be 10%,20% and 25% respectively otherwise da, ta and hra will be 15%,25% and 30% respectively.

```
////function without parameters without returntype
//total salary

#include<stdio.h>
//declaration

void total_sal()

void main(){
	total_sal();
}


//defination
void total_sal(){
	float basic=3000,total;
	float da,ta,hra,a;

	if(basic<=5000){
		//printf("a is %f",a=10/100);// 10/100 it is internally is a int so int /int gives int therfore it gives o
		//da=basic*(10/100); eihter make any one float or convert into  0.1
		da=basic*0.1;
		printf("\nda is %f",da);
```

```
		ta=basic*0.2;
		printf("\nta is %f",ta);
		hra=basic*0.25;
		printf("\nhra is %f",hra);

	}
	else{
		da=basic*(15/100);
		ta=basic*(20/100);
		hra=basic*(25/100);
	}

	total=basic+da+ta+hra;
	printf("\nThe total salary is %f",total);
}
```

6. Write a program to check if person is eligible to marry or not (male age >=21 and female age>=18

```
//function without parameters without returntype
//eligible for marriage
#include<stdio.h>
void eligible();
void main(){

	eligible();
}
void eligible(){

	char gender='M';//input either 'F' or 'M'
	int age=18;

	if(gender=='F'){
		if(age>=18){
			printf("Female is eligible for Marriage");
		}
		else{
			printf("female is not eligible");
		}
	}
	else{
		if(gender=='M'){

			if(age>=21){
				printf("Male is eligible for marriage");
			}
			else{
```

```
                                        printf("Male is not eligible");
                                }
                        }
                        else{
                                printf("invaild input");
                        }
                }
        }
```

//////////////

Assignment2

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

////function without parameters without returntype

//using scanf()

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

```
#include<stdio.h>


//declaration
void discount();


void main(){
        //call
        discount();




}



//defination
void discount(){


        float price,dis;
```

```
//take the price from user
printf("Enter the price : ");

scanf("%f",&price);

float price_Ini=price;



if(price>=5000 && price<=7000){
	dis=price*0.2;
	price=price-dis;

}
else{
	if(price>=3000&&price<5000){
		dis=price*0.15;
		price=price-dis;
	}
	else{
		if(price<3000){
			dis=price*0.05;
			price=price-dis;
		}
		else{
			printf("invalid inputs");
		}
	}
}

printf("the original price is RS %f and after getting dis is RS %f ",price_Ini,price);
```

```
}
```

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

```
        ////function without parameters without returntype
//using scanf()
//greatest no. among 3
#include<stdio.h>

//declaration

void greatest();
void main(){

//call
                greatest();

}

//defination
void greatest(){
                int num1,num2,num3;

        printf("Enter num1:");
        scanf("%d",&num1);
        printf("\nEnter num2:");
        scanf("%d",&num2);
        printf("\nEnter num3 :");
        scanf("%d",&num3);



        if(num1>num2){
```

```
		if(num1>num3){
			printf("\nnum1 is greatest %d",num1);
		}
		else{
			printf("\nnum2 is greatest %d",num2);
		}
	}
	else{
		if(num2>num3){
				printf("\nnum2 is greatest %d",num2);
		}
		else{
			printf("\nnum3 is greatest %d",num3);
		}
	}


}
```

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

////function without parameters without returntype

//using scanf()//Accept two numbers from user and an operator (+,-,/,*,%) based on that perform the desiredoperations.(without using scanf)

```
#include<stdio.h>


//declaration
void sum();
void sub();
void multi();
void mod();


void main(){
```

```
char sign;


//when we use scanf with %c have to clear the buffer (\n \t enter tab space  etc)
fflush(stdin);//to clean the buffer
printf("Enter the sign:");
scanf("%c",&sign);

if(sign=='+'){
        sum();
}
else{
                if(sign=='-'){

                        sub();
                }
                else{
                        if (sign=='/'){

                                div();
                        }
                        else{
                                if(sign=='*'){

                                        multi();
                                }
                                else{
                                        if(sign=='%'){
```

```
                                                                    mod();

                                                                }
                                                                else{
                                                                    printf("Invalid
Inputs");
                                                                }
                                                            }
                                                        }
                                                    }
                                                }

}



void sum(){
    int num1,num2,res;

    printf("Enter num1 :");
    scanf("%d",&num1);

    printf("Enter num2 :");
    scanf("%d",&num2);

                res=num1+num2;

    printf("addition is %d",res);
```

```
}

void sub(){

        int num1,num2,res;

        printf("Enter num1 :");
        scanf("%d",&num1);

        printf("Enter num2 :");
        scanf("%d",&num2);

        res=num1-num2;

                printf("sub is %d",res);


}

void multi(){

        int num1,num2,res;

        printf("Enter num1 :");
        scanf("%d",&num1);

        printf("Enter num2 :");
        scanf("%d",&num2);

        res=num1*num2;
```

```
                printf("multiplication is %d",res);

}

void mod(){
        int num1,num2,res;

        printf("Enter num1 :");
        scanf("%d",&num1);

        printf("Enter num2 :");
        scanf("%d",&num2);

        res=num1%num2;

                printf("mod is %d",res);
}

void div(){
                int num1,num2,res;

        printf("Enter num1 :");
        scanf("%d",&num1);

        printf("Enter num2 :");
        scanf("%d",&num2);

        res=num1/num2;

                printf("div is %d",res);
```

```
}
```

```
////function without parameters without returntype

//using scanf

//Accept two numbers from user and an operator (+,-,/,*,%) based on that perform the desiredoperations.(without scanf)

#include<stdio.h>


//declaration

void add();

void sub();

void div();

void multi();

void mod();



void main(){

        printf("\n 1.add \n 2. sub \n 3.div \n 4.mul \n 5.mod \n\n");

        int choice;


        printf("Enter choice:");

        scanf("%d",&choice);


        if(choice==1){


                add();


        }else{

                        if(choice==2){

                                sub();

                        }

                        else{
```

```
                                        if(choice==3){
                                                div();
                                        }
                                        else{
                                                        if(choice==4){

                                                                multi();



                                                        }else{
                                                                        if(choice==5){

                                                                                mod();
                                                                        }
                                                                        else{
                                                                                printf("\nInvalid
Inputs");
                                                                        }
                                                        }
                                        }
                                }
                        }


}



//defination

void add(){
```

```
	int num1,num2,res;



	printf("Enter num1:");
	scanf("%d",&num1);

	printf("Enter num2 :");
	scanf("%d",&num2);

		res=num1+num2;
	printf("addition is %d :",res);
}

void sub(){
	int num1,num2,res;



	printf("Enter num1:");
	scanf("%d",&num1);

	printf("Enter num2 :");
	scanf("%d",&num2);

		res=num1-num2;
	printf("sub is %d :",res);
}

void multi(){
	int num1,num2,res;
	int choice;
```

```
	printf("Enter num1:");
	scanf("%d",&num1);

	printf("Enter num2 :");
	scanf("%d",&num2);

		res=num1*num2;
	printf("multipliation is %d :",res);
}

void div(){
	int num1,num2,res;

	printf("Enter num1:");
	scanf("%d",&num1);

	printf("Enter num2 :");
	scanf("%d",&num2);

		res=num1/num2;
	printf("division is %d :",res);
}

void mod(){
	int num1,num2,res;


	printf("Enter num1:");
	scanf("%d",&num1);

	printf("Enter num2 :");
```

```
    scanf("%d",&num2);


        res=num1%num2;

    printf("mod is %d :",res);

}
```

4. 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.

```
    ////function without parameters without returntype
    //using scanf
    //4. 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
    #include<stdio.h>

    //declaration
    void even_Odd();
    void basic_salary();

    void main(){

        int choice=2;
        printf("1.even odd \n 2.basic_salary");

        printf("\nEnter the choice:");
        scanf("%d",&choice);



        if(choice==1){


            even_Odd();

        }else{
            if(choice==2){

                basic_salary();
            }
            else{
                printf("\nInvalid inputs");
            }
        }
    }


    //definations
```

```
void even_Odd(){
                int num;
                printf("\nEnter the number to check even odd :");
                scanf("%d",&num);


                        if(num%2==0)
                        {
                        printf("\neven number");
                        }
                        else{
                                printf("\nodd number");
                        }
}

void basic_salary(){

        float basic_s,total;
        float da,ta,hra;


        printf("\nEnter the basic salary:");
                        scanf("%f",&basic_s);

                                if(basic_s<=5000){
                                        da=basic_s*0.1;
                                        ta=basic_s*0.2;
                                        hra=basic_s*0.25;
                                }
                                else{
                                        da=basic_s*0.15;
                                        ta=basic_s*0.20;
                                        hra=basic_s*0.25;
                                }

                                total=basic_s+da+ta+hra;
                                printf("\nThe basic salary is %f and the total is
%f",basic_s,total);
}
```

5. 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

////function without parameters without returntype

//using scanf()

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

//declaration
void billing();



void main(){

billing();



}

void billing(){
	float bill,dis;

	printf("\n 1.student \n 2. not a student");

	int user;
	printf("\nEnter the user num:");
	scanf("%d",&user);

	printf("\nEnter the bill:");
	scanf("%f",&bill);
	float bill_ini=bill;

	if(user==1){
```

```
                if(bill>500){
                        dis=bill*0.2;
                        bill=bill-dis;
                }
                else{
                        dis=bill*0.1;
                        bill=bill-dis;
                }
        }else{
                if(user==2){
                        if(bill>600){
                                dis=bill*0.15;
                                bill=bill-dis;
                        }
                        else{
                                printf("no discount");
                        }
                }
                else{
                        printf("invalid inputs");
                }
        }

        printf("\n the original bill is Rs. %f and after dis is Rs. %f",bill_ini,bill);
}
```

//////////////////assignment 3

1. Print numbes from 1 to 10.

