C assignments – Day 17 (17-Sept-2022)

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Que1

```c
// Write a program to find the area of the rectangle.
#include <stdio.h>
void main()
{
    int l, b;
    printf("Enter the length and breadth\n");
    scanf("%d%d", &l, &b);
    printf("The area of the rectangle is %d", l * b);
}
```

Que2

```c
// Write a program to read seven float values from the user and find their
average.

#include <stdio.h>
void main(){
    float a,b,c,d,e,f,g,sum,avg;
    printf("Enter 7 float numbers\n");
    scanf("%f%f%f%f%f%f%f",&a,&b,&c,&d,&e,&f,&g);
    sum=a+b+c+d+e+f+g;
    printf("The average of the entered numbers is: %f",sum/7);
}
```

Que3

```c
// Write a program to read marks of the five subjects and display their double.
#include <stdio.h>
void main(){
    int a,b,c,d,e;
    printf("Enter five numbers\n");
    scanf("%d%d%d%d%d",&a,&b,&c,&d,&e);
    printf("Double of the marks are %d %d %d %d %d ", a+a,b+b,c+c,d+d,e+e);
```

```c
// Write a program to find the sum of five entered numbers.
#include <stdio.h>
void main(){
    int a,b,c,d,e,sum;
    printf("Enter five numbers\n");
    scanf("%d%d%d%d%d",&a,&b,&c,&d,&e);
    sum=a+b+c+d+e;
    printf("The sum of the entered 5 numbers is: %d",sum);
}
```

Que5

```c
// Write a program to read the percentage from the user.
// If percentage is > 80, print "distinction".
// If percentage is > 60, print "First Class".
// If percentage is > 50, print "Second Class".
// If percentage is > 40, print "Third Class".
// Otherwise fail.
#include <stdio.h>
void main(){
    int p;
    printf("Enter the percentage\n");
    scanf("%d",&p);
    if(p>=80)
    printf("Distinction");
    else if(p>=60)
    printf("First Class");
    else if(p>=50)
    printf("Second Class");
    else if(p>=40)
    printf("Third Class");
    else
    printf("Fail");
}
```

Que6

```c
// Write a program to find the greatest of six numbers using nested if-else
ladder.
#include <stdio.h>
void main()
{
    int a, b, c, d, e, f;
```

```
    printf("Ennter 6 numbers\n");
    scanf("%d%d%d%d%d%d", &a, &b, &c, &d, &e, &f);
    if (a > b)
    {
        if (a > c)
            if (a > d)
                if (a > e)
                    if (a > f)
                        printf("a is greater.");
    }

    else if (b > c)
    {
        if (b > d)
            if (b > e)
                if (b > f)
                    printf("b is greater");
    }
    else if (c > d)
    {
        if (c > e)
            if (c > f)
                printf("c is greater");
    }
    else if (d > e)
    {
        if (d > f)
            printf("d is greater");
    }
    else if (e > f)
        printf("e is greater ");
    else
        printf("f is the greater");
}
```

Que7

```
// Write a program to read two numbers from the user
//  Case 1 - Print even numbers between the given them in ascending order.
//  case 2 - Print even numbers between the given them in descending order.
//  Case 3 - If the user has given the first numbr as for odd number then print
the number  has to be an even number.
//  Case 4 - Print even number after odd number (10-19)
```

```c
#include <stdio.h>
void main()
{
    int a, b, choice;
    int z = 11;
    int y = 19;
    printf("Enter your numbers\n");
    scanf("%d%d", &a, &b);
    printf("Enter your choice\n");
    scanf("%d", &choice);

    switch (choice)
    {
    case 1:
        if (a > b)
        {
            while (a >= b)
            {
                if (b % 2 == 0)
                {
                    printf("%d\t", b);
                }
                b++;
            }
        }
        else
        {
            while (b >= a)
            {
                if (a % 2 == 0)
                {
                    printf("%d\t", a);
                }
                a++;
            }
        }
        break;

    case 2:
        if (a > b)
        {
            while (a >= b)
            {
                if (a % 2 == 0)
                {
```

```
                    printf("%d\t", a);
                }
                a--;
            }
        }
        else
        {
            while (b >= a)
            {
                if (b % 2 == 0)
                {
                    printf("%d\t", b);
                }
                b--;
            }
        }
        break;

    case 3:
        if (a % 2 == 1)
            printf("The number  has to be an even number.");
        else
            printf("%d", a);
        break;

    case 4:
        while (z < y)
        {
            printf("%d\t", z);
            z++;
        }
        break;

    default:
        printf("Invalid choice");
        break;
    }
}
```

