Assignment 5

1. Convert Ass_1 and ASS_2 program into functions with four types of function.

Function-Type 1

A1

```
//1. Finding F from C (temp).

#include<stdio.h>

void F_to_c(){

        float celsius , fahrenheit ;

    printf("Enter temperature in Celsius :");
    scanf("%f",&celsius);

    fahrenheit = ( celsius * 9/5) + 32;
    printf("Temperature in Fahrenheit: %.2f\n", fahrenheit);
}


void main(){

    F_to_c();
}
//2. Finding area and perimeter of rectangle or circle.

#include<stdio.h>
```

```
#define PI 3.14159
void area_perimeter(){

        int ch;
  float l, w, r;

  printf("1.Rectangle\n2.Circle\nEnter choice: ");
  scanf("%d", &ch);

  if (ch == 1) {
    printf("Enter length and width: ");
    scanf("%f %f", &l, &w);
    printf("Area: %.2f, Perimeter: %.2f\n", l * w, 2 * (l + w));
  }
  else if (ch == 2) {
    printf("Enter radius: ");
    scanf("%f", &r);
    printf("Area: %.2f, Circumference: %.2f\n", PI * r * r, 2 * PI * r);
  }
  else {
    printf("\nInvalid Choice.\n");
  }
}
void main(){

        area_perimeter();
        }


//Q3 Accept a 3 digit number from user and find the sum of the digits and also
//reverse the number.
```

```
#include<stdio.h>
void sum_and_rev(){

        int num,sum=0,rem,rev=0;
        printf("Enter the three digit number:");
        scanf("%d",&num);

         while(num>0){

                rem = num%10;

                sum =sum+rem;

                rev =rev*10+rem;

                num=num/10;
        }
        printf("Sum of digits: %d\n", sum);
   printf("Reversed number: %d\n", rev);
}

        void main(){

                sum_and_rev();
        }
```

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

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

```
void even_odd(){

	int num;

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

	if(num%2==0){

		printf("Number is even.");
	}
	else{

		printf("Number is odd.");
	}
}

void main(){

	even_odd();
}
```

```
//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.
```

```
#include<stdio.h>

void total_salary(){

        int salary ;
        int da, ta ,hra,total_salary;

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

   if(salary<=5000){

        da = ((salary)*10/100);
        ta = ((salary)*20/100);
        hra = ((salary)*25/100);

        }

        else{

                da = ((salary)*15/100);
                ta = ((salary)*25/100);
                hra = ((salary)*30/100);
        }


        total_salary = salary+da+ta+hra;
        printf("Total Salary: %.d\n",total_salary);
}
```

```
void main(){

	total_salary();
}
```

```
//Q6 Write a program to check if person is eligible to marry or not (male age >=21
//and female age>=18).

void eligibility(){
	int age;
	char gender;

	printf("Enter the  gender(M/F) and age:");
	scanf("%c%d",&gender,&age);

	if  ((gender == 'M' && age >=21) || (gender == 'F' && age<=21))
	{
		printf("You are eligible for marraige");
	}
	else
    printf("You are not elgibile for marraige");



}
```

```
void main(){

	eligibility();
}
```

A2

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

```
#include<stdio.h>
void price_of_item(){
	int price;
	float finalprice;
	float discount;
	printf("Enter the final price:");
	scanf("%d",&price);

	if(price <= 500){

		discount = price * 0.10;
	}
	else if(price>500 && price<=1000){

		discount = price * 0.20;
	}

	else if(price>1000 && price<2000){

		discount = price * 0.25;
```

```
        }

        finalprice = price - discount;
        printf("FinalPrice=%.2f",finalprice);

}
void main(){
        price_of_item();

}
```

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

```
#include<stdio.h>
void greatest_number(){
        int a,b,c;
        printf("Enter the three numbers:");
        scanf("%d %d %d",&a ,&b ,&c);

        if(a>b){

                if(a>c){
                        printf(" %d is greater",a);

                }
                else{

                        printf(" %d is greater",c);
                }
```

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

                else{
                        printf(" %d is  greater",c);
                }
        }
}
void main(){
                greatest_number();
}
```

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

```
 void operators (){
        int a , b;
        char sy ;
        int result;
        printf("Enter the two numbers:");
        scanf("%d %d",&a ,&b);

        printf("Enter the operator:");
        scanf(" %c",&sy);
```

```
        if(sy == '+'){

                result = a + b;
                printf("result =%d",result);
        }
        else if(sy == '-'){

                result = a-b;
                printf("result =%d",result);
        }

        else if (sy == '*'){

                result = a*b;
                printf("result = %d", result);
        }

        else if(sy == '/'){
                 result = a/b;
                 printf("result =%d",result);

        }
        else if( sy =='%'){

                result = a%b;
                printf("result = %d",result);
}

 }
```

```
void main(){
        operators();
}
```

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.