```
//print no from 1 to 10
#include<stdio.h>

//declaration
```

```
void print_num();


                void main(){
                        print_num();//call
                }

//defination
void print_num(){
        int num;
        printf("Enter the num:");
        scanf("%d",&num);

        int i=1;

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

2. Print table for the given number.

```
//print table
#include<stdio.h>
void table();
void main(){
        table();
}
void table(){
        int num,a;
        printf("Enter the num :");
        scanf("%d",&num);
        int i=0;

        while(i<10){
                a=++i;
                printf("%d * %d = %d \n",num,a,num*a);

        }
}
```

3. Calculate sum of numbers in the given range.

```
4. //sum of the number within given range
5. #include<stdio.h>
6. //declaration
7. void sum_range();
8.
9. void main(){
10.         sum_rang();//call
11. }
```

```
12.
13. //defination
14. void sum_rang(){
15.                     int start,end;
16.         printf("Enter the start: ");
17.         scanf("%d",&start);
18.
19.         printf("Enter the end : ");
20.         scanf("%d",&end);
21.
22.         int sum=0;
23.
24.         int i=start;
25.         while(i<=end){
26.                 sum=sum+i;
27.                 i++;
28.         }
29.         printf("sum from %d to %d is %d",start,end,sum);
30. }
31.
```

5. Check number is prime or not.

```
//func without parameter without returntype
//prime number
#include<stdio.h>
//declaration
void prime();

void main(){
        prime();//call
}

//defination
void prime(){
        int num;
        printf("Enter the num :");
        scanf("%d",&num);
        int i=2;
        while(i<num){
                if(num%i!=0){
                        i++;
                }
                else{
                        break;
                }
        }

        if(i==num){
```

```
                printf("Number is prime");
        }
        else{
                printf("number is not prime");
        }
}
```

6. Check number is armstrong or not?

```
//function without parameters without returntype
//armstrong by count of digits//4 digit 1634 3digit 153

#include<stdio.h>
#include<math.h>

//declaration
void armstrong();

void main(){
//call
        armstrong();
}

//defination

void armstrong(){
        int num,rem;
        printf("Enter the num:");
        scanf("%d",&num);

        int num_O=num;
        int num_2=num;
        int sum_P=0;

        int count=0;
        while(num>0){
                num=num/10;
                count++;
        }

        while(num_2>0){
                rem=num_2%10;
                num_2=num_2/10;//dec

                //pow(base,power)

                //power=pow(rem,count);
                //by using loop // to calculate the power as per count
                                int power=1;
                                int cnt=count;
```

```
                                        while(cnt!=0){
                                                power=power*rem;
                                                cnt--;
                                        }

                        sum_P=sum_P+power;
                }



                if(num_O==sum_P)
                {
                        printf("%d is armstrong number",num_O);

                }
                else{
                        printf("%d is not an armstrong number",num_O);
                }

        }
```

7. Check number is perfect or not.

```
        //func without parameters without returns
        //perfect number
        //declaration of the func
        void perfect();
        #include<stdio.h>
        void main(){
                perfect();
        }

        void perfect(){

                int num,sum_Fac=0;
                printf("Enter the num:");
                scanf("%d",&num);

                for(int i=1;i<num;i++){
                        if(num%i==0){
                                sum_Fac=sum_Fac+i;//adding factors here
                        }
                }

                // check it is perfect number or not
                if(num==sum_Fac){
                        printf("It is a perfect number %d",num);

                }
```

```
        else{
            printf("It is not a perfect number %d",num);
        }
    }
```

8. Find factorial of number.

```
    //factorial number
    #include<stdio.h>

    //declaration

    void factorial();


    void main(){

        //call
        factorial();

    }

    //defination
    void factorial(){
        int num,fact=1;

        printf("Enter  the num:");
        scanf("%d",&num);

        int i=num;

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

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

9. Check number is strong or not.

```
    //strong number
    #include<stdio.h>
    //declaration
    void strong();

    void main(){

        strong();//call
    }
```

```
//defination

void strong(){
	int num;
	printf("Enter the num:");
	scanf("%d",&num);
	int num_O=num,rem,sum_fact=0;
	while(num>0){
		rem=num%10;
		num=num/10;//inc /dec
			//for factorial
			int fact=1;//for each iteration it must be 1 initialy
				while(rem>0){
					fact=fact*rem;
					rem--;

				}
		sum_fact=sum_fact+fact;
	}

	//check the sum of fact of each digit
	if(num_O==sum_fact){
		printf("It is strong number %d",num_O);
	}
	else{
		printf("It is not strong number %d",num_O);
	}
}
```

10. Check the given number is palindrome or not?

```
//function without parameters without returns
//palindrom num -->num==reverse of that num


//declaration
void palindrome();

	#include<stdio.h>
	void main(){

		palindrome();//call

	}


//defination

void palindrome(){
```

```
	int num;
	printf("Enter the num:");
	scanf("%d",&num);
	int num_O=num,rev=0;
	// seperate the digits
	int rem=0;

	while(num>0){
		rem=num%10;
		num=num/10;
		rev=rev*10+rem;
	}

	if(rev==num_O){
		printf("The number is palindrom %d",num_O);

	}
	else{
		printf("The number is not palindrom %d ",num_O);
	}
}
```

10.Add the (first and last) digit of a given number

```
//sum of first and last digit of the number
#include<stdio.h>
void sum_F_L();
void main(){

	sum_F_L();//call

}

void sum_F_L(){
	int num;

	printf("Enter the num");
	scanf("%d",&num);

	int O_num=num;
	int last_digit,first_digit,rem,sum=0;
	last_digit=num%10;
	printf("\nlast %d",last_digit);

	while(num>0){
		rem=num%10;
		num=num/10;
	}
	first_digit=rem;
```

```
        printf("\nfirst %d",first_digit);

        sum=first_digit+last_digit;

        printf("\nThe sum of last and first digit of the num %d is %d",O_num,sum);
}
```

//////////////assignment 4

1. Print armstrong number in the the given range 1 to n?

```
//print the armstrong number in the given range
#include<stdio.h>
void armstrong();
void main(){


        armstrong();
}


void armstrong(){
        int k,end,rem;
        printf("enter the end of the range");
        scanf("%d",&end);
        printf("armstrong numbers are : ");



        for(k=1;k<=end;k++){


                int num=k;
                int num_2=k;
                //int num=num_2=k; k==>num_2 and num_2==>num


                int count=0;
                int sum=0;
                //to check the count
                while(num>0){
```

```
                num=num/10;
                count++;
        }

        //sum of the power
                        while(num_2>0){
                                rem=num_2%10;
                                num_2=num_2/10;

                                //calculate the power
                                int power=1;
                                int cnt=count;
                                                while(cnt!=0){
power=power*rem;
                                                        cnt--;
                                                }

                                sum=sum+power;
                        }


                //check that number is equal to that sum of the power or not ?
                if(sum==k){
                                printf(" %d\t",k);
                        }

        }

}
```

2. Print prime number in the given range 1 to n?

```
//range prime
void prime();
#include<stdio.h>
void main(){
    void prime();
}

void prime(){
        int k,end;
    printf("enter the end of the range :");
    scanf("%d",&end);

    for(k=1;k<=end;k++){
        int num=k;
        //check for each k the number is prime or not
        int i=2;//start mod from 2 check up to 1 no before that number
                while(i<num){
                    //check num is completely divisible or not
                    if(num%i!=0){
                        i++;
                    }
                    else{
                        break;
                    }
                }

            if(i==num){
                printf("%d\t",k);
            }



    }
}
```

3. check perfect number in the given range 1 to n?

```
//perfect number
#include<stdio.h>
void main(){
    int k;
    int end;
    printf("Enter the end:");
    scanf("%d",&end);

    for(k=1;k<=end;k++){
            int num=k;
            int sum=0;
```

```
                    for(int i=1;i<num;i++){
                        if(num%i==0){
                            sum=sum+i;
                        }
                    }

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

    }
```

4. check strong number in the given range 1 to n?

```
//strong numbers
#include<stdio.h>

void strong();
void main(){
        void strong();
}
void strong(){
        int k,end,rem;
        printf("Enter the end of the range:");
        scanf("%d",&end);

        printf("strong numbers are: ");

        for(k=1;k<=end;k++){
                int num=k;

                int sum_F=0;

                while(num>0){


                        rem=num%10;
                        num=num/10;
                                //calculate the fact of each digits
                                int fact=1;
                                while(rem>0){
                                        fact=fact*rem;
                                        rem--;
                                }

                                //sum of the fact of each digits
                                sum_F=sum_F+fact;
```

```
                }

                //equalate sum with original number
                if(k==sum_F){
                        printf("%d\t",k);
                }
        }
}
```

5. Print fibonacci series?(optional

```
//func without parameters without returntype
//fibonacci series
#include<stdio.h>
void fibonacci();
void main(){
    fibonacci();
}
void fibonacci(){
    int prefib1=0,prefib2=0,fib=0,end;

    printf("Enter the range 0 to :");
    scanf("%d",&end);
    //solution to handle the infinity condition  1 1 1 1 -->(if)
    if(prefib1==0 && prefib2==0){
                    fib=prefib2+prefib1;
                    printf("%d \t",fib);
                    prefib1++;
                    fib=prefib2+prefib1;
                    printf("%d\t",fib);
    }

    while(fib<=end)
    {
                    prefib1=prefib2;
                    prefib2=fib;
                    fib=prefib2+prefib1;
                    if(fib<=end){
                            printf("%d\t",fib);
                    }
    }

}
```

Type 2

assignment 1

1. Finding F from C (temp).

```
#include<stdio.h>
float f_from_c();
void main(){
	float f=f_from_c();
	printf("F is %f",f);
}
float f_from_c(){
	float C=12.3;
	float F;

	F=((C*9)/5)+32;
	//printf("F is %d",F);
	return F;
}
```

2. Finding area and perimeter of rectangle or circle.