Que7

```
// Write a program to read a number from user and print all the even numbers
using that number. Using while loop and for loop.
#include <stdio.h>
void main(){
```

```
    int a;
    printf("Enter your number\n");
    scanf("%d",&a);
    do
    {
        if (a%2==0)
        printf("%d\t",a);
        a--;
    } while (a>0);
}
```

Que8

```
//Write a program to print all the even numbers up to an entered number
#include <stdio.h>
void main(){
    int a;
    printf("Enter your number\n");
    scanf("%d",&a);
    while (a>0)
    {
        if (a%2==0)
        printf("%d\t",a);
        a--;
    }
}
```

Que9

```
// Print the number of subjects entered for each student.
#include <stdio.h>
void main()
{
    int student, students, subject, subjects;
    printf("Enter the number of students\n");
    scanf("%d", &students);
    printf("How many subjects\n");
    scanf("%d", &subjects);
    student = 1;
    do
    {
        printf("Student %d\n", student);
        subject = 1;
        do
        {
```

```
            printf("\tSubject %d\n ", subject);
            subject++;
        }while (subject <= subjects);
    student++;
    }while (student <= students);
}
```

Que9 with for loop

```
#include <stdio.h>
void main()
{
    int student, students, subject, subjects;
    printf("Enter the number of students\n");
    scanf("%d", &students);
    printf("How many subjects\n");
    scanf("%d", &subjects);
    for (student = 1; student <= students; student++)
    {
        printf("Student %d\n", student);
        subject = 1;
        for (subject; subject <= subjects; subject++)
        {
            printf("\tSubject %d\n ", subject);
        }
    }
}
```

```
// Write a program to read number of students and number of subjects from the
user and and display all the subjects for each students with for loop while loop
and do while loop.

#include <stdio.h>
void main()
{
    int student, students, subject, subjects;
    printf("Enter the number of students\n");
    scanf("%d", &students);
    printf("How many subjects\n");
    scanf("%d", &subjects);
    student = 1;
    while (student <= students)
    {
```

```
        printf("Student %d\n", student);
        subject = 1;
        while (subject <= subjects)
        {
            printf("\tSubject %d\n ", subject);
            subject++;
        }
    student++;
    }
}
```

Que10

```
// Write a program to print the sum of all the natural number upto an entered
number
#include <stdio.h>
void main()
{
    int a, sum = 0;
    printf("Enter your number\n");
    scanf("%d", &a);
    while (a > 0)
    {
        sum += a;
        a--;
    }
    printf("The sum of all the natuaral numbrs upto %d is %d", a, sum);
}
```

Que 11

```
// Write a program to count the digits in a number.
#include <stdio.h>
void main(){
    int num;
    printf("Enter your number\n");
    scanf("%d",&num);
    int count=0;
    while (num>0){
        num/=10;
        count++;
    }
    printf("The number contains %d digits.",count);
}
```

Que 12

```c
// Write a program to calculate how many time a particular digit occurs in a number

#include <stdio.h>
void main(){
    int num,b, digit, counter=0;
    printf("Enter your number\n");
    scanf("%d",&num);
    printf("Enter the digit\n");
    scanf("%d",&digit);
    while (num>0){
        b = num%10;
        if(b==digit){
            counter++;
        }
        num/=10;
    }
    printf("The entered number contains %d %ds",counter,digit);
}
```

Que 13

```c
// Write a program to check if the number is palindrome or not.
#include <stdio.h>
void main()
{
    int a,num,c,reversed_a=0;
    printf("Enter your number\n");
    scanf("%d", &a);
    num = a;
    while (a != 0)
    {
        // The code below is the formula to make reverse of all the positive as well as negative numbers.
        c= a%10;
        reversed_a = reversed_a * 10 + c;
        a/=10;
    }

    if (num == reversed_a)
        printf("Entered number is a palindrome");
    else
        printf("Entered number is not a palindrome");
```

```
}
```