```
void Ed_basicSalary(){

        int ch = 2;
        int  a=10;
        int basicSalary =5000;
        float ta,hra,ba;
        float totalSalary;

        if (ch ==1){

                if(a%2==0){
                        printf("a is even ");
                }
                else{

                        printf("a is odd");
                }
        }

        else if(ch == 2){

            if(basicSalary<=5000){
```

```
                ba = basicSalary*0.10;
                ta = basicSalary*0.15;
                hra = basicSalary*0.20;
                 }

                 else {

                   ba = basicSalary*0.30;
                ta = basicSalary*0.35;
                hra = basicSalary*0.40;
                 }

                 totalSalary = basicSalary+ ba+ ta+hra;
                 printf("Total Salary=%.2f",totalSalary);
        }

        else if( ch>=3){

                printf("Invalid choice");
        }
}
void main(){

        Ed_basicSalary();



}
```

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.

```
void final_Price(){
        float price= 200;
        float discount;
        float finalprice;
        char isStudent = 'N';
        if(isStudent=='Y'){
                if(price>500){
                        discount = price*0.20;
                }
                else {
                        discount = price *0.10;
                }
    }
    else{

        if (price>600){

                discount = price*0.15;

                 }
                 else{

                        discount= 0;
                 }
        }

         finalprice = price - discount;
         printf("Final price =%.2f",finalprice);
}
```

```
void main(){
        final_Price();
        }
```

Type 2

A1

```
//1. Finding F from C (temp).

int temperature(){
        float celsius , fahrenheit ;

        printf("Enter temperature in Celsius :");
        scanf("%f",&celsius);

        fahrenheit = ( celsius * 9/5) + 32;

        return fahrenheit;

}
void main(){
        int temp=temperature();
        printf("Temperature in Fahrenhite is:%d",temp);
}
```

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

```
#include<stdio.h>
void main(){
        int res = evenodd();
```

```
        if(res==1){
                printf("The number is even");
}
   else
  printf("The number is odd.");
}
int evenodd(){
        int num;
        printf("Enter the number:");
        scanf("%d",& 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.

```
int calbasicSalary(){
        int salary = 6000;
        int da, ta ,hra,total_salary;
   if(salary<=5000){
        da = ((salary)*10/100);
        ta = ((salary)*20/100);
        hra = ((salary)*25/100);
        }
        else{
```

```
                da = ((salary)*15/100);
                ta = ((salary)*25/100);
                hra = ((salary)*30/100);
        }

        total_salary = salary+da+ta+hra;
   retrun total_salary;
}
void main(){

        int ts=total_salary();

        printf("Total Salary:%d",total_salary);

}
```

Q6 Write a program to check if person is eligible to marry or not (male age >=21 and female age>=18).

```
int eligibility(){
        int age;
        char gender;

        printf("Enter the  gender(M/F) and age:");
        scanf("%c%d",&gender,&age);

        if  ((gender == 'M' && age >=21) || (gender == 'F' && age>=18))
        {
            return 1;
```

```
        }
        else
    return 0;
}

int main(){

        int el=eligibility();

        if(el==1){

                printf("You are eligible for marraige.");
        }

        else
          printf("You are not eligibile for marraige.");
}
```

A2

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

```
#include<stdio.h>
int price_of_item(){

        int price = 500;
        float finalprice;
        float discount;
        if(price <= 500){
                discount = price * 0.10;
```

```
        }
        else if(price>500 && price<=1000){

                discount = price * 0.20;
        }

        else if(price>1000 && price<2000){

                discount = price * 0.25;
        }
        finalprice = price - discount;
      return finalprice;
}

int main() {
          int final_price=price_of_item();
    printf("Final price:%d",final_price);
}
```

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

```
#include <stdio.h>
int greatest_number() {
   int a, b, c;
   printf("Enter three numbers: ");
   scanf("%d %d %d", &a, &b, &c);
   if (a > b) {
      if (a > c)
         return a;
      else
         return c;
```

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

int main() {
    int greatest = greatest_number();
    printf("The greatest number is: %d\n", greatest);

}
```

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

```
 int operators(){
            int a= 100 , b= 20;
            char sy = '/';
            int result;
            if(sy == '+'){

                    result = a + b;
                return result;
            }
            else if(sy == '-'){
                    result = a-b;
                    return result;
            }
```

```
        else if (sy == '*'){

                result = a*b;
                return result;
        }
        else if(sy == '/'){
                 result = a/b;
                return result;
        }
        else if( sy =='%'){
                result = a%b;
                return result;
        }

}
void main(){

        int result= operators();
        printf("Result:%d",result);
}
```

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.