```
//find area of rectangle and circle
#include<stdio.h>
void main(){

	float a_cir=area_C();
	float a_rec=area_R();
	float peri_cir=perimeter_C();
	float peri_rec=perimeter_R();

	printf("\narea of rectangle is %f",a_rec);
	printf("\narea of circle is %f",a_cir);

	printf("\nperimeter of rectangle is %f",peri_cir);
	printf("\nperimeter of circle is %f",peri_rec);
}

float area_C(){
	float radius=3.5,pie=3.14,area_C;
	area_C=pie*radius*radius;
	return area_C;
}

float area_R(){
	float length=12.3,breadth=10,area_R;
	area_R=length*breadth;
	return area_R;

}

float perimeter_R(){
	float length=12.3,breadth=10,perimeter_R;
	perimeter_R=2*(length+breadth);
```

```
        return   perimeter_R;

}

float perimeter_C(){
        float length=12.3,breadth=10,perimeter_C;
        perimeter_C=2*pie*radius;
        return perimeter_C;
}
```

3. Accept a 3 digit number from user and find the sum of the digits and also reverse the number

```
        //accept 3 digit num ,sum the digits and reverse

        #include<stdio.h>

        int sum_digits();
        int rev_digit();

        void main(){

                int sum=sum_digits();
                printf("\nThe sum of the digit is %d ",sum);
                int rev=rev_digit();
                printf("\nThe reverse of the number is %d",rev);


        }

        int sum_digits(){
                int num=123;

                int rem,sum=0;

                while(num>0){

                rem=num%10;
                num=num/10;
                sum=sum+rem;
                }

                return sum;
        }

        int rev_digit(){

                int num=121;
```

```
        int rem,rev=0;

        while(num>0){

        rem=num%10;
        num=num/10;
        rev=(rev*10)+rem;

        }

        return rev;
    }
```

4. Check if the given number is even or odd.

```
//check even and odd
#include<stdio.h>
void main(){
    int num=5;

    if(num%2==0){
        printf("Even number");
    }
    else
    {
        printf("odd number");
    }
}
```

5. Calculating total salary based on basic. If basic <=5000 da, ta and hra will be 10%,20% and 25% respectively otherwise da, ta and hra will be 15%,25% and 30% respectively

```
//total salary

#include<stdio.h>
float basic_s();
void main(){
    float total=basic_s();
    printf("\nThe total salary is %f",total);
}

float basic_s(){
    float basic=3000,total;
    float da,ta,hra,a;

    if(basic<=5000){
        //printf("a is %f",a=10/100);// 10/100 it is internally is a int so int /int gives int therfore it gives o
```

```
		//da=basic*(10/100); eihter make any one float or convert into  0.1
		da=basic*0.1;
		//printf("\nda is %f",da);
		ta=basic*0.2;
		//printf("\nta is %f",ta);
		hra=basic*0.25;
		//printf("\nhra is %f",hra);

	}
	else{
		da=basic*(15/100);
		ta=basic*(20/100);
		hra=basic*(25/100);
	}

	total=basic+da+ta+hra;
	return total;
}
```

. 6. Write a program to check if person is eligible to marry or not (male age >=21 and female age>=18)

```
//eligible for marriage
#include<stdio.h>
int eligible();
void main(){

	int res=eligible();
	if(res==1){
		printf("Eligible");
	}
	else{
		if(res==0){
			printf("Not eligible");
		}
		else{
		if(res== -1)
		printf("Invalid Inputs");
	}
	}

}
int eligible(){
	char gender;//input either 'F' or 'M'
	fflush(stdin);
	printf("M=male\n F=female\n");
	printf("Enter gender :");
	scanf("%c",&gender);
```

```
        int age;

        if(gender=='F'){
                printf("Enter the age:");
                scanf("%d",&age);

                if(age>=18){
                        return 1;
                }
                else{
                        return 0;
                }
        }
        else{
                if(gender=='M'){

                printf("Enter the age:");
                scanf("%d",&age);

                        if(age>=21){
                                return 1;
                        }
                        else{
                                return 0;
                        }
                }
                else{
                        return -1;
                }
        }
}
```

Assignment2

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

```
//using scanf()
//Find the price of item when discount is given (specify different discount based on price)
#include<stdio.h>
float discount();
void main(){

        float price=discount();
        if(price!= -1){
```

```
		printf("Discount is %f",price);
	}
	else{
		printf("Invalid Inputs");
	}
}
float discount(){
	float price,dis;

	//take the price from user
	printf("Enter the price : ");
	scanf("%f",&price);

	if(price>=5000 && price<=7000){
		dis=price*0.2;
		price=price-dis;
	}
	else{
		if(price>=3000&&price<5000){
			dis=price*0.15;
			price=price-dis;
			return price;
		}
		else{
			if(price<3000){
				dis=price*0.05;
				price=price-dis;
				return price;
			}
			else{
				return -1;
```

```
                }
            }
        }

}
```

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

```
//using scanf()
//greatest no. among 3
#include<stdio.h>
int greatest();
void main(){

    int res=greatest();
    printf("Greatest number is %d",res);
}

int greatest(){
    int num1,num2,num3;

    printf("Enter num1:");
    scanf("%d",&num1);
    printf("\nEnter num2:");
    scanf("%d",&num2);
    printf("\nEnter num3 :");
    scanf("%d",&num3);


    if(num1>num2){
        if(num1>num3){
            return num1;
        }
```

```
		else{
			return num3;
		}
	}
	else{
		if(num2>num3){
				return num2;
		}
		else{
			return num3;
		}
	}

}
```

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

//using scanf()//Accept two numbers from user and an operator (+,-,/,*,%) based on that perform the desiredoperations.(without using scanf)

```
#include<stdio.h>


//func declaratoins
int add();
int sub();
int mul();
int div();
int mod();
char optor();



//main
void main(){
```

```
	char sign=optor();
	int res;

	if(sign=='+'){
		res=add();//call
		printf("Additon is %d",res);
	}
	else{
			if(sign=='-'){
				res=sub();//call
				printf("Substraction is %d",res);
			}
			else{
				if (sign=='*'){
					res=mul();//call
					printf("Multiplication is %d",res);
				}
				else{
					if(sign=='/'){
						res=div();//call
						printf(" Division is %d",res);
					}
					else{
						if(sign=='%'){
							res=mod();//call
							printf(" mod is
%d",res);
						}
						else{

							printf("Invalid
Inputs");
```

```
                                                                    }
                                                                }
                                                            }
                                                        }
                                                    }


}

//function defination

char optor(){
        char sgn;

        //when we use scanf with %c have to clear the buffer (\n \t enter tab space  etc)
        fflush(stdin);//to clean the buffer
        printf("Enter the sign:");
        scanf("%c",&sgn);

        return sgn;
}

int add(){
        int num1,num2,res;

        printf("Enter num1 :");
        scanf("%d",&num1);

        printf("Enter num2 :");
        scanf("%d",&num2);
```

```
	res=num1+num2;
	return res;
}

int sub(){
	int num1,num2,res;

	printf("Enter num1 :");
	scanf("%d",&num1);

	printf("Enter num2 :");
	scanf("%d",&num2);

	res=num1-num2;
	return res;
}

int mul(){
	int num1,num2,res;

	printf("Enter num1 :");
	scanf("%d",&num1);

	printf("Enter num2 :");
	scanf("%d",&num2);

	res=num1*num2;
	return res;
}

int div(){
```

```
	int num1,num2,res;

	printf("Enter num1 :");
	scanf("%d",&num1);

	printf("Enter num2 :");
	scanf("%d",&num2);

	res=num1/num2;
	return res;
}

int mod(){
	int num1,num2,res;

	printf("Enter num1 :");
	scanf("%d",&num1);

	printf("Enter num2 :");
	scanf("%d",&num2);

	res=num1%num2;
	return res;
}
```

//using scanf

//Accept two numbers from user and an operator (+,-,/,*,%) based on that perform the desiredoperations.(without scanf)

```
//function declaration
int add();
```

```
int sub();
int mul();
int div();
int mod();
int optor();

#include<stdio.h>
void main(){
	printf("\n 1.add \n 2. sub \n 3.div \n 4.mul \n 5.mod \n\n");

	int choice=optor();
	int res;

	if(choice==1){
		int res=add();
		printf("addition is %d",res);
	}else{
			if(choice==2){
				int res=sub();
				printf("Substraction is %d",res);
			}
			else{
					if(choice==3){
						int res=mul();
						printf("multiplication is %d",res);
					}
					else{
							if(choice==4){
								int res=div();
								printf("Division is %d",res);
							}else{
```

```
                                                                    if(choice==5){
                                                                            int res=mod();
                                                                            printf("mod is
%d",res);
                                                                    }
                                                                    else{
                                                                            printf("\nInvalid
Inputs");
                                                                    }
                                                            }
                                                    }
                                            }
                                    }

}

//function defination

int optor(){
        int choice;
        printf("Enter choice:");
        scanf("%d",&choice);
        return choice;
}

int add(){
        int num1,num2,res;

        printf("Enter num1 :");
        scanf("%d",&num1);
```

```
	printf("Enter num2 :");
	scanf("%d",&num2);

	res=num1+num2;
	return res;
}

int sub(){
	int num1,num2,res;

	printf("Enter num1 :");
	scanf("%d",&num1);

	printf("Enter num2 :");
	scanf("%d",&num2);

	res=num1-num2;
	return res;
}

int mul(){
	int num1,num2,res;

	printf("Enter num1 :");
	scanf("%d",&num1);

	printf("Enter num2 :");
	scanf("%d",&num2);

	res=num1*num2;
	return res;
```

```
}

int div(){
        int num1,num2,res;

        printf("Enter num1 :");
        scanf("%d",&num1);

        printf("Enter num2 :");
        scanf("%d",&num2);

        res=num1/num2;
        return res;
}

int mod(){
        int num1,num2,res;

        printf("Enter num1 :");
        scanf("%d",&num1);

        printf("Enter num2 :");
        scanf("%d",&num2);

        res=num1%num2;
        return res;
}
```

4. 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.

