Assignment 5

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

Assignment 1

Function Type 1

Q1.Finding F from C (temp).

```
#include <stdio.h>
void ftoc(){
	float c = 30;
	float f;

	f = (c*9/5)+32;

	printf("Temperature in fahrenheit is: %.2f",f);
}
int main()
{
	ftoc();
}
```

2. Finding area and perimeter of rectangle or circle.

```
//Finding area and perimeter of rectangle or circle.
void circle(){
	float length = 5, breadth = 3, radius = 4, PI = 3.14159;
	float area, perimeter;
	   area = PI*radius*radius;
		printf("Area of circle is: %.2f\n", area);
		perimeter = 2*PI*radius;
		printf("Perimeter of circle is: %.2f\n", perimeter);
}
void rectangle(){
	float length = 5, breadth = 3, radius = 4, PI = 3.14159;
	float area, perimeter;
	   area = length*breadth;
		printf("Area of rectangle is: %.2f\n", area);
		perimeter = 2*(length + breadth);
		printf("Perimeter of rectangle is: %.2f", perimeter);
}
void main(){

	circle();
	rectangle();
}
```

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

```
//Accept a 3 digit number from user and find the sum of the digits and also reverse the
number
void sum();
void reverse();
void main(){

	reverse();
	sum();
}
void sum(){
	int num = 123;
	int sum, a, b, c;

	a = num%10;
	num = num/10;
	b = num%10;
	c = num/10;

	sum = a + b + c;
	printf("Sum of number: %d\n", sum);
}

void reverse(){
	int num = 123;
	int a, b, c, rev;

	a = num%10;
	num = num/10;
	b = num%10;
	c = num/10;
	rev = (a*100) + (b*10) + c;
	printf("Reverse of number: %d\n", rev);
}
```

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

```
//Check if the given number is even or odd
void even_odd(){
	int num = 28;

	if(num%2==0){
		printf("Number is Even");
	}else{
		printf("Number is Odd");
	}
}
```

```
int 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.

```
void basic_salary();

void basic_salary()
{
	int da, ta, hra;
	int basic = 6000;
	int total_salary;

	if(basic<=5000){
		da = (basic*10)/100;
		ta = (basic*20)/100;
		hra = (basic*25)/100;
	}else{
		da = (basic*15)/100;
		ta = (basic*25)/100;
		hra = (basic*30)/100;
	}
	total_salary = basic + da + ta + hra;
	printf("Total Salary: %d", total_salary);
}
void main()
{
	basic_salary();
}
```

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

```
//Write a program to check if person is eligible to marry or not (male age >=21 and female age>=18)
int eligible_for_marriage(){
	int age = 20;
	char gender = 'M';

	if(gender == 'M'){
		if(age>=21){
			printf("Male is eligible for marriage");
		}else{
			printf("Male is not eligible for marriage");
```

```
            }

        }else {
            if(gender == 'F'){
                if(age>=18){
                    printf("Female is eligible for marriage");
                }else{
                printf("Female is not eligible for marriage");
            }
            }
        }
}
int main(){
        eligible_for_marriage();
}
```

Function Type 2

1. **Finding F from C (temp).**

```
//Finding F from C (temp)
float c_to_f();

void main()
{
    float fahrenheit=c_to_f();
   printf("%f", fahrenheit);

}
float c_to_f()
{
    float c = 30;
    float f;

    return (c*9/5)+32;
}
```

2. **Finding area and perimeter of rectangle or circle.**

```
//Finding area and perimeter of rectangle or circle.
float a();
float p();

void main()
{
    float area = area();
    printf("%f\n", area);
    float perimeter = perimeter();
    printf("%f", perimeter);
```

```
}

float area()
{
    float length = 5, breadth = 3, radius = 4, PI = 3.14159;
    int choice = 1;
    float area;
    if(choice==1){
            return length*breadth;
    }else if(choice==2)
            return PI*radius*radius;

}
float perimeter()
{
    float length = 5, breadth = 3, radius = 4, PI = 3.14159;
    int choice = 2;
    float perimeter;
    if(choice==1)
    return 2*(length + breadth);
    else if(choice==2)
    return 2*PI*radius;
}
```

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

```
//Accept a 3 digit number from user and find the sum of the digits and also reverse the
number
int sum();
int reverse();
void main(){

    int r = reverse();
    printf("%d\n", r);
    int s = sum();
    printf("%d", s);
}
int sum(){
    int num = 123;
    int sum, a, b, c;

    a = num%10;
    num = num/10;
    b = num%10;
    c = num/10;
```

```
    sum = a + b + c;
    return sum;
}

int reverse(){
    int num = 123;
    int a, b, c, rev;

    a = num%10;
    num = num/10;
    b = num%10;
    c = num/10;
    rev = (a*100) + (b*10) + c;
    return rev;
}
```

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

```
//Check if the given number is even or odd.
int even_odd();
int main()
{
    if(even_odd())
    printf("even");
    else
    printf("odd");
}
int even_odd()
{
    int num = 28;

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

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.**

```
//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 basic_salary();
```

```
int basic_salary()
{
    int da, ta, hra;
    int basic = 6000;
    int total_salary;

    if(basic<=5000){
            da = (basic*10)/100;
            ta = (basic*20)/100;
            hra = (basic*25)/100;
    }else{
            da = (basic*15)/100;
            ta = (basic*25)/100;
            hra = (basic*30)/100;
    }
    total_salary = basic + da + ta + hra;
    return total_salary;
}
void main()
{
    int salary = basic_salary();
    printf("%d", salary);
}
```

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

```
//Write a program to check if person is eligible to marry or not (male age >=21 and
female age>=18)
int eligible_for_marriage(){
    int age = 20;
    char gender = 'M';

    if(gender == 'M'){
            if(age>=21){
                    return 1;
            }else{
                    return 0;
            }

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

```
            }
            }
    }
}
int main(){
    if (eligible_for_marriage())
    printf("Eligible for marriage");
    else
    printf("Not eligible for marriage");
}
```

Function Type 3

1. Finding F from C (temp).