```
int Even_odd(){

    int a;
    printf("Enter the number:");
    scanf("%d",&a);
```

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

                        return 0;
                }
}

int basic_Salary(){


                int basicSalary =5000;
        float ta,hra,ba;
        float totalSalary;

            if(basicSalary<=5000){

                ba = basicSalary*0.10;
                ta = basicSalary*0.15;
                hra = basicSalary*0.20;
                 }

                 else {

                   ba = basicSalary*0.30;
                ta = basicSalary*0.35;
                hra = basicSalary*0.40;
                 }
```

```
                totalSalary = basicSalary+ ba+ ta+hra;
                return totalSalary;

}

void main(){
        int ch;
        printf("\nMenu:\n");
   printf("1. Check Even/Odd\n");
   printf("2. Calculate Basic Salary\n");

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

   if (ch == 1) {
      int eodd = Even_odd();
      if (eodd == 1)
         printf("The number is Even.\n");
      else
         printf("The number is Odd.\n");
   } else if (ch == 2) {
      float bSalary = basic_Salary();
      printf("Total salary = %.2f\n", bSalary);
   } else {
      printf("Invalid choice! Please enter 1 or 2.\n");
   }
}
```

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.

```
#include<stdio.h>

float studentprice(){

        float price;
        float discount;
        float finalprice;
        char isStudent;

        printf("Enter the price:");
        scanf("%f",&price);

         printf("Are you a student? (yes/no): ");
   scanf(" %ch", &isStudent);

        if(isStudent=='Y'){
                if(price>500){
                        discount = price*0.20;
                }
                else {

                        discount = price *0.10;

                }
    }
```

```
    else{

        if (price>600){

            discount = price*0.15;

            }
            else{

                discount= 0;
            }
        }

        finalprice = price - discount;

          return finalprice;


}


void main(){

          float fp = studentprice();

          printf("Final Price:%f",fp);

}
```

Type 3

A1

1. Finding F from C (temp).

```
#include <stdio.h>

void fahrenheit(float celsius) {
   float fahrenheit_v;
   fahrenheit_v = (celsius * 9 / 5) + 32;
   printf("Temperature in Fahrenheit: %.2f\n", fahrenheit_v);
}
void main() {
   float celsius;

   printf("Enter the temperature in Celsius: ");
   scanf("%f", &celsius);

   fahrenheit(celsius);

}
```

Q2. Finding area and perimeter of rectangle or circle.

```
#include <stdio.h>
#define PI 3.14159
int main() {
   int ch;
   float l, w, r;
   printf("1. Rectangle\n2. Circle\nEnter choice: ");
   scanf("%d", &ch);
```

```
    if (ch == 1) {
        printf("Enter length and width: ");
        scanf("%f %f", &l, &w);
        rectangle(l, w);
    }
    else if (ch == 2) {
        printf("Enter radius: ");
        scanf("%f", &r);
        circle(r);
    }
}
void rectangle(float length, float width) {
    float area = length * width;
    float perimeter = 2 * (length + width);
    printf("Area: %.2f, Perimeter: %.2f\n", area, perimeter);
}
void circle(float radius) {
    float area = PI * radius * radius;
    float circumference = 2 * PI * radius;
    printf("Area: %.2f, Circumference: %.2f\n", area, circumference);
}
```

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

```
#include<stdio.h>
int main(){
        int num;
        printf("Enter a 3 digit number:");
        scanf("%d",& num);
        rev_sum(num);
```

```
}
void rev_sum(int num){
        int  sum,rev, n1 ,n2 , n3;

        n1 = num/100;
        n2 = (num /10)%10;
        n3 = num %10;
        sum = n1 + n2+ n3;
        rev = (n3*100)+(n2*10)+n1;
        printf("Sum of the digits in the number is:%d\n",sum);
        printf("Reverse number: %d\n",rev);

}
```

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

```
void main(){
                int num;

        printf("Enter the number:");
        scanf("%d",& num);
    evenodd(num);
                }
void evenodd(int num){
        if (num %2 == 0){
                printf("Number is even.");
        }
        else
        printf("Number is odd.");

}
```

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.

```
void main(){

        int salary;
        printf("Enter the salary:");
        scanf("%d",&salary);
    calculate_salary(salary);
}
void calculate_salary(int s){
                    int total_salary,ta,da,hra;
         if(s<=5000){
        da = ((s)*10/100);
        ta = ((s)*20/100);
        hra = ((s)*25/100);
        }

        else{

                da = ((s)*15/100);
                ta = ((s)*25/100);
                hra = ((s)*30/100);
        }
                total_salary = s+da+ta+hra;
        printf("Total Salary: %d\n",total_salary);
        return 0;

}
```

Q6 Write a program to check if person is eligible to marry or not (male age >=21

and female age>=18).

```
void main(){

        int age;
        char gender;

        printf("Enter the  gender(M/F) and age:");
        scanf("%c%d",&gender,&age);


    eligibility(age,gender);

}


void eligibility(int age , int gender){


        if  ((gender == 'M' && age >=21) || (gender == 'F' && age<=21))
        {
                printf("You are eligible for marraige");
        }
        else
    printf("You are not elgibile for marraige");


}
```

A2

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

```
void main(){

		int price;


		printf("Enter the price:");
		scanf("%d",&price);
		finalPrice(price);
		}
void finalPrice(int price){
	float finalprice;
	float discount;
	if(price <= 500){
		discount = price * 0.10;
	}
	else if(price>500 && price<=1000){


		discount = price * 0.20;
	}


	else if(price>1000 && price<2000){


		discount = price * 0.25;
	}


	finalprice = price - discount;
	printf("FinalPrice=%.2f",finalprice);
}
```

