# BACHELOR OF TECHNOLOGY

**B.Tech. CS&E \_\_B\_\_1st Semester ( \_1\_ )**

**( Academic Session – 2021 - 25 )**

**Course Title : Programming in C**

**Course Code : ES202**

**Enrollment No. : A7605221071**

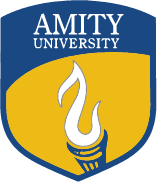
**Name of Student : Shashwat Gupta**

**Date of Submission : \_\_ \_\_ / \_\_ \_\_ /\_\_ \_\_ \_\_ \_\_**

**Signature of Student :**

**Grade/Marks Obtained :**

**Faculty Name & Signature :**



Department of Computer Science & Engineering

Amity School of Engineering & Technology

Amity University, Lucknow Campus

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| 2. | Input principle amount, rate and time and calculate S.I. | 21/09/2021 |  |  |
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**Open-Ended Questions**

|  |  |  |  |  |
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| S.No. | PROGRAMS | Date | Sign | Remark |
| 1. | A library charges a fine for every book returned late. For first 5 days fine is 50 paise, for 6-10 days fine is one rupees and above 10 days fine is 5 rupees. If you return the books after 30 days your membership will be cancelled. Write a program to accept the number of days the member is late to return the book and display the fine or appropriate message. | 21/12/2021 |  |  |
| 2. | With the help of an example explain how an array can be passed to a function? Is it possible to send just a single element of the array to a function? | 21/12/2021 |  |  |
| 3. | A library charges a fine for every book returned late. For first 5 days fine is 50 paise, for 6-10 days fine is one rupees and above 10 days fine is 5 rupees. If you return the books after 30 days your membership will be cancelled. Write a program to accept the number of days the member is late to return the book and display the fine or appropriate message. | 21/12/2021 |  |  |

Program 1

# Question:

Input two numbers and print their sum.

# Code:

#include<stdio.h>

#include<conio.h>

int main(){

    int a,b;

    clrscr();

    printf("Enter the two numbers: \n");

    scanf("%d\n%d",&a,&b);

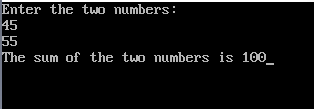
    printf("The sum of the two numbers is %d",a+b);

    getch();

    return 0;

}

# Output:

******

Program 2

# Question:

Input principal amount, rate and time and calculate S.I.

# Code:

#include<stdio.h>

#include<conio.h>

int main(){

    float p,r,t,si;

    clrscr();

    printf("Enter the principal amount(in rupees), rate(in percent) and time(in years): \n");

    scanf("%f\n%f\n%f",&p,&r,&t);

    si=p\*r\*t/100;

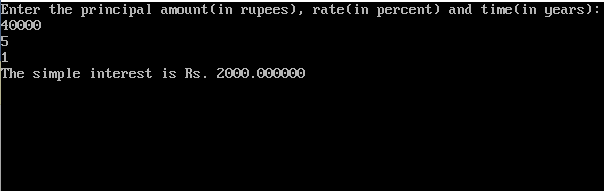
    printf("The simple interest is Rs. %f",si);

    getch();

    return 0;

}

# Output:

******

Program 3

# Question:

Input length and breadth and calculate area of rectangle

# Code:

#include<stdio.h>

#include<conio.h>

int main(){

    float l,b;

    clrscr();

    printf("Enter the length and breadth of the rectangle: \n");

    scanf("%f\n%f",&l,&b);

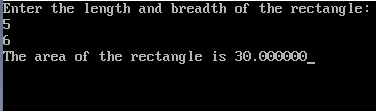
    printf("The area of the rectangle is %f",l\*b);

    getch();

    return 0;

}

# Output:



Program 4

# Question:

Input the side and calculate area of square.