```
//Finding F from C (temp).
#include <stdio.h>
void ftoc();
void main()
{
    int c;
    printf("Enter celcius:");
    scanf("%d", &c);
    ftoc(c);
}
void ftoc(int c){

    float f;

    f = (c*9/5)+32;

    printf("Temperature in fahrenheit is: %f",f);
}
```

2. Finding area and perimeter of rectangle or circle.

```
//Finding area and perimeter of rectangle or circle.
void circle(float radius){
    float PI = 3.14159;
    float area, perimeter;
       area = PI*radius*radius;
            printf("Area of circle is: %.2f\n", area);
            perimeter = 2*PI*radius;
            printf("Perimeter of circle is: %.2f\n", perimeter);
}
void rectangle(float length, float breadth){
    float area, perimeter;
       area = length*breadth;
            printf("Area of rectangle is: %.2f\n", area);
```

```
        perimeter = 2*(length + breadth);
        printf("Perimeter of rectangle is: %.2f\n", perimeter);
}
void main(){
    float length, breadth, radius;
    printf("Enter length and breadth : ");
    scanf("%f, %f", &length, &breadth);
    rectangle(length, breadth);

    printf("Enter radius : ");
    scanf("%f", &radius);
    circle(radius);
}
```

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

```
//Accept a 3 digit number from user and find the sum of the digits and also reverse the
number
void sum();
void reverse();
void main(){
    int num;
    printf("Enter a number:");
    scanf("%d", &num);
    reverse(num);
    sum(num);
}
void sum(int num){
    int sum, a, b, c;

    a = num%10;
    num = num/10;
    b = num%10;
    c = num/10;

    sum = a + b + c;
    printf("Sum of number: %d\n", sum);
}

void reverse(int num){
    int a, b, c, rev;

    a = num%10;
    num = num/10;
    b = num%10;
```

```
    c = num/10;
    rev = (a*100) + (b*10) + c;
    printf("Reverse of number: %d\n", rev);
}
```

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

```
//Check if the given number is even or odd
void even_odd(int num){


    if(num%2==0){
            printf("Number is Even");
    }else{
            printf("Number is Odd");
    }
}
int main()
{
    int num=28;
    even_odd(9);
}
```

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 basic_salary();

void basic_salary(int basic)
{
    int da, ta, hra;
    int total_salary;

    if(basic<=5000){
            da = (basic*10)/100;
            ta = (basic*20)/100;
            hra = (basic*25)/100;
    }else{
            da = (basic*15)/100;
            ta = (basic*25)/100;
            hra = (basic*30)/100;
    }
    total_salary = basic + da + ta + hra;
    printf("Total Salary: %d", total_salary);
}
void main()
{
```

```
    int basic;
    printf("Enter basic amount: ");
    scanf("%d", &basic);  // it will not take the value given by the user as we have
declared the value in the function
    basic_salary(6000);  //the value that we pass in the funcion is considered for operation
}
```

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

```
//Write a program to check if person is eligible to marry or not (male age >=21 and
female age>=18)
int eligible_for_marriage(int age, char gender){



    if(gender == 'M'){
            if(age>=21){
                    printf("Male is eligible for marriage");
            }else{
                    printf("Male is not eligible for marriage");
            }

    }else {
            if(gender == 'F'){
                    if(age>=18){
                            printf("Female is eligible for marriage");
                    }else{
                    printf("Female is not eligible for marriage");
            }
            }
    }
}
int main(){
    int age;
    char gender;
    eligible_for_marriage(20, 'F');
}
```

Function Type 4

1. Finding F from C (temp)

```
//Finding F from C (temp)
float c_to_f(float);
void main()
{
    float c;
    printf("Enter the value for c:");
```

```
    scanf("%f", &c);
    float f = c_to_f(c);
    printf("%f", f);
}
float c_to_f(float c)
{
    return (c*9/5)+32;
}
```

2. Finding area and perimeter of rectangle or circle.

```
//Finding area and perimeter of rectangle or circle.
float circle(int, float);
float rectangle(int, float, float);
void main(){
    float length, breadth, radius;
    int choice;
    printf("Enter choice : \n");
    scanf("%d", &choice);
    printf("Enter length and breadth : \n");
    scanf("%f, %f", &length, &breadth);

    float rec = rectangle(choice, length, breadth);
    printf("%f",rec);

    printf("Enter choice : \n");
    scanf("%d", &choice);
    printf("Enter radius : \n");
    scanf("%f", &radius);

    float cir = circle(choice, radius);
    printf("%f", cir);
}
float circle(int choice, float radius){
    float PI = 3.14159;
    float area, perimeter;
    if(choice == 1){
            area = PI*radius*radius;
            return area;
    }else if(choice == 2){
            perimeter = 2*PI*radius;
            return perimeter;
    }
}
float rectangle(int choice,float length, float breadth){
    float area, perimeter;
```

```
    if(choice == 1){
            area = length*breadth;
            return area;
    }else if(choice == 2){
            perimeter = 2*(length + breadth);
            return perimeter;
    }
}
```