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

```
void main(){
                    int a , b, c;
          printf("Enter the number 1:");
          scanf("%d",&a);
           printf("Enter the number 2:");
          scanf("%d",&b);
           printf("Enter the number 3:");
          scanf("%d",&c);
}
void greatest(){
                    int a , b, c;
          if(a>b){
                              if(a>c){
                              printf(" a is greater");
                              }
                    else{
                              printf(" c is greater");
                              }
          }
          else
          {
                    if(b>c)
                    {
                              printf("b is greater");
                    }
                              else{
                               printf(" c is  greater");
                    }
          }
}
```

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

```
void operators(int a, int b,char sy){

    int result;

    if(sy == '+'){

        result = a + b;
        printf("result =%d",result);
    }
    else if(sy == '-'){

        result = a-b;
        printf("result =%d",result);
    }

    else if (sy == '*'){

        result = a*b;
        printf("result = %d", result);
    }

    else if(sy == '/'){
        result = a/b;
        printf("result =%d",result);
```

```
        }
        else if( sy =='%'){

                result = a%b;
                printf("result = %d",result);
        }

}


void main(){

                int a , b;
           char sy;

        printf("Enter two numbers:");
        scanf("%d%d",&a,&b);



        printf("Enter the operator:");
        scanf(" %c",&sy);

        operators(a,b,sy);

}
```

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.

```
void main(){
        int ch;
        int  a;
        int basicSalary;

        printf("Menu:\n1 Even Odd\n 2.Basic Salary:");

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

        if(ch==1){

          printf("Enter the number to check if even or odd: ");
          scanf("%d",&a);

          Evenodd(a);
        }
        else{

                printf("Enter the Basic Salary:");
                scanf("%d",&basicSalary);

                bSalary(basicSalary);
        }
}
void Evenodd(int a){
                                if(a%2==0){
                        printf("%d is even",a);
                }
```

```
else{
                        printf("%d is odd",a);
                }
        }
void bSalary(int basicSalary){
        float ta,hra,ba;
        float totalSalary;
        if(basicSalary<=5000){
                ba = basicSalary*0.10;
                ta = basicSalary*0.15;
                hra = basicSalary*0.20;
                 }

                 else {

                   ba = basicSalary*0.30;
                ta = basicSalary*0.35;
                hra = basicSalary*0.40;
                 }

                 totalSalary = basicSalary+ ba+ ta+hra;
                 printf("Total Salary=%.2f",totalSalary);
        }
```

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.

```
void final_Price(float price,char isStudent){
                float discount;
```

```
        float finalprice;
        if(isStudent=='Y'){
                if(price>500){
                        discount = price*0.20;
                }
                else {

                        discount = price *0.10;
                }
    }
    else{
        if (price>600){
                discount = price*0.15;
                 }
                 else{
                        discount= 0;
                 }
         }
         finalprice = price - discount;
         printf("Final price =%.2f",finalprice);
    }

void main(){
                float price;
                char isStudent = 'N';

        printf("Enter the price:");
        scanf("%f",&price);
          final_Price(price,isStudent);
}
```

Type 4

A1

1. Finding F from C (temp).

```
#include <stdio.h>
float temperature(float celsius);
int main() {
   float celsius, fahrenheit;
   printf("Enter temperature in Celsius: ");
   scanf("%f", &celsius);
   float temp = temperature(celsius);
   printf("Temperature in Fahrenheit: %.2f\n", temp);

}
float temperature(float celsius) {
   float fahrenheit = (celsius * 9.0 / 5.0) + 32;
   return fahrenheit;
}
```

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

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

          int res = evenodd(num);
```

```
        if(res==1){
                printf("The number is even");
}
   else
  printf("The number is odd.");
}
int evenodd(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.

```
#include<stdio.h>
void main(){
                int salary = 4000;
        int ts=calbasicSalary(salary);
                printf("Total Salary:%d",ts);

}
int calbasicSalary(int salary){
                int da, ta ,hra,total_salary;
   if(salary<=5000){
```

```
        da = ((salary)*10/100);
        ta = ((salary)*20/100);
        hra = ((salary)*25/100);
        }
        else{
                        da = ((salary)*15/100);
                ta = ((salary)*25/100);
                hra = ((salary)*30/100);
        }
        total_salary = salary+da+ta+hra;
   return total_salary;
}
```

Q6 Write a program to check if person is eligible to marry or not (male age >=21 and female age>=18).

```
#include<stdio.h>
int eligibility(int age,char gender){
                if  ((gender == 'M' && age >=21) || (gender == 'F' && age>=18))
        {
            return 1;
        }
        else
      return 0;
}
int main(){

                int age;
        char gender;

        printf("Enter the  gender(M/F) and age:");
```

```
        scanf("%c%d",&gender,&age);



        int el=eligibility(age,gender);

        if(el==1){

                printf("You are eligible for marraige.");
        }
        else
          printf("You are not eligibile for marraige.");
}
```

2. **Convert Ass_3 program into functions with four types of function.(Excluding range programs) . convert range programs into two type of function i.e. w/o parameter, w/o return type and with parameter and w/o return type.**