```
//using scanf
```

//4. 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

```
#include<stdio.h>

int ch();

int even_odd();

float basic_s();


void main(){



	printf("1.even odd \n 2.basic_salary");

	int choice=ch();



	if(choice==1){

			int res=even_odd();

			if(res=0)

				printf("even number");

			else

				printf("odd number");


	}else{

		if(choice==2){

			float res=basic_s();


			printf("total salary is %f",res);

		}

		else{

			printf("\nInvalid inputs");

		}

	}
```

```
}

//function defination

int ch(){
	int choice;
	printf("\nEnter the choice:");
	scanf("%d",&choice);
	return choice;

}
int even_odd(){
		int num;
	printf("\nEnter the number to check even odd :");
	scanf("%d",&num);


		if(num%2==0)
		{
			return 1;
		}
		else{
			return 0;
		}

}

float basic_s()
{
```

```
float basic_s,total;
float da,ta,hra;

printf("\nEnter the basic salary:");
        scanf("%f",&basic_s);

            if(basic_s<=5000){
                da=basic_s*0.1;
                ta=basic_s*0.2;
                hra=basic_s*0.25;
            }
            else{
                da=basic_s*0.15;
                ta=basic_s*0.20;
                hra=basic_s*0.25;
            }

            total=basic_s+da+ta+hra;
            return total;
}
```

5. 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

```
//using scanf()
/*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*/
#include<stdio.h>
float billing();

void main(){

    float res=billing();
```

```
    if(res==0){
            printf("No discount");
    }else{
            if(res==-1){
                    printf("Invalid input");
            }else{
                    printf("The total bill is %f",res);
            }
    }

}

float billing(){
    float bill,dis;

    printf("\n 1.student \n 2. not a student");

    int user;
    printf("\nEnter the user num:");
    scanf("%d",&user);



    if(user==1){
    printf("\nEnter the bill:");
    scanf("%f",&bill);
    float bill_ini=bill;

                    if(bill>500){
                            dis=bill*0.2;
                            bill=bill-dis;
                            return bill;
                    }
                    else{
                            dis=bill*0.1;
                            bill=bill-dis;
                            return bill;
                    }
    }else{
                    if(user==2){
                    printf("\nEnter the bill:");
                    scanf("%f",&bill);
                    float bill_ini=bill;

                                    if(bill>600){
                                            dis=bill*0.15;
                                            bill=bill-dis;
                                            return bill;
```

```
                                        }
                                        else{
                                                return 0;//no discount
                                        }
                                }
                                else{
                                        return -1;//invalid input
                                }
                        }
                }
```

Assignment 3

3. Calculate sum of numbers in the given range.

```
//sum of the number within given range
#include<stdio.h>
int sum_range();//declaration

void main(){
        int sum=sum_range();//call;
        printf("Sum is %d",sum);
}

int sum_range(){
        int start=5,end=10;
        int sum=0;

        int i=start;
        while(i<=end){
                sum=sum+i;
                i++;
        }

        return sum;
}
```

5. Check number is prime or not.

```
//prime number
#include<stdio.h>
int prime();//declaration

void main(){
	int res=prime();//call
	if(res!=-1){
		printf("%d is prime",res);
	}
	else{
		printf("no is not prime");
	}
}


//defination

int prime(){
	int num=5;
	int i=2;
	while(i<num){
		if(num%i!=0){
			i++;
		}
		else{
			break;
		}
	}

	if(i==num){
		return num;
	}
	else{
		return -1;
	}
}
```

5. Check number is armstro//armstrong number

```
#include<stdio.h>

int arm();

void main(){


	int res=arm();
```

```
	if(res)
	printf("armstrong");
	else
	printf("not armstrong");




}

int arm(){
		int num=153,sum_cube=0,rem;
	int O_num=num;
	while(num>0){
		rem=num%10;//3//5//1
		//printf("%d rem",rem);
		num=num/10;//15//1//0
		//printf("%d num",num);
		sum_cube=sum_cube+(rem*rem*rem);//0+27//27+125=152//152+1//153
		//printf("%d sum_cube",sum_cube);
	}

	if(sum_cube==O_num){
		return 1;
	}
	else{
		return 0;
	}
}ng or not?
```

6.Check number is perfect or not.

```
//perfect number
#include<stdio.h>
int perfect();//declaration



void main(){
	int res=perfect();//call
	if(res!=-1){
		printf("%d is perfect",res);
	}
	else{
		printf("not perfect");
	}
}

//function defination
int perfect(){
	int num=6,sum_F=0;

	for(int i=1;i<num;i++){
		if(num%i==0){
			sum_F=sum_F+i;//adding factors here
		}
	}

	// check it is perfect number or not
	if(num==sum_F){
		return num;

	}
	else{
```

```
                return -1;
        }
}
```

7.Find factorial of number.

```
//factorial number
#include<stdio.h>
int fact();//declaration

void main(){
        int fct=fact();//call
        printf("The factorial is %d",fct);

}
//defination
int fact(){
        int num=5,fact=1;
        int i=num;

        while(i>0){
                fact=fact*i;
                //printf("\n fact is %d and i is %d",fact,i);
                i--;
        }

        return fact;
}
```

8. Check number is strong or not.

```
//strong number
#include<stdio.h>
```

```
//declaration
int strong();



void main(){



	int res=strong();//call


	if(res){
		printf("It is strong number");
	}
	else{
		printf("It is not strong number");
	}




}

int strong(){

	int num=145;
	int num_O=num,rem,sum_fact=0;
	while(num>0){
		rem=num%10;
		num=num/10;//inc /dec
			//for factorial
			int fact=1;//for each iteration it must be 1 initialy
				while(rem>0){
```

```
                                        fact=fact*rem;
                                        rem--;

                                }
                sum_fact=sum_fact+fact;
        }

        //check the sum of fact of each digit
        if(num_O==sum_fact){
                return 1;
        }
        else{
                return 0;
        }

        //printf("after returns");


}
```

9. Check the given number is palindrome or not?

```
//palindrom num -->num==reverse of that num
#include<stdio.h>
int palindrome();//declaration

void main(){
        int res=palindrome();//call
        if(res!=-1)
                printf(" %d Number is Palindrome ",res);
        else
                printf("not palindrome");
}
```

```
//function defination
int palindrome(){
	int num=121;
	int num_O=num,rev=0;
	// seperate the digits
	int rem=0;

	while(num>0){
		rem=num%10;
		num=num/10;
		rev=rev*10+rem;
	}

	if(rev==num_O){
		return num_O;

	}
	else{
		return -1;
	}
}
```

10.Add the (first and last) digit of a given number

```
//sum of first and last digit of the number
#include<stdio.h>
int first_ls();//declaration

void main(){

	int res=first_ls();//call
```

```
	printf("The sum is %d",res);


}


int first_ls(){
	int num=143;
	int O_num=num;
	int last_digit,first_digit,rem,sum=0;
	last_digit=num%10;
	//printf("\nlast %d",last_digit);


	while(num>0){
		rem=num%10;
		num=num/10;
	}
	first_digit=rem;
	//printf("\nfirst %d",first_digit);


	sum=first_digit+last_digit;
	return sum;
}
```

//

Type3

Assignment1

1. Finding F from C (temp).

```
#include<stdio.h>
void f(float);
void main(){
	float C=12.3;
	f(C);
}

void f(float c){
	float F;
```

```
        F=(c*9/5)+32;
        printf(" c is %f and its F is %f",c,F);
    }
```

2. Finding area and perimeter of rectangle or circle.

```
//find area of rectangle and circle
#include<stdio.h>
void circle_area(float);
void rec_area(float,float);
void rec_perimeter(float,float);
void cir_perimeter(float);

void main(){
    float length=12.3,breadth=10;
    float radius=3.5;

    circle_area(radius);//call
    rec_area(length,breadth);
    rec_perimeter(length,breadth);
    cir_perimeter(radius);

}

//function defination

void circle_area(float radius){
    float pie=3.14;
    float area_C=pie*radius*radius;
    printf("\narea of circle is %f",area_C);

}
```

```
void rec_area(float length,float breadth){
    float area_R=length*breadth;
    printf("\narea of rectangle is %f",area_R);
}

void rec_perimeter(float length,float breadth){
    float perimeter_R=2*(length+breadth);
    printf("\nperimeter of rectangle is %f",perimeter_R);

}

void cir_perimeter(float radius){
    float pie=3.14;
    float perimeter_C=2*pie*radius;
    printf("\nperimeter of circle is %f",perimeter_C);

}
```

3. Accept a 3 digit number from user and find the sum of the digits and also reverse the number

```
//accept 3 digit num ,sum the digits and reverse

#include<stdio.h>
void sum_D(int);
void rev_D(num);


void main(){
        int num=11;
        sum_D(num);
        rev_D(num);

}

//functions definations
```

```
void sum_D(int num){
        int sum=0,rem;
        while(num>0){
                rem=num%10;
                num=num/10;
                sum=sum+rem;
        }
        printf("\nThe sum of the digit is %d ",sum);
}

void rev_D(int num){
        int rev=0,rem;
        while(num>0){
                rem=num%10;
                num=num/10;
                rev=(rev*10)+rem;
        }
                printf("\nThe reverse of the number is %d",rev);

}
```

4. Check if the given number is even or odd.