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

```
//Accept a 3 digit number from user and find the sum of the digits and also reverse the
number
int sum(int);
int reverse(int);
void main(){
    int num;
    printf("Enter a number:");
    scanf("%d", &num);
    int rev = reverse(num);
    printf("%d\n", rev);
    int s = sum(num);
    printf("%d", s);
}
int sum(int num){
    int sum, a, b, c;

    a = num%10;
    num = num/10;
    b = num%10;
    c = num/10;

    sum = a + b + c;
    return sum;
}

int reverse(int num){
    int a, b, c, rev;

    a = num%10;
    num = num/10;
    b = num%10;
    c = num/10;
    rev = (a*100) + (b*10) + c;
    return rev;
```

```
}
```

4. Check if the given number is even or odd

```
//Check if the given number is even or odd
int even_odd(int num){

    if(num%2==0){
            return 1;
    }else{
            return 0;
    }
}
int main()
{
    int num;
    printf("Enter a number: ");
    scanf("%d", &num);
    int res = even_odd(num);
    if(res)
    printf("Even");
    else
    printf("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.

```
int basic_salary(int);

int basic_salary(int basic)
{
    int da, ta, hra;
    int total_salary;

    if(basic<=5000){
            da = (basic*10)/100;
            ta = (basic*20)/100;
            hra = (basic*25)/100;
    }else{
            da = (basic*15)/100;
            ta = (basic*25)/100;
            hra = (basic*30)/100;
    }
    total_salary = basic + da + ta + hra;
    printf("Total Salary: %d", total_salary);
}
```

```
void main()
{
    int basic;
    printf("Enter basic amount: ");
    scanf("%d", &basic);  // it will not take the value given by the user as we have
declared the value in the function
    basic_salary(6000);  //the value that we pass in the funcion is considered for operation
}
```

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

```
//Write a program to check if person is eligible to marry or not (male age >=21 and
female age>=18)
char eligible_for_marriage(int age, char gender){

    if(gender == 'M'){
            if(age>=21){
                    return 'Y';
            }else{
                    return 'N';
            }

    }else {
            if(gender == 'F'){
                    if(age>=18){
                            return 'Y';
                    }else{
                    return 'N';
            }
            }
    }
}
int main(){
    int age;
    char gender;
    char ch = eligible_for_marriage(20, 'F');
    printf("%c", ch);
}
```

Assignment 2

Function Type 1

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

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

void discount();
```

```
void main(){
    discount();
}
void discount(){
    int price = 500;
    float discount;
    float finalprice;

    if(price<=500){
            discount = price*0.1;
    }else if(price>500 && price<=1000){
            discount = price*0.2;
    }else if(price>1000 && price<=2000){
            discount = price*0.25;
    }
    finalprice = price-discount;
    printf("Final Price = %.2f", finalprice);
}
```

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

```
//Write a program to find greatest of three numbers using nested if-else.
void greatest()
{
    int a=10, b=30, c=20;

    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 grater");
            }
    }
}
void main(){
    greatest();
}
```

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

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


    char sy = '%';
    int a = 20, b = 10;
    int c;

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

}
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.**

```
//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 even_odd()
{
    int a = 10;
    if(a%2==0){
                printf("a is even\n");
            }else{
                printf("a is odd\n");
            }
}
void basic_salary()
{
```

```
    int basicSalary = 5000;
    float ba, ta ,hra;
    float totalSalary;
    if(basicSalary<=5000){
                ba = basicSalary * 0.1;
                ta = basicSalary * 0.15;
                hra = basicSalary * 0.2;
        }else{
                ba = basicSalary * 0.15;
                ta = basicSalary * 0.20;
                hra = basicSalary * 0.25;
        }
        totalSalary = basicSalary + ba + ta + hra;
        printf("Total Salary is : %.2f", totalSalary);
}
void main()
{
    even_odd();
    basic_salary();
}
```

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 is_student()
{
    float price = 200;
    float discount;
    float finalPrice;
    char isStudent = 'N';

    if (isStudent == 'Y'){
        if (price>=500){
            discount = price * 0.2;
        }else{
            discount = price * 0.1;
        }
    }else{
        if (price>=600){
            discount = price * 0.15;
        }else{
            discount = price * 0;
        }
    }
```

```
    finalPrice = price - discount;
    printf("Final Price is: %.2f", finalPrice);
}
void main()
{
    is_student();
}
```

Function Type 2

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

```
//Find the price of item when discount is given (specify different discount based on price)
float discount();
void main(){
    float fp = discount();
    printf("Final Price is %f", fp);
}
float discount()   //if return statement is void, it will not return anything and error will occur
{
    int price = 500;
    float discount;
    float finalprice;

    if(price<=500){
            discount = price*0.1;
    }else if(price>500 && price<=1000){
            discount = price*0.2;
    }else if(price>1000 && price<=2000){
            discount = price*0.25;
    }
    finalprice = price-discount;
    //no return statement given
}
```

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

```
//Write a program to find greatest of three numbers using nested if-else
int greater_than();
void main()
{
    int greatest = greater_than();
    printf("The geratest of three numbers is: %d", greatest);
}
int greater_than()
{
    int a=10, b=30, c=20;
```

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

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

}
```

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

```
//Accept two numbers from user and an operator (+,-,/,*,%) based on that perform the desired operations
int operators();
void main()
{
    int a = operators();
    printf("The result is: %d", a);
}
int operators()
{
    char sy = '+';
    int a = 20, b = 10;


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