Type 1

Q1Print numbers from 1 to 10.

```
#include<stdio.h>

void numbers(){

        int a =1;

        while(a<=10)

{
         printf("%d",a);

         a++;
```

```
}



}

void main(){

        numbers();
}



//Q2. Print table for the given number.

#include<stdio.h>

void table(){
        int num,a=1,b;
        printf("Enter the number :");
        scanf("%d",&num);
        while(a<=10){
                b = num*a;
                printf("%d\n",b);
                        a++;
        }
}
void main(){

        table();
```

```
}
```

3. Calculate sum of numbers in the given range.

```
#include<stdio.h>

void sum_of_numbers(){

        int num , rem,sum=0;

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


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


        printf("Sum=%d",sum);
        printf("Num=%d",num);
}

void main(){

         sum_of_numbers();
}
```

4. Check number is prime or not

```
#include<stdio.h>

void prime_no(){

        int num,i=2,flag=0;


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


        while(i<num/2){

          if(num%i==0){

                  flag =1;
                  break;
          }

            i++;

        }

        if(flag==0){

                printf("The number is a prime number ");
        }
```

```
        else{

                printf("The number is not a prime number");
        }
}



void main(){

        prime_no();
}
```

5. Check number is armstrong or not?

```
#include<stdio.h>

void armstrong(){

        int rem , sum=0 , m=1;
        int num;
        int count=0;
        int tempcount;

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

        int temp =num;

        while(temp>0){
```

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

temp = num;

while(temp>0){

        rem = temp%10;
        tempcount=count;

        m=1;
        while(tempcount>0){

                m = m*rem;
                tempcount--;
        }

        sum = sum+m;
        temp=temp/10;
}

if(sum==num){

        printf("the number is a Armstrong no.");
}

else {

        printf("The no. is not Armstrong");
```

```
        }

}


void main(){

         armstrong();
}
```

Q6.Check number is perfect or not.

```
#include<stdio.h>

void perfect_no(){

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

         i=1;
        while(i<num){


                if(num%i==0){

                        sum = sum +i;


                }
                        i++;
```

```
}

if(sum==num){

        printf("The number is a perfect number.");
}
else {

   printf("The number is not a perfect number.");

}
}




void main(){

         perfect_no();
}
```

Q7. Find factorial of number

```
#include<stdio.h>

void factorial(){

        int num , fact=1 , i;

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

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



	i=num;

	while(i>0){

		fact=fact*i;

		i--;
	}
	printf("Factorial of the %d is:%d",num,fact);
}

void main(){

	factorial();
}
```

8. Check number is strong or not

```
#include<stdio.h>

void strong_no(){

	int num, rem, i , fact ,temp;

	int sum = 0;
```

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

temp = num;

while(temp>0){

        rem = temp%10;

        fact=1;

        for(i=1;i<=rem;i++){

                fact= fact*i;
        }

        sum = sum+fact;
        temp = temp/10;

}

if(sum==num){

        printf("The number is a strong number.");

}

else{

        printf("The  number is not a strong number.");
```

```
        }

}
void main(){
                strong_no();
}
```

Q9 Check the given number is palindrome or not?

```
#include<stdio.h>
void palindrome(){
                int rem;
        int num;


        printf("Enter the number:");
        scanf("%d",&num);
                int temp=num;
        while(temp>0){

                rem = temp%10;
                printf("%d",rem);
                temp = temp/10;
        }


}
```

```
void main(){

        palindrome();
}
```

Q10.Add the (first and last) digit of a given number?

```
#include<stdio.h>

void sum(){

        int num, a , b,sum;

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

        a = num%10;   //last digit
        b=num;
        while(b>=10){

                b = b/10;
        }

        sum = a+b;

        printf("Sum of first and last digit is:%d",sum);
}
void main(){

        sum();
}
```

Type2

3. Calculate sum of numbers in the given range.

```
#include<stdio.h>
int number(){
        int num , rem,sum=0;

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

        int temp=num;
        while(temp>0){

                rem=temp%10;
                sum=sum+rem;
                temp=temp/10;
        }
      return sum;

}
void main(){

        int s = sum();

        printf("Sum of numbers :%d",s);
}
```

4. Check number is prime or not

```
#include<stdio.h>
int prime(){

        int num,i=2,flag=0;
        printf("Enter the number:");
        scanf("%d",&num);

        while(i<num/2){

          if(num%i==0){

                  flag =1;
                  break;
          }

            i++;

        }

        if(flag==0){
       return 1;
        }
        else{

                return 0;
        }
}
```

```
void main(){

        int p =prime();

        if(p==1){

        printf("The number is prime.");
   }
   else{

        printf("The number is not prime.");
        }
}
```