```
//check even and odd
#include<stdio.h>
void even_odd(int);//declaration

void main(){
        int num;
        printf("Enter the num:");
        scanf("%d",&num);
        even_odd(num);//call



}

//func defination
void even_odd(int num){
        if(num%2==0){
                printf("Even number");
        }
        else
        {
                printf("odd number");
        }
}
```

5. Calculating total salary based on basic. If basic <=5000 da, ta and hra will be 10%,20% and 25% respectively otherwise da, ta and hra will be 15%,25% and 30% respectively.

```
//total salary
void salary(float);
```

```
#include<stdio.h>
void main(){
	float basic=3000;
	salary(basic);
}

//function defination

void salary(float basic){
	float total;
	float da,ta,hra,a;

	if(basic<=5000){
		//printf("a is %f",a=10/100);// 10/100 it is internally is a int so int /int gives
int therfore it gives o
		//da=basic*(10/100); eihter make any one float or convert into  0.1
		da=basic*0.1;
		printf("\nda is %f",da);
		ta=basic*0.2;
		printf("\nta is %f",ta);
		hra=basic*0.25;
		printf("\nhra is %f",hra);

	}
	else{
		da=basic*(15/100);
		ta=basic*(20/100);
		hra=basic*(25/100);
	}

	total=basic+da+ta+hra;
	printf("\nThe total salary is %f",total);
}
```

6. Write a program to check if person is eligible to marry or not (male age >=21 and female age>=18

```
//eligible for marriage

#include<stdio.h>

void eligibility(char);

void main(){



	char gender;//input either 'F' or 'M'

	printf("Enter the Gender:");
```

```
	scanf("%c",&gender);
	eligibility(gender);




}

void eligibility(char g){
	int age;

	if(g=='F'){

		printf("Enter age:");
		scanf("%d",&age);

		if(age>=18){
			printf("Female is eligible for Marriage");
		}
		else{
			printf("female is not eligible");
		}
	}
	else{
		if(g=='M'){

		printf("Enter age:");
		scanf("%d",&age);

			if(age>=21){
				printf("Male is eligible for marriage");
			}
```

```
                else{
                        printf("Male is not eligible");
                }
        }
        else{
                printf("invaild input");
        }
    }
}
```

////////////////////////////////

Assignment2

1. Find the price of item when discount is given (specify different discount based on price)
   //using scanf()
   //Find the price of item when discount is given (specify different discount based on price)

```
#include<stdio.h>
void discount(float);
void main(){
        float price;
        printf("Enter the price : ");
        scanf("%f",&price);

        discount(price);

}
void discount(float price){
        float dis;

        //take the price from user

        float price_Ini=price;



        if(price>=5000 && price<=7000){
                dis=price*0.2;
                price=price-dis;
        }
        else{
                if(price>=3000&&price<5000){
                        dis=price*0.15;
                        price=price-dis;
                }
```

```
                else{
                        if(price<3000){
                                dis=price*0.05;
                                price=price-dis;
                        }
                        else{
                                printf("invalid inputs");
                        }
                }
        }

        printf("the original price is RS %f and after getting dis is RS %f ",price_Ini,price);
}
```

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

```
//using scanf()
//greatest no. among 3
#include<stdio.h>
void gret(int,int,int);

void main(){

        int num1,num2,num3;

        printf("Enter num1:");
        scanf("%d",&num1);
        printf("\nEnter num2:");
        scanf("%d",&num2);
        printf("\nEnter num3 :");
        scanf("%d",&num3);

        gret(num1,num2,num3);//call


}

void gret(int num1,int num2,int num3){

        if(num1>num2){
                if(num1>num3){
                        printf("\nnum1 is greatest %d",num1);
                }
                else{
                        printf("\nnum3 is greatest %d",num3);
                }
        }
        else{
                if(num2>num3){
                        printf("\nnum2 is greatest %d",num2);
```

```
		}
		else{
			printf("\nnum3 is greatest %d",num3);
		}
	}
}
```

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

```
//using scanf()//Accept two numbers from user and an operator (+,-,/,*,%) based on that perform the desiredoperations.(without using scanf)
#include<stdio.h>
void add(int,int);
void sub(int,int);
void div(int,int);
void mul(int,int);
void mod(int,int);
void choice(char);

void main(){
	char sign;

	//when we use scanf with %c have to clear the buffer (\n \t enter tab space  etc)
	fflush(stdin);//to clean the buffer
	printf("Enter the sign:");
	scanf("%c",&sign);

	choice(sign);

}

//func defination

void choice(char sign){




	if(sign=='+'){
			int num1,num2;

	printf("Enter num1 :");
	scanf("%d",&num1);

	printf("Enter num2 :");
	scanf("%d",&num2);

			add(num1,num2);
	}
```

```
	else{
			if(sign=='-'){
				int num1,num2;

				printf("Enter num1 :");
				scanf("%d",&num1);

				printf("Enter num2 :");
				scanf("%d",&num2);

				sub(num1,num2);
			}
			else{
					if (sign=='/'){

							int num1,num2;

							printf("Enter num1 :");
							scanf("%d",&num1);

							printf("Enter num2 :");
							scanf("%d",&num2);

						div(num1,num2);
					}
					else{
							if(sign=='*'){
									int num1,num2;

									printf("Enter num1
:");

	scanf("%d",&num1);

									printf("Enter num2
:");

	scanf("%d",&num2);
										mul(num1,num2);
							}
							else{
									if(sign=='%'){
										int
num1,num2;


	printf("Enter num1 :");
```

```
        scanf("%d",&num1);


        printf("Enter num2 :");

        scanf("%d",&num2);


        mod(num1,num2);
                                                                    }
                                                                    else{

        printf("Invalid Inputs");
                                                                    }
                                                            }
                                                    }
                                    }
                    }
}
void add(int num1,int num2){
        int res=num1+num2;
        printf("Addition is %d",res);
}

void sub(int num1,int num2){
        int res=num1-num2;
        printf("substraction is %d",res);
}

void div(int num1,int num2){
        int res=num1/num2;
        printf("division is %d",res);
}

void mul(int num1,int num2){
        int res=num1*num2;
        printf("multiplication is %d",res);
}

void mod(int num1,int num2){
        int res=num1%num2;
        printf("modulation is %d",res);
}
```

//using scanf
//Accept two numbers from user and an operator (+,-,/,*,%) based on that perform the desiredoperations.(without scanf)

```
#include<stdio.h>
void opt(int);
void add(int,int);
void sub(int,int);
void mul(int,int);
void div(int,int);
void mod(int,int);


void main(){
	printf("\n 1.add \n 2. sub \n 3.div \n 4.mul \n 5.mod \n\n");

	int choice;
	printf("Enter choice:");
	scanf("%d",&choice);
	opt(choice);


}

//function defination

void opt(int choice){

	if(choice==1){

				int num1,num2;
				printf("Enter num1:");
				scanf("%d",&num1);

				printf("Enter num2:");
				scanf("%d",&num2);

				add(num1,num2);

	}else{
				if(choice==2){
					int num1,num2;
					printf("Enter num1:");
					scanf("%d",&num1);

					printf("Enter num2:");
					scanf("%d",&num2);

					sub(num1,num2);
				}
				else{
						if(choice==3){
```

```
                int num1,num2;
                printf("Enter num1:");
                scanf("%d",&num1);

                printf("Enter num2:");
                scanf("%d",&num2);

                mul(num1,num2);

        }
        else{
                if(choice==4){

                        int num1,num2;
                        printf("Enter num1:");
                        scanf("%d",&num1);

                        printf("Enter num2:");
                        scanf("%d",&num2);

                        div(num1,num2);


                }else{
                        if(choice==5){


                                int
num1,num2;

        printf("Enter num1:");

        scanf("%d",&num1);


        printf("Enter num2:");

        scanf("%d",&num2);


        mod(num1,num2);
                                }
                                else{

        printf("\nInvalid Inputs");
                                }
                }
```

```
                                        }
                                }
                        }
}



void add(int num1,int num2){
                        int res=num1+num2;
                        printf("Addition is %d",res);
}


void sub(int num1,int num2){
                        int res=num1-num2;
                        printf("substraction is %d",res);
}


void mul(int num1,int num2){
                        int res=num1*num2;
                        printf("multiplication is %d",res);
}


void div(int num1,int num2){
                        int res=num1/num2;
                        printf("Division is %d",res);
}


void mod(int num1,int num2){
                        int res=num1%num2;
                        printf(" mod is %d",res);
}
```

4. 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.

```
//using scanf
//4. 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
#include<stdio.h>

void even_Odd(int);
void salary(float);
void menu(int);
```

```
void main(){
	int choice=2;
	printf("1.even odd \n 2.basic_salary");

	printf("\nEnter the choice:");
	scanf("%d",&choice);
	menu(choice);
}


//function defination

void menu(int choice){



	if(choice==1){

				int num;
				printf("\nEnter the number to check even odd :");
				scanf("%d",&num);
				even_Odd(num);

	}else{
		if(choice==2){
			float basic_s;
			printf("\nEnter the basic salary:");
			scanf("%f",&basic_s);
			salary(basic_s);

	}else{
		printf("choice is invalid");
	}
}

}
 void even_Odd(int num){



				if(num%2==0)
				{
				printf("\neven number");
				}
				else{
					printf("\nodd number");
				}
 }
```

```
void salary(float basic_s){

                    float da,ta,hra,total;

                    if(basic_s<=5000){
                                        da=basic_s*0.1;
                                        ta=basic_s*0.2;
                                        hra=basic_s*0.25;
                    }
                    else{
                                        da=basic_s*0.15;
                                        ta=basic_s*0.20;
                                        hra=basic_s*0.25;
                        }

                                        total=basic_s+da+ta+hra;
                                        printf("\nThe basic salary is %f and the total
is %f",basic_s,total);

}
```

5. 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

```
//using scanf()
/*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*/
#include<stdio.h>
void billing(int);

void main(){

        printf("\n 1.student \n 2. not a student");

        int user;
        printf("\nEnter the user num:");
        scanf("%d",&user);

        billing(user);
```

```
}

//defination
void billing(int user){

	float bill,dis;
	printf("\nEnter the bill:");
	scanf("%f",&bill);
	float bill_ini=bill;

	if(user==1){
			if(bill>500){
				dis=bill*0.2;
				bill=bill-dis;

			}
			else{
				dis=bill*0.1;
				bill=bill-dis;

			}
	}else{
			if(user==2){
					if(bill>600){
						dis=bill*0.15;
						bill=bill-dis;

					}
					else{
						printf("no discount\n");
					}
			}
			else{
				printf("invalid inputs\n");
			}
	}


	printf("bill is %f",bill);

}
```

Assignment3

1. Print numbes from 1 to 10.