```
        return a % b;
    }

}
```

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.**

```
//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();
float basic_salary();
void main()
{
    int b = even_odd();
    if(b)
    printf("Even\n");
    else
    printf("Odd\n");

    float ts = basic_salary();
    printf("Total Salary is : %f", ts);
}
int even_odd()
{
    int a = 10;
    if(a%2==0){
            return 1;
        }else{
            return 0;
        }
}
float basic_salary()
{
    int basicSalary = 5000;
    float ba, ta ,hra;
    float totalSalary;
    if(basicSalary<=5000){
            ba = basicSalary * 0.1;
            ta = basicSalary * 0.15;
            hra = basicSalary * 0.2;
        }else{
            ba = basicSalary * 0.15;
            ta = basicSalary * 0.20;
            hra = basicSalary * 0.25;
```

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

}
```

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**

```
//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 no discount
float is_student();
void main()
{
    float fp = is_student();
    printf("Final Price is: %f", fp);
}
float is_student()
{
    float price = 200;
    float discount;
    float finalPrice;
    char isStudent = 'N';

    if (isStudent == 'Y'){
        if (price>=500){
            discount = price * 0.2;
        }else{
            discount = price * 0.1;
        }
    }else{
        if (price>=600){
            discount = price * 0.15;
        }else{
            discount = price * 0;
        }
    }
    finalPrice = price - discount;
//  printf("Final Price is: %.2f", finalPrice);
}
```

Function Type 3

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

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

void discount();
void main(){
    int price;
    printf("Enter the price:");
    scanf("%d",&price);
    discount(price);
}
void discount(int price){
    float discount;
    float finalprice;

    if(price<=500){
            discount = price*0.1;
    }else if(price>500 && price<=1000){
            discount = price*0.2;
    }else if(price>1000 && price<=2000){
            discount = price*0.25;
    }
    finalprice = price-discount;
    printf("Final Price = %.2f", finalprice);
}
```

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

```
//Write a program to find greatest of three numbers using nested if-else.
void greatest(int a,  int b, int c)
{


    if(a>b)
    {
            if(a>c)
            {
                    printf("a is greater");
            }else{
                    printf("c is greater");
            }

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

```
                printf("c is grater");
            }
    }
}
void main(){
    int a, b , c;
    greatest(10, 20, 30);
}
```

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

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

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

}
void main(){
    int a, b;
    char sy;
    printf("Enter 2 numbers and a operator: ");
    scanf("%d, %d, %c", &a, &b, &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.

```
//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 even_odd(int a)
{
    if(a%2==0){
```

```
                printf("a is even\n");
        }else{
                printf("a is odd\n");
        }
}
void basic_salary(float basicSalary)
{
    float ba, ta ,hra;
    float totalSalary;
    if(basicSalary<=5000){
                ba = basicSalary * 0.1;
                ta = basicSalary * 0.15;
                hra = basicSalary * 0.2;
        }else{
                ba = basicSalary * 0.15;
                ta = basicSalary * 0.20;
                hra = basicSalary * 0.25;
        }
        totalSalary = basicSalary + ba + ta + hra;
        printf("Total Salary is : %.2f", totalSalary);
}
void main()
{
    int a;
    float basicSalary;
    even_odd(24);
    basic_salary(5000);
}
```

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 is_student(float price, char isStudent)
{

    float discount;
    float finalPrice;


    if (isStudent == 'Y'){
        if (price>=500){
                discount = price * 0.2;
        }else{
                discount = price * 0.1;
```

```
        }
    }else{
        if (price>=600){
            discount = price * 0.15;
        }else{
            discount = price * 0;
        }
    }
    finalPrice = price - discount;
    printf("Final Price is: %.2f", finalPrice);
}
void main()
{
    float price;
    char isStudent;
    is_student(800, 'Y');
}
```

Function Type 4

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

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

float discount(int);
void main(){
    int price;
    printf("Enter the price:");
    scanf("%d",&price);
    int dis = discount(price);
    printf("%d", dis);
}
float discount(int price){
    float discount;
    float finalprice;

    if(price<=500){
        discount = price*0.1;
    }else if(price>500 && price<=1000){
        discount = price*0.2;
    }else if(price>1000 && price<=2000){
        discount = price*0.25;
    }
    finalprice = price-discount;
    return finalprice;
}
```

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

```
//Write a program to find greatest of three numbers using nested if-else.
char greatest(int a,  int b, int c)
{
    if(a>b)
    {
            if(a>c)
            {
                    return a;
            }else{
                    return c;
            }

    }else{
            if(b>c){
                    return b;
            }else{
                    return c;
            }
    }
}
void main(){
    int a, b , c;
    int res = greatest(10, 20, 30);
    printf("%d", res);
}
```

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

```
//Accept two numbers from user and an operator (+,-,/,*,%) based on that perform the
desiredoperations
int operators(int a, int b, char sy)
{
    int c;

    if(sy == '+'){
            c = a + b;
    }else if(sy == '-'){
            c = a - b;
    }else if(sy == '*'){
            c = a * b;
    }else if(sy == '/'){
            c = a / b;
    }else if(sy == '%'){
            c = a % b;
```

```
    }
    return c;

}
void main(){
    int a, b;
    char sy;
    printf("Enter 2 numbers and a operator: ");
    scanf("%d, %d, %c", &a, &b, &sy );
    int res = operators(a,b,sy);
    printf("%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