5. Check number is armstrong or not?

```
#include<stdio.h>

int armstrong(){

        int rem , sum=0 , m=1;
        int num;
        int count=0;
        int tempcount;

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

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

int temp =num;

while(temp>0){

        count++;
        temp=temp/10;
}

temp = num;

while(temp>0){

        rem = temp%10;
        tempcount=count;

        m=1;
        while(tempcount>0){

                m = m*rem;
                tempcount--;
        }

        sum = sum+m;
        temp=temp/10;
}

if(sum==num){

return 1;
```

```
        }

        else {

                return 0;
        }

}
void main(){
                int as = armstrong();

        if(as==1){
                        printf("The number is a armstrong number.");
        }
        else(as==0){

                printf("The number is not a armstrong number.");
        }
```

Q6. Check number is perfect or not.

```
#include<stdio.h>
int perfect(){

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

         i=1;
        while(i<num){
```

```
                if(num%i==0){

                        sum = sum +i;

                }
                        i++;
}
if(sum==num){

        return 1;
}
else {

  return 0;

}
}
```

Q7. Find factorial of number

```
#include<stdio.h>
int factorial(){
        int num , fact=1 , i;
        printf("Enter the number:");
        scanf("%d",&num);
        i=num;
        while(i>0){
                fact=fact*i;

                i--;
        }
```

```
        return fact;
}
void main(){
        int fr = factorial();

        printf("The factorial of the given number is:%d",fr);
}
void main(){

        int p = perfect();

        if (p==1){

                printf("The given number is a perfect number.");
        }
        else  {
                printf("The number is not a perfect number.");
        }
}
```

8. Check number is strong or not

```
#include<stdio.h>
int strong(){
        int num, rem, i , fact ,temp;
        int sum = 0;
        printf("Enter the number:");
        scanf("%d",&num);
        temp = num;
        while(temp>0){
                rem = temp%10;
                fact=1;
                for(i=1;i<=rem;i++){
```

```
                fact= fact*i;
        }

        sum = sum+fact;
        temp = temp/10;
        }
    if(sum==num){

        return 1;
        }

    else{
        return 0;
    }
}


void main(){

    int s = strong();

    if(s==1){

        printf("The number is a strong number");
    }
    else{

        printf("The number is not a strong number.");
    }
}
```

Q9 Check the given number is palindrome or not?

```
#include<stdio.h>
int palindrome(){
        int rem,rev=0;
        int num=6342;

while (num > 0) {
    rem = num % 10;
    rev = rev * 10 + rem;
    num /= 10;
  }
   return rev;
}
void main(){
        int p = palindrome();

        printf("Palindrome of the given number :%d",p);
}
```

Q10.Add the (first and last) digit of a given number?

```
#include<stdio.h>
int addition(){
                int num, a , b,sum;
       printf("Enter the number:");
        scanf("%d",&num);
        a = num%10;   //last digit
        b=num;
        while(b>=10){

                b = b/10;
```

```
        }

        sum = a+b;

    return sum;
}

void main(){

        int a = addition();
        printf("Sum of the last and the first digit in the number is:%d",a);
}
```

Type 3

Q1Print numbers from 1 to 10.

```
#include<stdio.h>
void numbers(int a){
        a=1;
        while(a<=10)
{
         printf("%d",a);

         a++;
}
}
void main(){

        int a;
```

```
        numbers(a);
}
```

Q2. Print table for the given number.

```
#include<stdio.h>
void table(int a,int b){
                int num;
        while(a<=10){

                b = num*a;
printf("%d\n",b);
        a++;
        }
}
void main(){
        int num;
        printf("Enter the number :");
        scanf("%d",&num);
         table(a,b);
}
```

3. Calculate sum of numbers in the given range.

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

                int num ;
```

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

	sum(num);

}

void sum(int num){

	int  rem,sum=0;

	int temp=num;
	while(temp>0){

		rem=temp%10;
		sum=sum+rem;
		temp=temp/10;
	}
	printf("Sum=%d",sum);
	printf("Num=%d",num);
}
```

4. Check number is prime or not

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

```
}
void prime(int num){

        int i=2,flag=0;
                while(i<num/2){
                 if(num%i==0){
                flag =1;
                   break;
          }

            i++;
        }
        if(flag==0){
                printf("The number is a prime number ");
        }

        else{

                printf("The number is not a prime number");
        }
}
```

5. Check number is armstrong or not?

```
#include<stdio.h>
void main(){
                int num;

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

```
}

void armstrong(int num){

        int rem , sum=0 , m=1;
        int count=0;
        int tempcount;
int temp =num;
        while(temp>0){
                count++;
                temp=temp/10;
        }
        temp = num;
        while(temp>0){
                rem = temp%10;
                tempcount=count;
                m=1;
                while(tempcount>0){
                        m = m*rem;
                        tempcount--;
                }
                sum = sum+m;
                temp=temp/10;
        }

        if(sum==num){

                printf("the number is a Armstrong no.");
        }
```

```
        else {

                printf("The no. is not Armstrong");
        }

}
```

Q6.Check number is perfect or not.

```
#include<stdio.h>
void main(){
                int num;

        printf("Enter the number:");
        scanf("%d",&num);
        perfect(num);
}
void perfect(int num){
        int sum=0, i;
          i=1;
        while(i<num){
                if(num%i==0){
                        sum = sum +i;
                        }
                        i++;

}

if(sum==num){
```

```
        printf("The number is a perfect number.");
}
else {

   printf("The number is not a perfect number.");

}
```

Q7.Find factorial of number.