```
//print table
#include<stdio.h>
void table(int);//declaration
```

```
void main(){
	int num;
	printf("Enter the number:");
	scanf("%d",&num);
	//func call
	table(num);
}

//defination
void table(int num){
	int a;
	int i=0;

	while(i<10){
		a=++i;
		printf("%d * %d = %d \n",num,a,num*a);

	}
}
```

2. Print table for the given number.

```
//print table
#include<stdio.h>
void table(int);//declaration

void main(){
	int num;
	printf("Enter the number:");
	scanf("%d",&num);
	//func call
	table(num);
}

//defination
void table(int num){
	int a;
	int i=0;

	while(i<10){
		a=++i;
		printf("%d * %d = %d \n",num,a,num*a);

	}
}
```

3. Calculate sum of numbers in the given range.

```
//sum of the number within given range
#include<stdio.h>
```

```
void sum_range(int,int);//declaration

void main(){
    int s=5,e=10;
    sum_range(s,e);//call;
    printf("Sum is %d",sum);
}

void sum_range(int start,int end){

    int sum=0;

    int i=start;
    while(i<=end){
            sum=sum+i;
            i++;
    }

    return sum;
}
```

4. Check number is prime or not.

```
//prime number
#include<stdio.h>
void prime(int);
void main(){
    int num;
    printf("Enter the number:");
    scanf("%d",&num);
    //call
    prime(num);
}
void prime(int num){

    int i=2;
    while(i<num){
            if(num%i!=0){
                    i++;
            }
            else{
                    break;
            }
    }

    if(i==num){
            printf("Number is prime");
    }
```

```
    else{
        printf("number is not prime");
    }
}
```

5. Check number is armstrong or not?

```
//armstrong by count of digits//4 digit 1634 3digit 153
#include<stdio.h>
#include<math.h>
void arms(int);

void main(){

    int num;
    printf("Enter the num:");
    scanf("%d",&num);
    arms(num);

}

void arms(int num){

    int rem;
    int num_O=num;
    int num_2=num;
    int sum_P=0;

    int count=0;
    while(num>0){
        num=num/10;
        count++;
    }

    while(num_2>0){
        rem=num_2%10;
        num_2=num_2/10;//dec

        //pow(base,power)

        //power=pow(rem,count);
        //by using loop // to calculate the power as per count
                int power=1;
                int cnt=count;

                    while(cnt!=0){
                        power=power*rem;
                        cnt--;
                    }
```

```
            sum_P=sum_P+power;
        }



        if(num_O==sum_P)
        {
            printf("%d is armstrong number",num_O);

        }
        else{
            printf("%d is not an armstrong number",num_O);
        }

    }
```

6. Check number is perfect or not.

```
    //perfect number
    #include<stdio.h>
    void perfect(int);//declaration

    void main(){
        int num;
        printf("Enter the number:");
        scanf("%d",&num);
        perfect(num);//calling
    }
    //defination
    void perfect(int num){
        int sum_F=0;

        for(int i=1;i<num;i++){
            if(num%i==0){
                sum_F=sum_F+i;//adding factors here
            }
        }

        // check it is perfect number or not
        if(num==sum_F){
            printf("It is a perfect number %d",num);

        }
        else{
            printf("It is not a perfect number %d",num);
        }
    }
```

7Find factorial of number.

```
//factorial number
#include<stdio.h>
void fac(int);
//declaration
void main(){
        int num;
        printf("Enter the number:");
        scanf("%d",&num);
        fac(num);
}

//defination
void fac(int num){
        int fact=1;
        int i=num;

        while(i>0){
                fact=fact*i;
                //printf("\n fact is %d and i is %d",fact,i);
                i--;
        }

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

}
```

8.Check number is strong or not.

```
//strong number
#include<stdio.h>

//declaration
void strong(int);
```

```
void main(){

    int num;
    printf("Enter the number:");
    scanf("%d",&num);
    strong(num);
}

//defination

void strong(int num){

    int num_O=num,rem,sum_fact=0;
    while(num>0){
        rem=num%10;
        num=num/10;//inc /dec
            //for factorial
            int fact=1;//for each iteration it must be 1 initialy
                while(rem>0){
                    fact=fact*rem;
                    rem--;

                }
        sum_fact=sum_fact+fact;
    }

    //check the sum of fact of each digit
    if(num_O==sum_fact){
            printf("It is strong number");
    }
    else{
            printf("It is not strong number");
    }




}
```

9Check the given number is palindrome or not?

```
//palindrom num -->num==reverse of that num
#include<stdio.h>
//declaration
void palindrome(int);
void main(){
```

```
        int num;
        printf("Enter the number :");
        scanf("%d",&num);
        //call
        palindrome(num);

    }

    //defination
    void palindrome(int num){

        int num_O=num,rev=0;
        // seperate the digits
        int rem=0;

        while(num>0){
                rem=num%10;
                num=num/10;
                rev=rev*10+rem;
        }

        if(rev==num_O){
                printf("The number is palindrom %d",num_O);

        }
        else{
                printf("The number is not palindrom %d ",num_O);
        }
    }
```

10.Add the (first and last) digit of a given number

```
//sum of first and last digit of the number
#include<stdio.h>
void f_L(int);//declaration
void main(){
        int num;
        printf("Enter the number :");
        scanf("%d",&num);
        f_L(num);//calling
}

//defination
void f_L(int num){

        int O_num=num;
        int last_digit,first_digit,rem,sum=0;
        last_digit=num%10;
        printf("\nlast %d",last_digit);
```

```
        while(num>0){
                rem=num%10;
                num=num/10;
        }
        first_digit=rem;
        printf("\nfirst %d",first_digit);

        sum=first_digit+last_digit;

        printf("\nThe sum of last and first digit of the num %d is %d",O_num,sum);

}
//////////////////////////assignment4
```

1. Print armstrong number in the the given range 1 to n?

```
    //print the armstrong number in the given range
    #include<stdio.h>
    void armstrong(int);
    void main(){
        int end;
        printf("enter the end of the range");
        scanf("%d",&end);
        armstrong(end);
    }
    void armstrong(int end){
                //1,2,3,4,5.............100
        int k,rem;

        printf("armstrong numbers are : ");
        /*
        for(k=1;k<=end;k++){
                //now check the each k is armstrong or not
                int num=k;//assign k to num bcz num is going to be modify
                int sum=0;//we want sum=0 for everytime when we start to check

                        while(num>0){
                                rem=num%num;
                                num=num/10;
                                sum=sum+(rem*rem*rem);
                        }

                if(k==sum){
                        printf("%d\t",k);
                }


        }
        */
```

```
    for(k=1;k<=end;k++){

            int num=k;
            int num_2=k;
            //int num=num_2=k; k==>num_2 and num_2==>num

            int count=0;
            int sum=0;
            //to check the count
            while(num>0){
                    num=num/10;
                    count++;
            }

            //sum of the power
                                    while(num_2>0){
                                            rem=num_2%10;
                                            num_2=num_2/10;

                                            //calculate the power
                                            int power=1;
                                            int cnt=count;
                                                                    while(cnt!=0){

    power=power*rem;
                                                                            cnt--;
                                                                    }

                                            sum=sum+power;
                                    }


                    //check that number is equal to that sum of the power or not ?
                    if(sum==k){
                                            printf(" %d\t",k);
                                    }

    }

}
```

2. Print prime number in the given range 1 to n?

```
//range prime
#include<stdio.h>
void prime(int);
void main(){
    int end;
```

```
	printf("enter the end of the range :");
	scanf("%d",&end);
	prime(end);//call
}

//defination
void prime(int end){
		int k;


	for(k=1;k<=end;k++){
		int num=k;
		//check for each k the number is prime or not
		int i=2;//start mod from 2 check up to 1 no before that number
				while(i<num){
					//check num is completely divisible or not
					if(num%i!=0){
						i++;
					}
					else{
						break;
					}
				}

			if(i==num){
				printf("%d\t",k);
			}



	}
}
```

3. check perfect number in the given range 1 to n?

```
//perfect number
#include<stdio.h>
void perfect(int);
void main(){
	int end;
	printf("Enter the end:");
	scanf("%d",&end);
	perfect(end);
}

void perfect(int end){
	int k;
	for(k=1;k<=end;k++){
			int num=k;
```

```
                int sum=0;
                        for(int i=1;i<num;i++){
                                if(num%i==0){
                                        sum=sum+i;
                                }
                        }

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

    }
```

4. check strong number in the given range 1 to n?