```
//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)
{
    if(a%2==0){
                return 1;
        }else{
                return 0;
        }
}
float basic_salary(float basicSalary)
{
    float ba, ta ,hra;
    float totalSalary;
    if(basicSalary<=5000){
                ba = basicSalary * 0.1;
                ta = basicSalary * 0.15;
                hra = basicSalary * 0.2;
        }else{
                ba = basicSalary * 0.15;
                ta = basicSalary * 0.20;
                hra = basicSalary * 0.25;
        }
        totalSalary = basicSalary + ba + ta + hra;
        return totalSalary;
}
void main()
{
    int a;
    float basicSalary;
```

```
    int res = even_odd(24);
    if(res)
    printf("Even\n");
    else
    printf("Odd\n");
    float bs = basic_salary(5000);
    printf("%f", bs);
}
```

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**

```
float is_student(float price, char isStudent)
{

    float discount;
    float finalPrice;


    if (isStudent == 'Y'){
            if (price>=500){
                    discount = price * 0.2;
            }else{
                    discount = price * 0.1;
            }
    }else{
            if (price>=600){
                    discount = price * 0.15;
            }else{
                    discount = price * 0;
            }
    }
    finalPrice = price - discount;
    return finalPrice;
}
void main()
{
    float price;
    char isStudent;
    float fp = is_student(800, 'Y');
    printf("%f", fp);
}
```

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

Assignment 3

Function Type 1

1. Print numbes from 1 to 10.

```
//Print numbes from 1 to 10.
void numbers()
{
    int a = 1;
    while (a<=10){
            printf("%d\n",a);
            a++;
    }
}
void main(){
    numbers();
}
```

2. Print table for the given number.

```
//Print table for the given number
void table()
{
    int num, a=1, b;
    printf("Enter a 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

```
//Calculate sum of numbers in the given range.
void sum()
{
    int a, b, sum = 0;
    printf("Enter the range of numbers:");
    scanf("%d, %d", &a, &b);
    int i;
```

```
    for(i=a; i<=b; i++)
    sum = sum+i;
    printf("The sum of numbers in a given range is %d",sum);
}
void main()
{
    sum();
}
```

4. Check number is prime or not.

```
//Check number is prime or not.
void is_prime()
{
    int num, i=2, flag = 0;

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

    if (num ==0 || num ==1){
            flag = 1;
    }
    for(i=2; i<=num/2; i++){
            if(num%i==0){
                    flag = 1;
                    break;
            }
    }
    if(flag == 0){
            printf("Number is prime number");
    }else
    printf("Number is not a prime number");
}
void main()
{
    is_prime();

}
```

5. Check number is armstrong or not?

```
//Check number is armstrong or not?
void is_armstrong()
{
    int num, count=0, temp, rem, sum=0;

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

```
    for(temp = num; temp>0; temp= temp/10){
            count++;
    }
    for(temp = num; temp>0; temp = temp/10){
            rem = temp%10;
            int res = 1;
            int i;
            for(i=1; i<=count; i++){
                    res = res*rem;
            }
            sum = sum+res;
    }
    if(num == sum){
            printf("Number is a armstrong number");
    }else
    printf("Not a armstrong number");
}
void main()
{
    is_armstrong();
}
```

6. Check number is perfect or not.

```
//Check number is perfect or not.
void is_perfect()
{
    int i, sum=0, num;
    printf("Enter a number:");
    scanf("%d", &num);
    int j;
for (j=1; j<=num/2; j++){
    if(num%j==0){
            sum = sum + j;
    }
}if(sum==num){
    printf("Number is a prefect number");
}else
    printf("Number is not a perfect number");
}
void main(){
    is_perfect();
}
```

7. Find factorial of number.

```
//Find factorial of number.
```

```
void factorial()
{
    int num, fact=1;
    printf("Enter a number:");
    scanf("%d", &num);

    int i;
    for(i=num; i>0; i--){
            fact = fact * i;
    }
    printf("The factorial of number is %d", fact);
}
void main(){
    factorial();
}
```

8. Check number is strong or not.

```
//Check number is strong or not.
void is_strong()
{
    int num, temp, rem, sum = 0;
    printf("Enter a number: ");
    scanf("%d", &num);
    for(temp = num; temp>0; temp = temp/10){
    rem = temp %10;
    int i;
    int fact = 1;
    for(i=rem; i>0; i--){
            fact = fact * i;
    }
    sum = sum + fact;
}if(sum == num){
            printf("Number is a strong number");
    }else
    printf("Number is not a strong number");
}
void main()
{
    is_strong();
}
```

9. Check the given number is palindrome or not?

```
//Check the given number is palindrome or not?
void is_palindrome()
{
    int num, rev=0, rem, temp;
```

```
    printf("Enter a number: ");
    scanf("%d", &num);
    for(temp = num; num>0; num = num/10){
    rem = num%10;
    rev = rev*10+rem;
    }

    if(rev == temp){
            printf("Number is a palindrome");
    }else
    printf("Number is not a palindrome");
}
void main()
{
    is_palindrome();
}
```

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

```
//Add the (first and last) digit of a given number
void add()
{
    int num, rem, sum;
    printf("Enter a number: ");
    scanf("%d", &num);

            rem = num%10;
            int temp = num;
            while(temp>=10){
                    temp = temp/10;
    }
            sum = rem+temp;
    printf("The sum of first and last digit of the number is: %d", sum);
}
void main()
{
    add();
}
```

Function Type 2

3. Calculate sum of numbers in the given range.