```
#include<stdio.h>
void main(){
        int num;
        printf("Enter the number:");
        scanf("%d",&num);
        factorial(num);
}
void factorial(int num){
        int  fact=1 , i;
        i=num;
        while(i>0){
                fact=fact*i;
                i--;
        }
        printf("Factorial of the %d is:%d",num,fact);
}
```

8. Check number is strong or not

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

}
void strong(int num){
		int  rem, i , fact ,temp;
	int sum = 0;
		temp = num;
	while(temp>0){
	rem = temp%10;
		fact=1;
		for(i=1;i<=rem;i++){
			fact= fact*i;
		}
		sum = sum+fact;
		temp = temp/10;
		}
	if(sum==num){
		printf("The number is a strong number.");
	}

	else{
		printf("The  number is not a strong number.");
	}
}
```

Q9 Check the given number is palindrome or not?

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

        palindrome(num);
}

void palindrome(int num){
        int rem;
       int temp=num;
        int sum =0;
        while(temp>0){

                rem = temp%10;
           printf("%d",rem);
                temp = temp/10;
        }

}
```

Q10.Add the (first and last) digit of a given number?

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

        int num;

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

         addition(num);
}
void addition(int num){
        int a , b,sum;
        a = num%10;
        b=num;
        while(b>=10){
                b = b/10;
        }
        sum = a+b;
        printf("Sum of first and last digit is:%d",sum);
}
```

Type 4

3. Calculate sum of numbers in the given range.

```
#include<stdio.h>
int sum(int num){
                int rem,sum=0;
        int temp=num;
        while(temp>0){

                rem=temp%10;
                sum=sum+rem;
                temp=temp/10;
        }
  return sum;
}
void main(){
        int num;
        printf("Enter the number:");
        scanf("%d",&num);
        int s = sum(num);

        printf("Sum of numbers :%d",s);
}
```

4. Check number is prime or not

```
#include<stdio.h>
int prime(int num){
```

```
        int i=2,flag=0;
        while(i<num/2){
                if(num%i==0){
                   flag =1;
                   break;
             }
              i++;
        }

        if(flag==0){

      return 1;
        }

        else{

                return 0;
        }
}

void main(){

        int num;

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

        int p =prime(num);

        if(p==1){
```

```
        printf("The number is prime.");
    }
    else{

        printf("The number is not prime.");
        }
}
```

5. Check number is armstrong or not?

```
#include<stdio.h>
int armstrong(int num){
        int rem , sum=0 , m=1;
        int count=0;
        int tempcount;
        int temp =num;
        while(temp>0){
                count++;
                temp=temp/10;
        }

        temp = num;
        while(temp>0){
                rem = temp%10;
                tempcount=count;

                m=1;
                while(tempcount>0){
```

```
                m = m*rem;
                tempcount--;
            }
            sum = sum+m;
            temp=temp/10;
        }

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

            return 0;
        }
}
void main(){
        int num;

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

        int as = armstrong(num);

        if(as==1){

            printf("The number is a armstrong number.");
        }
        else{
            printf("The number is not a armstrong number.");
        }
}
```

Q6.Check number is perfect or not.

```
#include<stdio.h>
int perfect(int num){

        int sum=0, i;

         i=1;
        while(i<num){



                if(num%i==0){
                        sum = sum +i;
                }
                    i++;
        }
if(sum==num){
                return 1;
}
else {

  return 0;

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

        int p = perfect(num);
```

```
        if (p==1){

                printf("The given number is a perfect number.");
        }
        else  {
                printf("The number is not a perfect number.");
        }
}
```

Q7.Find factorial of number

```
#include<stdio.h>
int factorial(int num){

        int fact=1 , i;

        i=num;
        while(i>0){

                fact=fact*i;
                i--;
        }

        return fact;
}
void main(){
        int num;
                printf("Enter the number:");
        scanf("%d",&num);
```

```
	int fr = factorial(num);

	printf("The factorial of the given number is:%d",fr);
}
```

8. Check number is strong or not

```
#include<stdio.h>
int strong(int num){

	int rem, i , fact ,temp;
	int sum = 0;
	temp = num;
	while(temp>0)
		rem = temp%10;

		fact=1;

		for(i=1;i<=rem;i++){

			fact= fact*i;
		}

		sum = sum+fact;
		temp = temp/10;
	}
	if(sum==num){
			return 1;
	}
	else{
```

```
return 0;

                        }
}

void main(){
            int num;
            printf("Enter the number:");
            scanf("%d",&num);
            int s = strong(num);
            if(s==1){
                        printf("The number is a strong number");
            }
            else{

                        printf("The number is not a strong number.");
            }
}
```

Q9 Check the given number is palindrome or not?

```
#include<stdio.h>
int palindrome (int num){
                        int rem,rev=0;

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

```
        return rev;
}

void main(){
        int num=6342;
        int p = palindrome(num);

        printf("Palindrome of the given number :%d",p);
}
```

Q10.Add the (first and last) digit of a given number?