```
//strong numbers
#include<stdio.h>
void stng(int);
void main(){
        int end;
        printf("Enter the end of the range:");
        scanf("%d",&end);
        stng(end);

}
void stng(int end){
        int k,rem;

        printf("strong numbers are: ");

        for(k=1;k<=end;k++){
                int num=k;

                int sum_F=0;

                while(num>0){


                        rem=num%10;
                        num=num/10;
                                //calculate the fact of each digits
                                int fact=1;
                                while(rem>0){
                                        fact=fact*rem;
                                        rem--;
                                }

                                //sum of the fact of each digits
                                sum_F=sum_F+fact;
```

```
                }

                //equalate sum with original number
                if(k==sum_F){
                        printf("%d\t",k);
                }
        }
}
```

5. Print fibonacci series?(optional)

```
//fibonacci series
#include<stdio.h>
void fibo(int,int);

void main(){
    int prefib1=0;
    int prefib2=0;
    fibo(prefib1,prefib2);

}

void fibo(int prefib1,int prefib2){

    int fib=0,end;

    printf("Enter the range 0 to :");
    scanf("%d",&end);
    //solution to handle the infinity condition  1 1 1 1 -->(if)
    if(prefib1==0 && prefib2==0){
                    fib=prefib2+prefib1;
                    printf("%d \t",fib);
                    prefib1++;
                    fib=prefib2+prefib1;
                    printf("%d\t",fib);
    }

    while(fib<=end)
    {
                    prefib1=prefib2;
                    prefib2=fib;
                    fib=prefib2+prefib1;
                    if(fib<=end){
                            printf("%d\t",fib);
                    }
    }
}
////////////////////////////////
```

Type4

Assignment1

1. Finding F from C (temp).

```
//findind F from C (temp)
#include<stdio.h>
float F_C(float);
void main(){
        float C=12.3;
        float feri=F_C(C);
        printf("F is %f",feri);
}


float F_C(float C){
        float F;
        F=(C*9/5)+32;
        return F;
}
```

2. Finding area and perimeter of rectangle or circle.

```
//find area of rectangle and circle
#include<stdio.h>
float circle_A(float);
float peri_C(float);
float Rec_A(float,float);
float Rec_peri(float,float);

void main(){

        float radius=5.2;
        float area_C=circle_A(radius);
        printf("\narea of circle is %f",area_C);
        float perimeter_C=peri_C(radius);
        printf("\nperimeter of circle :%f",perimeter_C);

        float length=5;
        float breadth=2;

        float area_R=Rec_A(length,breadth);
        printf("\nArea of rectangle:%f",area_R);

        float peri_R=Rec_peri(length,breadth);
        printf("\nPerimeter of rectangle:%f",peri_R);


}
```

```
float circle_A(float radius){
    float pie=3.14;
    float area_C=pie*radius*radius;
    return area_C;

}

float peri_C(float radius){
    float pie=3.14;
    float perimeter_C=2*pie*radius;
    return perimeter_C;

}

float Rec_A(float length,float breadth){
    float area=length*breadth;
    return area;

}

float Rec_peri(float length,float breadth){
    float peri=2*(length+breadth);
    return peri;
}
```

3. Accept a 3 digit number from user and find the sum of the digits and also reverse the number

```
//accept 3 digit num ,sum the digits and reverse

#include<stdio.h>
//declaration
int reverse(int num);
int sum(int num);


void main(){

        int num=11,s,r;
        s=sum(num);
        printf("sum is %d",s);
        r=reverse(num);
        printf("rev is %d",r);

}
```

```
//defination
int sum(int num){
	int s=0;
	while(num>0){
		int rem=num%10;
		num=num/10;
		s=s+rem;
	}

	return s;
}

int reverse(int num){
	int rev=0;
	while(num>0){
		int rem=num%10;
		num=num/10;
		//printf("num:%d\n",num);
		rev=(rev*10)+rem;
		//printf("rev:%d\n",rev);
	}

	return rev;
}
```

4. Check if the given number is even or odd.

```
//check even and odd
#include<stdio.h>
//declaration
int even_odd(int);

void main(){
	int num;
	printf("Enter the num:");
	scanf("%d",&num);
	//call
	int res=even_odd(num);
	if(res==1){
		printf("even number");
	}
	else{
		printf("Odd number");
	}
}
//defination

int even_odd(int num){
```

```
    if(num%2==0){
            return 1;
    }
    else
    {
            return 0;
    }
}
```

5. Calculating total salary based on basic. If basic <=5000 da, ta and hra will be 10%,20% and 25% respectively otherwise da, ta and hra will be 15%,25% and 30% respectively.

```
//total salary

#include<stdio.h>
//declaration

float total_sal(float);

void main(){
    float basic=1400;
    float bs=total_sal(basic);
    printf("\nThe total salary is %f",bs);
}


//defination
float total_sal(float basic){
    float total;
    float da,ta,hra,a;

    if(basic<=5000){
            //printf("a is %f",a=10/100);// 10/100 it is internally is a int so int /int gives int therfore it gives o
            //da=basic*(10/100); eihter make any one float or convert into  0.1
            da=basic*0.1;
            printf("\nda is %f",da);
            ta=basic*0.2;
            printf("\nta is %f",ta);
            hra=basic*0.25;
            printf("\nhra is %f",hra);

    }
    else{
            da=basic*(15/100);
            ta=basic*(20/100);
            hra=basic*(25/100);
    }
```

```
	total=basic+da+ta+hra;
	return total;

}
```

6. Write a program to check if person is eligible to marry or not (male age >=21 and female age>=18

```
//function without parameters without returntype
//eligible for marriage
#include<stdio.h>
int eligible(char,int);
void main(){
	int age;
	char gender;
	printf("Enter age:");
	scanf("%d",&age);
	printf("Enter gender:");
	fflush(stdin);
	scanf("%c",&gender);

int res=eligible(gender,age);//char
if(res==1){
	printf("Eligible");

}
else{
	if(res==0){
		printf("not Eligible");
	}else{
		if(res== -1){
			printf("invalid input");
		}
	}
}
}


//function
int eligible(char gender,int age){


	if(gender=='F'){

		if(age>=18){
			return 1;
		}
		else{
```

```
                return 0;
        }
    }
    else{
        if(gender=='M'){

                if(age>=21){
                    return 1;
                }
                else{
                    return 0;
                }
        }
        else{
                return -1;
        }
    }
}
```

Assignment2

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

```
//using scanf()
//Find the price of item when discount is given (specify different discount based on price)
#include<stdio.h>

//declaration
float discount(float);

void main(){
        float price,p;
        //take the price from user
        printf("Enter the price : ");

        scanf("%f",&price);
        //call
        p=discount(price);
                printf(" dis is RS %f ",p);




}
```

```
//defination
float discount(float price){

	float dis;



	float price_Ini=price;



	if(price>=5000 && price<=7000){
		dis=price*0.2;
		price=price-dis;

	}
	else{
		if(price>=3000&&price<5000){
			dis=price*0.15;
			price=price-dis;
		}
		else{
			if(price<3000){
				dis=price*0.05;
				price=price-dis;
			}

		}
	}

	return price;
}

/*
//heart func 24/7
1. impure
2.pure
3.supply
*/
```

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

```
//using scanf()
//greatest no. among 3
#include<stdio.h>

//declaration
```

```
int greatest(int,int,int);
void main(){
	int num1,num2,num3;

	printf("Enter num1:");
	scanf("%d",&num1);
	printf("\nEnter num2:");
	scanf("%d",&num2);
	printf("\nEnter num3 :");
	scanf("%d",&num3);

//call
	int g=greatest(num1,num2,num3);
	printf("Greatest no is %d",g);

}

//defination
int greatest(int num1,int num2,int num3){



	if(num1>num2){
		if(num1>num3){
			return num1;
		}
		else{
			return num2;
		}
	}
	else{
		if(num2>num3){
			return num2;
		}
		else{
			return num3;
		}
	}


}
```

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

   //using scanf()//Accept two numbers from user and an operator (+,-,/,*,%) based on that perform the desiredoperations.(without using scanf)
   #include<stdio.h>

```
//declaration
int sum(int,int);
int sub(int,int);
int multi(int,int);
int mod(int,int);

void main(){

	char sign;
	int num1,num2,res;

	printf("Enter num1 :");
	scanf("%d",&num1);

	printf("Enter num2 :");
	scanf("%d",&num2);

	//when we use scanf with %c have to clear the buffer (\n \t enter tab space
etc)
	fflush(stdin);//to clean the buffer
	printf("Enter the sign:");
	scanf("%c",&sign);

	if(sign=='+'){
		res=sum(num1,num2);
		printf("Addition is %d",res);
	}
	else{
			if(sign=='-'){

					res=sub(num1,num2);
					printf("sub is %d",res);
			}
			else{
					if (sign=='/'){

						res=div(num1,num2);
						printf("div is %d",res);
					}
					else{
							if(sign=='*'){


	res=multi(num1,num2);

	printf("multiplication is %d",res);
							}
```

```
                                                    else{

        if(sign=='%'){


                                                                    int
res=mod(num1,num2);

        printf("mod is %d",res);
                                                                    }
                                                                    else{

        printf("Invalid Inputs");
                                                                    }
                                                    }
                                            }
                                }
                }

}



int sum(int num1,int num2){
                int     res=num1+num2;
                return res;
}


int sub(int num1,int num2){


        int res=num1-num2;
        return res;
}

int multi(num1,num2){

        int res=num1*num2;

        return res;

}

int mod(num1,num2){
```

```
	int res=num1%num2;
	return res;

}

int div(num1,num2){


	int res=num1/num2;
	return res;

}
```

```
//using scanf
//Accept two numbers from user and an operator (+,-,/,*,%) based on that perform
the desiredoperations.(without scanf)
#include<stdio.h>

//declaration
int add(int,int);
int sub(int,int);
int div(int,int);
int multi(int,int);
int mod(int,int);


void main(){
	printf("\n 1.add \n 2. sub \n 3.div \n 4.mul \n 5.mod \n\n");
	int choice;

	printf("Enter choice:");
	scanf("%d",&choice);

	if(choice==1){

	int num1,num2,res;
	printf("Enter num1:");
	scanf("%d",&num1);

	printf("Enter num2 :");
	scanf("%d",&num2);

	res=add(num1,num2);   //call
	printf("addition is %d :",res);