```
//Calculate sum of numbers in the given range.
int add()
{
    int a, b, sum = 0;
    printf("Enter the range of numbers:");
    scanf("%d, %d", &a, &b);
```

```
    int i;
    for(i=a; i<=b; i++)
    sum = sum+i;
    return sum;
//  printf("The sum of numbers in a given range is %d",sum);
}
void main()
{
    int sum = add();
    printf("The sum of numbers in agiven range is %d", sum);
}
```

4. Check number is prime or not.

```
//Check number is prime or not.
int is_prime()
{
    int num, i=2, flag = 0;

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

    if (num ==0 || num ==1){
            flag = 1;
    }
    for(i=2; i<=num/2; i++){
            if(num%i==0){
                    flag = 1;
                    break;
            }
    }
    if(flag == 0){
            return 1;
    }else
    return 0;
}
void main()
{
  int prime = is_prime();
  if(prime)
  printf("Prime number");
  else
  printf("Not Prime number");

}
```

5. Check number is armstrong or not?

```
//Check number is armstrong or not?
int is_armstrong()
{
    int num, count=0, temp, rem, sum=0;

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

    for(temp = num; temp>0; temp= temp/10){
            count++;
    }
    for(temp = num; temp>0; temp = temp/10){
            rem = temp%10;
            int res = 1;
            int i;
            for(i=1; i<=count; i++){
                    res = res*rem;
            }
            sum = sum+res;
    }
    if(num == sum){
            return 1;
    }else
    return 0;
}
void main()
{
  int a=is_armstrong();
    if(a){
            printf("Number is a armstrong number");
    }else
    printf("Not a armstrong number");
}
```

6. Check number is perfect or not

```
//Check number is perfect or not.
int is_perfect()
{
    int sum=0, num;
    printf("Enter a number:");
    scanf("%d", &num);
    int j;
for (j=1; j<=num/2; j++){
    if(num%j==0){
            sum = sum + j;
```

```
    }
}if(sum==num){
    return 1;
}else
    return 0;
}
void main(){
    int a = is_perfect();
    if(a){
    printf("Number is a prefect number");
}else
    printf("Number is not a perfect number");
}
```

7. Find factorial of number.

```
//Find factorial of number.
int factorial()
{
    int num, fact=1;
    printf("Enter a number:");
    scanf("%d", &num);

    int i;
    for(i=num; i>0; i--){
            fact = fact * i;
    }
    return fact;
}
void main(){
    int fact = factorial();
    printf("The factorial of number is %d", fact);
}
```

8. Check number is strong or not.

```
//Check number is strong or not.
int is_strong()
{
    int num, temp, rem, sum = 0;
    printf("Enter a number: ");
    scanf("%d", &num);
    for(temp = num; temp>0; temp = temp/10){
    rem = temp %10;
    int i;
    int fact = 1;
    for(i=rem; i>0; i--){
            fact = fact * i;
```

```
    }
    sum = sum + fact;
}if(sum == num){
            return 1;
    }else
    return 0;
}
void main()
{
    int res = is_strong();
    if(res){
            printf("Number is a strong number");
    }else
    printf("Number is not a strong number");
}
```

9. Check the given number is palindrome or not?

```
//Check the given number is palindrome or not?
int is_palindrome()
{
    int num, rev=0, rem, temp;
    printf("Enter a number: ");
    scanf("%d", &num);
    for(temp = num; num>0; num = num/10){
    rem = num%10;
    rev = rev*10+rem;
    }

    if(rev == temp){
            return 1;
    }else
    return 0;
}
void main()
{
    int p = is_palindrome();
    if(p){
            printf("Number is a palindrome");
    }else
    printf("Number is not a palindrome");
}
```

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

```
//Add the (first and last) digit of a given number
int add()
{
```

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

            rem = num%10;
            int temp = num;
            while(temp>=10){
                    temp = temp/10;
    }
            sum = rem+temp;
    return sum;
}
void main()
{
    int sum = add();
    printf("The sum of first and last digit of the number is: %d", sum);
}
```

Function Type 3

1. Print numbers from 1 to 10.

```
//Print numbers from 1 to 10.
void numbers(int a)
{
//  int a = 1;
    while (a<=10){
            printf("%d\n",a);
            a++;
    }
}
void main(){
    int a;
    numbers(1);
}
```

2. Print table for the given number.

```
//Print table for the given number
void table(int num)
{
    int a=1, b;
    printf("Enter a number:");
    scanf("%d", &num);

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

```
    }
}
void main()
{
    int num;
    printf("Enter a number:");
    scanf("%d", &num);   //if there are 2 print statements then it will take the one that is
mentioned in the called function
    table(num);
}
```

3. Calculate sum of numbers in the given range.

```
//Calculate sum of numbers in the given range.
void sum(int a, int b)
{
    int sum = 0;
    int i;
    for(i=a; i<=b; i++)
    sum = sum+i;
    printf("The sum of numbers in a given range is %d",sum);
}
void main()
{
    int a, b;
    printf("Enter the range of numbers:");
    scanf("%d, %d", &a, &b);

    sum(a,b);
}
```

4. Check number is prime or not.

```
//Check number is prime or not.
void is_prime(int num)
{
    int i=2, flag = 0;

    if (num ==0 || num ==1){
            flag = 1;
    }
    for(i=2; i<=num/2; i++){
            if(num%i==0){
                    flag = 1;
                    break;
            }
    }
    if(flag == 0){
```

```
        printf("Number is prime number");
    }else
    printf("Number is not a prime number");
}
void main()
{
    int num;
    printf("Enter a number:");
    scanf("%d", &num);
    is_prime(num);

}
```

5. Check number is armstrong or not?