```
#include<stdio.h>
int addition(int num){
        int  a , b,sum;
        a = num%10;
        b=num;
        while(b>=10){

                b = b/10;
        }
        sum = a+b;
        return sum;
}
void main(){
        int num;
        printf("Enter the number:");
        scanf("%d",&num);

        int a = addition(num);
        printf("Sum of the last and the first digit in the number is:%d",a);
}
```

3. **Convert Ass_4 into two type of function i.e. w/o parameter, w/o return type and with parameter and w/o return type**.

Type 1

Q1Calculate the armstrong numbers in a given range

```
#include<stdio.h>

void armstrong(){

    int i ,range;

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

    int temp,count,rem,m,sum;
    int tempcount;

    for (i=1;i<=range;i++)
    {
        temp=i;

        count=0;
    while(temp>0){

        count++;
        temp=temp/10;
    }

    temp = i;
    sum=0;
```

```
        while(temp>0){

                rem = temp%10;
                tempcount=count;

                m=1;
                while(tempcount>0){

                        m = m*rem;
                        tempcount--;
                }

                sum = sum+m;
                temp=temp/10;
        }


        if(sum==i){

                printf("\n%d",i);



        }

   }

}
void main(){

          armstrong();
}
```

Q2.prime number

```
#include<stdio.h>
void prime_num(){
   int a, b, num, i, flag;

   printf("Enter the range : ");
   scanf("%d %d", &a, &b);
    printf("The prime numbers between the given range are:");
   for(num = a; num <= b; num++) {
      flag = 0;

      for(i = 2; i <= num / 2; i++) {
         if(num % i == 0) {
            flag = 1;
            break;
         }
      }
      if(flag == 0 ) {
               printf("%d ", num);
      }
   }

}
void main(){
                        prime_num();
}
```

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

```
#include<stdio.h>

void perfect_num() {
   int  range, num, sum,i;

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

   for (num = 1; num <= range; num++) {
      sum = 0;

      for (i = 1; i <= num/2; i++) {
         if (num % i == 0) {
            sum = sum+ i;
         }
      }


      if (sum == num ) {
         printf("%d ", num);
      }
   }

   printf("\n");
}
void main(){

            perfect_num();
}
```

Q4 Strong number

```
#include<stdio.h>
void strong_num() {
	int  b, num,i,temp;
	int sum;
	printf("Enter the range : ");
	scanf("%d",&b);
	int rem,fact;
	for (num = 1; num <= b; num++) {
		temp = num;
		sum=0;
		while (temp > 0) {
			rem = temp % 10;
			fact = 1;
			while(rem>0) {
				fact = fact * rem;
			rem--;
			}
			sum =sum + fact;
			temp =temp/ 10;
		}
		if (sum == num) {
			printf("\n%d", num);
		}
	}
}
void main(){
		strong_num();
}
```

Type 3

Q1Calculate the armstrong numbers in a given range

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

	armstrong(range);
	}

void armstrong(int range){
	int i;
	int temp,count,rem,m,sum;
	int tempcount;
	for (i=1;i<=range;i++)
	{
		temp=i;
		count=0;
	while(temp>0){
			count++;
		temp=temp/10;
	}
	temp = i;
	sum=0;
	while(temp>0){
		rem = temp%10;
		tempcount=count;
				m=1;
```

```
            while(tempcount>0){

                        m = m*rem;
                        tempcount--;
                }
                sum = sum+m;
                temp=temp/10;
        }
        if(sum==i){
                        printf("\n%d",i);
}
   }
}
```

Q2 prime number

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

void prime(int num){
   int  num, i, flag;

   printf("The prime numbers between the given range are:");
   for(num = a; num <= b; num++) {
      flag = 0;
    for(i = 2; i <= num / 2; i++) {
```

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

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

```
#include<stdio.h>
void main(){
                    int  range;
   printf("Enter the range : ");
   scanf(" %d",&range);
          armstrong(range);
          }
void armstrong(int range) {
          int num, sum,i;
  for (num = 1; num <= range; num++) {
      sum = 0;
      for (i = 1; i <= num/2; i++) {
         if (num % i == 0) {
            sum = sum+ i;
         }
      }
 if (sum == num ) {
        printf("%d ", num);
```

```
    }
  }
  printf("\n");
}
```

Q4.Strong number

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

        int b;
        printf("Enter the range : ");
        scanf("%d",&b);

        strong(b);
}
void strong(int range) {

        int b, num,i,temp;

        int sum;
      int rem,fact;
        for (num = 1; num <= b; num++) {
                temp = num;
                sum=0;
                while (temp > 0) {
                        rem = temp % 10;
                        fact = 1;
                        while(rem>0) {
                                fact = fact * rem;
                                rem--;
```

```
}
                    sum =sum + fact;
                    temp =temp/ 10;
                }
                if (sum == num) {
                    printf("\n%d", num);
                }
        }
}
```