Que14

```
// Write a program to print all the prime numbers between two entered numbers.
#include <stdio.h>
void main()
{
    int a, b, i, sum, b1, a1;
    printf("Enter two numbers\n");
    scanf("%d%d", &a, &b);
    if (a > b)
    {
        for (b; b <= a; b++)
        {
            sum = 0;
            for (i = 1; i <= b / 2; i++)
            {
                if (b % i == 0)
                {
                    sum += i;
                }
            }
            if (sum == b)
                printf("%d \t", b);
        }
    }
    else
    {
        for (a; a <= b; a++)
        {
            sum = 0;
            for (i = 1; i <= a / 2; i++)
            {
                if (a % i == 0)
                {
                    sum += i;
                }
            }
            if (sum == a)
                printf("%d \t", a);
        }
    }
```

```
}
```

Que 15

```
// Write a program to print palindromes between two entered numbers.
#include <stdio.h>
void main()
{
    int a,a1,b,b1, num, c, reversed;
    printf("Enter two  numbers\n");
    scanf("%d%d", &a, &b);
    if (a > b)
    {
        for (b; b <= a; b++)
        {
            num = b;
            reversed = 0;
            b1 = b;
            while (b1 != 0)
            {
                // The code below is the formula to make reverse of all the
positive as well as negative numbers.
                c = b1 % 10;
                reversed = reversed * 10 + c;
                b1 /= 10;
            }
            if (reversed == num)
                printf("%d\t", reversed);
        }
    }
    else
    {
        for (a; a <= b; a++)
        {
            reversed=0;
            num = a;
            a1 = a;
            while (a1 != 0)
            {
                // The code below is the formula to make reverse of all the
positive as well as negative numbers.
                c = a1 % 10;
                reversed = reversed * 10 + c;
                a1 /= 10;
```

```
            }
            if (reversed == num)
                printf("%d\t", reversed);
        }
    }
}
```

Que 16

```
// Write a program to read more than two or two digit numbers and check if the
second last digit is perfect or not.
#include <stdio.h>
void main(){
    int a,i=1,sum=0;
    printf("Enter your number\n",&a);
    scanf("%d",&a);
    while (i<a-1){
        if(a%i==0){
            sum+=i;
        }
        i++;
    }
    if (sum == a)
    printf("The entered number is a perfect number.");
    else
    printf("The given number is not a perfect number.");
}
```

Que 17

```
// Write a program to read a number from user and and find the multiplications of
all its digits and check if the result is perfect or not.
#include <stdio.h>
void main()
{
    int a, b, mult = 1, actual_mult, sum = 0;
    printf("Enter your number\n");
    scanf("%d", &a);
    while (a > 0)
```

```
    {
        b = a % 10;
        a /= 10;
        mult *= b;
    }
    int i = 1;
    while (i < mult - 1)
    {
        if (mult % i == 0)
        {
            sum += i;
        }
        i++;
    }
    if (sum == mult)
        printf("The sum of multiplication of all the digits in the number entered
is a perfect number.");
    else
        printf("The sum of multiplication of all the digits in the number entered
is not a perfect number.");
}
```

Que 18

```
// Write a program to create a function which returns the cube of all  its
digits.
#include <stdio.h>
void printTheCubes(int a)
{
    int b, i = 1;
    while (a > 0)
    {
        b = a % 10;
        a /= 10;
        printf("The cube of digit %d of the number entered is %d\n", i, b * b *
b);
        i++;
    }
}

void main()
{
    int a;
```

```
    printf("Enter your number\n");
    scanf("%d",&a);
    printTheCubes(a);
}
```

Que 19

```
// Write a program to take two numbers from the user and and print factoriel of
all the numbers between these two numbers.
#include <stdio.h>
void main()
{
    int a, b;
    printf("Enter your numbers\n");
    scanf("%d%d", &a, &b);
    if (a > b)
    {
        while (a >= b)
        {
            int c = b, fact = 1;
            while (c > 0)
            {
                fact *= c;
                c--;
            }
            printf("The factoriel of the %d is %d\n", b, fact);
            b++;
        }
    }
    else
    {
        while (a <= b)
        {
            int c = a, fact=1;
            while (c > 0)
            {
                fact *= c;
                c--;
            }
            printf("The factoriel of the %d is %d\n", a, fact);
            a++;
        }
    }
}
```

Que 20

```c
// Write a program to read a number from the user and find the sum of all the
even numbers in them.
#include <stdio.h>
void main(){
    int a,b,sum=0;
    printf("Enter your number\n");
    scanf("%d",&a);
    while(a>0){
        b=a%10;
        if(b%2==0){
           sum+=b;
        }
        a=a/10;
    }
    printf("The sum of all the even digits in the number entered is %d",sum);
}
```