```
//Check number is armstrong or not?
void is_armstrong(int num)
{
    int count=0, temp, rem, sum=0;

    for(temp = num; temp>0; temp= temp/10){
        count++;
    }
    for(temp = num; temp>0; temp = temp/10){
        rem = temp%10;
        int res = 1;
        int i;
        for(i=1; i<=count; i++){
            res = res*rem;
        }
        sum = sum+res;
    }
    if(num == sum){
        printf("Number is a armstrong number");
    }else
    printf("Not a armstrong number");
}
void main()
{
    int num;
    printf("Enter the number");
    scanf("%d", &num);
    is_armstrong(num);
}
```

6. Check number is perfect or not.

```
//Check number is perfect or not.
```

```
void is_perfect(int num)
{
    int i, sum=0;

    int j;
for (j=1; j<=num/2; j++){
    if(num%j==0){
            sum = sum + j;
    }
}if(sum==num){
    printf("Number is a prefect number");
}else
    printf("Number is not a perfect number");
}
void main(){
    int num;
    printf("Enter a number:");
    scanf("%d", &num);
    is_perfect(num);
}
```

7. Find factorial of number

```
//Find factorial of number.
void factorial(int num)
{
    int fact=1;
    int i;
    for(i=num; i>0; i--){
            fact = fact * i;
    }
    printf("The factorial of number is %d", fact);
}
void main(){
    int num;
    printf("Enter a number:");
    scanf("%d", &num);
    factorial(num);
}
```

8. Check number is strong or not.

```
//Check number is strong or not.
void is_strong(int num)
{
    int temp, rem, sum = 0;

    for(temp = num; temp>0; temp = temp/10){
```

```
    rem = temp %10;
    int i;
    int fact = 1;
    for(i=rem; i>0; i--){
            fact = fact * i;
    }
    sum = sum + fact;
}if(sum == num){
            printf("Number is a strong number");
    }else
    printf("Number is not a strong number");
}
void main()
{
    int num;
    printf("Enter a number: ");
    scanf("%d", &num);
    is_strong(num);
}
```

9. Check the given number is palindrome or not?

```
//Check the given number is palindrome or not?
void is_palindrome(int num)
{
    int rev=0, rem, temp;

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

    if(rev == temp){
            printf("Number is a palindrome");
    }else
    printf("Number is not a palindrome");
}
void main()
{
    int num;
    printf("Enter a number: ");
    scanf("%d", &num);
    is_palindrome(num);
}
```

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

```
//Add the (first and last) digit of a given number
```

```
void add(int num)
{
    int rem, sum;
            rem = num%10;
            int temp = num;
            while(temp>=10){
                    temp = temp/10;
    }
            sum = rem+temp;
    printf("The sum of first and last digit of the number is: %d", sum);
}
void main()
{
    int num;
    printf("Enter a number: ");
    scanf("%d", &num);
    add(num);
}
```

Function Type 4

4. Check number is prime or not.

```
//Check number is prime or not.
int is_prime(int);
int is_prime(int num)
{
    int i=2, flag = 0;

    if (num ==0 || num ==1){
            flag = 1;
    }
    for(i=2; i<=num/2; i++){
            if(num%i==0){
                    flag = 1;
                    break;
            }
    }
    if(flag == 0){
            return 1;
    }else
    return 0;
}
void main()
{
    int num;
    printf("Enter a number:");
```

```
    scanf("%d", &num);
    int prime = is_prime(num);
    if(prime)
    printf("Prime Number");
    else
    printf("Not Prime Number");

}
```

5. Check number is armstrong or not?

```
//Check number is armstrong or not?
int is_armstrong(int num)
{
    int count=0, temp, rem, sum=0;

    for(temp = num; temp>0; temp= temp/10){
            count++;
    }
    for(temp = num; temp>0; temp = temp/10){
            rem = temp%10;
            int res = 1;
            int i;
            for(i=1; i<=count; i++){
                    res = res*rem;
            }
            sum = sum+res;
    }
    if(num == sum){
            return 1;
    }else
    return 0;
}
void main()
{
    int num;
    printf("Enter the number: ");
    scanf("%d", &num);
    int res = is_armstrong(num);
    if(res)
    printf("Armstrong number");
    else
    printf("Not Armstrong");
}
```

6. Check number is perfect or not

```
//Check number is perfect or not.
```

```
int is_perfect(int num)
{
    int i, sum=0;

    int j;
for (j=1; j<=num/2; j++){
    if(num%j==0){
            sum = sum + j;
    }
}if(sum==num){
    return 1;
}else
    return 0;
}
void main(){
    int num;
    printf("Enter a number:");
    scanf("%d", &num);
    int res = is_perfect(num);
    if(res){
    printf("Number is a prefect number");
}else
    printf("Number is not a perfect number");
}
```

7. Find factorial of number.

```
//Find factorial of number.
int factorial(int num)
{
    int fact=1;
    int i;
    for(i=num; i>0; i--){
            fact = fact * i;
    }
    return fact;
}
void main(){
    int num;
    printf("Enter a number:");
    scanf("%d", &num);
    int res = factorial(num);
    printf("The factorial of number is %d", res);
}
```

8. Check number is strong or not.

```
//Check number is strong or not.
```

```
int is_strong(int num)
{
    int temp, rem, sum = 0;

    for(temp = num; temp>0; temp = temp/10){
    rem = temp %10;
    int i;
    int fact = 1;
    for(i=rem; i>0; i--){
            fact = fact * i;
    }
    sum = sum + fact;
}if(sum == num){
            return 1;
    }else
    return 0;
}
void main()
{
    int num;
    printf("Enter a number: ");
    scanf("%d", &num);
    int res = is_strong(num);
    if(res){
            printf("Number is a strong number");
    }else
    printf("Number is not a strong number");
}
```

9. Check the given number is palindrome or not?