	}else{
			if(choice==2){
```

```
                int num1,num2,res;
                printf("Enter num1:");
                scanf("%d",&num1);

                printf("Enter num2 :");
                scanf("%d",&num2);

                res=sub(num1,num2);    //call
                printf("substraction is %d :",res);


                }
                else{
                        if(choice==3){

                                int num1,num2,res;
                                printf("Enter num1:");
                                scanf("%d",&num1);

                                printf("Enter num2 :");
                                scanf("%d",&num2);

                                res=div(num1,num2);
        //call
                                printf("div is %d :",res);
                        }
                        else{
                                if(choice==4){

                                                int
num1,num2,res;

        printf("Enter num1:");

        scanf("%d",&num1);


        printf("Enter num2 :");

        scanf("%d",&num2);


        res=multi(num1,num2); //call

        printf("multiplication is %d :",res);
```

```
                                                        }else{

        if(choice==5){

                                                                int
num1,num2,res;

        printf("Enter num1:");

        scanf("%d",&num1);


        printf("Enter num2 :");

        scanf("%d",&num2);


        res=mod(num1,num2);  //call

        printf("addition is %d :",res);

                                                                }
                                                                else{

        printf("\nInvalid Inputs");
                                                                }
                                                        }
                                                }
                                }
                        }

}



//defination

int add(int num1,int num2){

        int res=num1+num2;
        return res;
}

int sub(int num1,int num2){


        int res=num1-num2;
```

```
        return res;
}

int multi(int num1,int num2){

        int res=num1*num2;
        return res;
}

int div(int num1,int num2){


        int res=num1/num2;
        return res;
}

int mod(int num1,int num2){


        int res=num1%num2;
        return res;
}
```

4. 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.

```
5. //using scanf
6. //4. 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
7. #include<stdio.h>
8.
9. //declaration
10. int even_Odd(int);
11. float basic_salary(float);
12.
13. void main(){
14.
15.         int choice=2;
16.         printf("1.even odd \n 2.basic_salary");
17.
18.         printf("\nEnter the choice:");
19.         scanf("%d",&choice);
20.
21.
22.
23.         if(choice==1){
24.
25.                 int num,n;
```

```
26.                     printf("\nEnter the number to check even odd :");
27.                     scanf("%d",&num);
28.                     n=even_Odd(num);
29.                     if(n==1)
30.                     printf("Even");
31.                     else
32.                     printf("odd");
33.
34.             }else{
35.
36.
37.                     if(choice==2){
38.                             float basic_s,t;
39.                             printf("\nEnter the basic salary:");
40.                             scanf("%f",&basic_s);
41.
42.                             t=basic_salary(basic_s);
43.                             printf("Total salary is %f",t);
44.                     }
45.                     else{
46.                             printf("\nInvalid inputs");
47.                     }
48.             }
49. }
50.
51.
52. //definations
53. int even_Odd(int num){
54.
55.
56.
57.                             if(num%2==0)
58.                             {
59.                                     return 1;
60.                             }
61.                             else{
62.                                     return 0;
63.                             }
64. }
65.
66. float basic_salary(float basic_s){
67.
68.             float total;
69.             float da,ta,hra;
70.
71.                                     if(basic_s<=5000){
72.                                             da=basic_s*0.1;
73.                                             ta=basic_s*0.2;
```

```
74.                                             hra=basic_s*0.25;
75.                                     }
76.                                     else{
77.                                             da=basic_s*0.15;
78.                                             ta=basic_s*0.20;
79.                                             hra=basic_s*0.25;
80.                                     }
81.
82.                                     total=basic_s+da+ta+hra;
83.                             return total;
84. }
```

5.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

```
//using scanf()
/*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*/
#include<stdio.h>

//declaration
float billing(float);


void main(){
        float bill,d;
        printf("\nEnter the bill:");
        scanf("%f",&bill);

        d=billing(bill);
        printf("bill is %f",d);



}

float billing(float bill){

        float dis;

        printf("\n 1.student \n 2. not a student");
```

```
int user;
printf("\nEnter the user num:");
scanf("%d",&user);


float bill_ini=bill;

if(user==1){
        if(bill>500){
            dis=bill*0.2;
            bill=bill-dis;
            return bill;
        }
        else{
            dis=bill*0.1;
            bill=bill-dis;
            return bill;
        }
}else{
        if(user==2){
                if(bill>600){
                    dis=bill*0.15;
                    bill=bill-dis;
                    return bill;
                }
                else{
                    printf("no discount");
                }
        }
        else{
            printf("invalid inputs");
        }
    }


}
```

Assignment3

2. Calculate sum of numbers in the given range.

```
//sum of the number within given range
#include<stdio.h>
int sum_range(int,int);//declaration

void main(){
    int s=5,e=10,r;
```

```
	r=sum_range(s,e);//call;
	printf("Sum is %d",r);
}

int sum_range(int start,int end){

	int sum=0;

	int i=start;
	while(i<=end){
		sum=sum+i;
		i++;
	}

	return sum;
}
```

3. Check number is prime or not.

```
//func without parameter without returntype
//prime number
#include<stdio.h>
//declaration
int prime(int);

void main(){
	int num,p;
	printf("Enter the num :");
	scanf("%d",&num);
	p=prime(num);//call
	if(p==1)
	printf("prime number");
	else
	printf("not prime number");
}

//defination
int prime(int num){

	int i=2;
	while(i<num){
		if(num%i!=0){
			i++;
		}
		else{
			break;
		}
```

```
        }

        if(i==num){
                return 1;
        }
        else{
                return 0;
        }
}
```

4. Check number is armstrong or not?

```
//armstrong by count of digits//4 digit 1634 3digit 153

#include<stdio.h>
#include<math.h>

//declaration
int armstrong(int);

void main(){
        int num,a;
        printf("Enter the num:");
        scanf("%d",&num);
//call
        a=armstrong(num);
        if(a==1)
                printf("armstrong");
        else
                printf("not armstrong");
}

//defination

int armstrong(int num){
        int rem;
        int num_O=num;
        int num_2=num;
        int sum_P=0;

        int count=0;
        while(num>0){
                num=num/10;
                count++;
        }

        while(num_2>0){
                rem=num_2%10;
                num_2=num_2/10;//dec
```

```
                        //pow(base,power)

                        //power=pow(rem,count);
                    //by using loop // to calculate the power as per count
                            int power=1;
                            int cnt=count;

                                    while(cnt!=0){
                                        power=power*rem;
                                        //printf("power:%d ",power);
                                        cnt--;
                                    }

                    sum_P=sum_P+power;
                }

                printf("%d",num_O);

                if(num_O==sum_P)
                {
                    printf("%d",sum_P);
                    return 1;

                }
                else{
                    return 0;
                }

    }
```

5. Check number is perfect or not.

```
    //func without parameters without returns
    //perfect number
    //declaration of the func
    int perfect(int);
    #include<stdio.h>
    void main(){
            int num,p;
            printf("Enter the num:");
            scanf("%d",&num);
            p=perfect(num);
            if(p==1)
            printf("perfect number");
            else
            printf("not perfect number");
    }

    int perfect(int num){
```

```
	int sum_Fac=0;


	for(int i=1;i<num;i++){
		if(num%i==0){
			sum_Fac=sum_Fac+i;//adding factors here
		}
	}

	// check it is perfect number or not
	if(num==sum_Fac){
		return 1;
	}
	else{
		return 0;
	}
}
```

6. Find factorial of number.

```
//factorial number
#include<stdio.h>

//declaration

int factorial(int);


void main(){
	int num,f;
	printf("Enter  the num:");
	scanf("%d",&num);
	//call
	f=factorial(num);
	printf("factorial of %d is %d ",num,f);

}

//defination
int factorial(int num){
	int fact=1;
	int i=num;

	while(i>0){
		fact=fact*i;
		//printf("\n fact is %d and i is %d",fact,i);
		i--;
	}
```

```
        return fact;
}
```

7. Check number is strong or not.

```
//strong numbers
#include<stdio.h>
void stng(int);
void main(){
        int end;
        printf("Enter the end of the range:");
        scanf("%d",&end);

        stng(end);
}
void stng(int end){
        int k,rem;

        printf("strong numbers are: ");

        for(k=1;k<=end;k++){
                int num=k;

                int sum_F=0;

                while(num>0){


                        rem=num%10;
                        num=num/10;
                                //calculate the fact of each digits
                                int fact=1;
                                while(rem>0){
                                        fact=fact*rem;
                                        rem--;
                                }

                                //sum of the fact of each digits
                                sum_F=sum_F+fact;

                }

                //equalate sum with original number
                if(k==sum_F){
                        printf("%d\t",k);

                }

        }
}
```

8. Check the given number is palindrome or not?

```
//palindrom num -->num==reverse of that num


//declaration
int palindrome(int);

        #include<stdio.h>
        void main(){
                int num,p;
        printf("Enter the num:");
        scanf("%d",&num);

        p=palindrome(num);//call
        if(p==1)
        printf("palindrome");
        else
        printf("not palindrome");


        }


//defination

int palindrome(int num){

        int num_O=num,rev=0;
        // seperate the digits
        int rem=0;

        while(num>0){
                rem=num%10;
                num=num/10;
                rev=rev*10+rem;
        }

        if(rev==num_O){
                return 1;

        }
        else{
                return 0;
        }
}
```

10.Add the (first and last) digit of a given number

```
#include<stdio.h>
int sum_range(int,int);//declaration

void main(){
	int s=5,e=10,r;
	r=sum_range(s,e);//call;
	printf("Sum is %d",r);
}

int sum_range(int start,int end){

	int sum=0;

	int i=start;
	while(i<=end){
		sum=sum+i;
		i++;
	}

	return sum;
}
////////////////////////////////////////////////////////////////////////////////
```