```
//Check the given number is palindrome or not?
int is_palindrome(int num)
{
    int rev=0, rem, temp;

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

    if(rev == temp){
            return 1;
    }else
    return 0;
}
```

```
void main()
{
    int num;
    printf("Enter a number: ");
    scanf("%d", &num);
    int res = is_palindrome(num);
    if(res){
            printf("Number is a palindrome");
    }else
    printf("Number is not a palindrome");
}
```

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

```
//Add the (first and last) digit of a given number
int add(int num)
{
    int rem, sum;
            rem = num%10;
            int temp = num;
            while(temp>=10){
                    temp = temp/10;
    }
            sum = rem+temp;
    return sum;
}
void main()
{
    int num;
    printf("Enter a number: ");
    scanf("%d", &num);
    int res = add(num);
    printf("The sum of first and last digit of the number is: %d", res);
}
```

Q3. 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

Assignment 4

Function Type 1

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

```
//Print armstrong number in the the given range 1 to n?
void armstrong()
{
            int range,i;

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

```
    int temp, rem, sum , mul;

    int tempcount;
    for(i=1; i<=range;i++){
            temp =i;
      int  count=0;
    while(temp>0){

            count++;
            temp=temp/10;
    }

    temp = i;
    sum = 0;
    while(temp>0){

            rem = temp%10;
            tempcount=count;

            mul=1;
            while(tempcount>0){

                    mul = mul*rem;
                    tempcount--;
            }

            sum = sum+mul;
            temp=temp/10;
    }
    if(sum==i)
    printf("%d\n", i);
    }
}
void main()
{
    armstrong();
}
```

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

```
//Print prime number in the given range 1 to n?
void prime()
{
    int range, i, j, flag;
    printf("Enter the range:");
```

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

    for(i=2;i<=range;i++){

            flag = 0;
            for(j=2;j<=i/2;j++){
                    if(i%j==0)
                    {
                            flag=1;
                            break;
                    }
            }if(flag == 0)
            printf("%d\n",i);
    }
}
void main()
{
    prime();
}
```

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

```
//check perfect number in the given range 1 to n?
void perfect()
{
    int n, i,sum;
    printf("Enter range:");
    scanf("%d", &n);

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

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

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

```
//check strong number in the given range 1 to n?
void strong()
{
    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();
}
```

5. Print fibonacci series?(optional)

```
//Print fibonacci series?(optional)
void fibonacci()
{
    int i, n;
  int t1 = 0, t2 = 1;
  int nextTerm = t1 + t2;

  printf("Enter the number of terms: ");
  scanf("%d", &n);
```

```
  printf("Fibonacci Series: %d, %d, ", t1, t2);

  for (i = 3; i <= n; ++i) {
    printf("%d, ", nextTerm);
    t1 = t2;
    t2 = nextTerm;
    nextTerm = t1 + t2;
  }
}
void main()
{
     fibonacci();
}
```

Function Type 3

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

```
//Print armstrong number in the the given range 1 to n?
void armstrong(int range)
{
        int i;
    int temp, rem, sum , mul;

    int tempcount;
    for(i=1; i<=range;i++){
        temp =i;
      int  count=0;
    while(temp>0){

        count++;
        temp=temp/10;
    }

    temp = i;
    sum = 0;
    while(temp>0){

        rem = temp%10;
        tempcount=count;

        mul=1;
        while(tempcount>0){

            mul = mul*rem;
            tempcount--;
```

```
            }

            sum = sum+mul;
            temp=temp/10;
    }
    if(sum==i)
    printf("%d\n", i);
    }
}
void main()
{
    int range;
    printf("Enter range:");
    scanf("%d",&range);
    armstrong(range);
}
```

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

```
//Print prime number in the given range 1 to n?
void prime(int range)
{
    int i, j, flag;

    for(i=2;i<=range;i++){

            flag = 0;
            for(j=2;j<=i/2;j++){
                    if(i%j==0)
                    {
                            flag=1;
                            break;
                    }
            }if(flag == 0)
            printf("%d\n",i);
    }
}
void main()
{
    int range;
    printf("Enter the range:");
    scanf("%d", &range);
    prime(range);
}
```

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

```
//check perfect number in the given range 1 to n?
```

```
void perfect(int n)
{
    int i,sum;

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

    }
}
void main()
{
    int n;
    printf("Enter range:");
    scanf("%d", &n);
    perfect(n);
}
```

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

```
//check strong number in the given range 1 to n?
void strong(int b)
{
    int 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);
            }
    }
}

void main()
{
    int b;
    printf("Enter the range : ");
    scanf("%d",&b);
    strong(b);
}
```

5. Print fibonacci series?(optional)

```
//Print fibonacci series?(optional)
void fibonacci(int n)
{
    int i;
  int t1 = 0, t2 = 1;
  int nextTerm = t1 + t2;

  printf("Fibonacci Series: %d, %d, ", t1, t2);

  for (i = 3; i <= n; ++i) {
    printf("%d, ", nextTerm);
    t1 = t2;
    t2 = nextTerm;
    nextTerm = t1 + t2;
  }
}
void main()
{
    int n;
    printf("Enter the number of terms: ");
   scanf("%d", &n);
    fibonacci(n);
}
```