# Code:

#include<stdio.h>

#include<conio.h>

int main(){

    float l;

    clrscr();

    printf("Enter the side length of the square: \n");

    scanf("%f",&l);

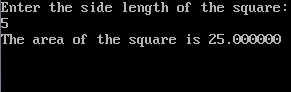
    printf("The area of the square is %f",l\*l);

    getch();

    return 0;

}

# Output:



Program 5

# Question:

Input radius and calculate area and circumference of circle.

# Code:

#include<stdio.h>

#include<conio.h>

int main(){

    float r;

    clrscr();

    printf("Enter the radius of the circle: \n");

    scanf("%f",&r);

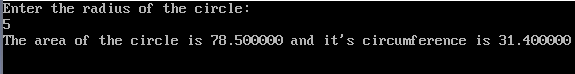
    printf("The area of the circle is %f and it's circumference is %f",3.14\*r\*r,2\*3.14\*r);

    getch();

    return 0;

}

# Output:



Program 6

# Question:

Input base and height and calculate area of triangle

# Code:

#include<stdio.h>

#include<conio.h>

int main(){

    float b,h;

    clrscr();

    printf("Enter the base and height of the triangle: \n");

    scanf("%f\n%f",&b,&h);

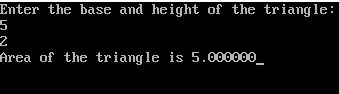
    printf("Area of the triangle is %f",0.5\*b\*h);

    getch();

    return 0;

}

# Output:



Program 7

# Question:

If Basic salary is input through keyboard write a program to calculate gross salary. Where,

da is 10% of bs.

ta is 12% of bs.

hra is 10% of bs.

# Code:

#include<stdio.h>

#include<conio.h>

int main(){

    float bs,da,ta,hra;

    clrscr();

    printf("Enter the basic salary:\n");

    scanf("%f",&bs);

    da=bs\*10/100;

    ta=bs\*12/100;

    hra=bs\*10/100;

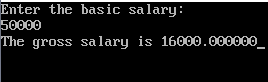
    printf("The gross salary is %f",da+ta+hra);

    getch();

    return 0;

}

# Output:



Program 8

# Question:

Input temperature in Fahrenheit and convert into Celsius.

# Code:

#include<stdio.h>

#include<conio.h>

int main(){

    float f,c;

    clrscr();

    printf("Enter the temperature in Fahrenheit:\n");

    scanf("%f",&f);

    c=(f-32)\*5/9;

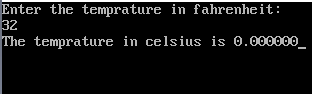
    printf("The temperature in Celsius is %f",c);

    getch();

    return 0;

}

# Output:



Program 9

# Question:

Input two numbers and swap them.

# Code:

#include<stdio.h>

#include<conio.h>

int main(){

    int a,b;

    clrscr();

    printf("Enter the value of a and b:\n");

    scanf("%d\n%d",&a,&b);

    a=a+b;

    b=a-b;

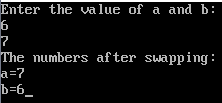
    a=a-b;

    printf("The numbers after swapping:\na=%d\nb=%d",a,b);

    return 0;

}

# Output:



Program 10

# Question:

Input 5-digit numbers and calculate sum of its digits.

# Code:

#include<stdio.h>

#include<conio.h>

int main(){

    int n,i,a,t,sum=0;

    clrscr();

    printf("Enter a 5-digit number: ");

    scanf("%d",&n);

    if(n>=10000){

        t=n;

        for (i=1;i<=5;i++){

            a=t-((t/10)\*10);

            sum=sum+a;

            t/=10;

        }

        printf("The sum of its digits is %d",sum);

    }

    else{

        printf("You didn't enter a 5-digit number... The program is terminating...");

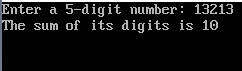
    }

    getch();

    return 0;

}

# Output:



Program 11

# Question:

Input two numbers and print the greater number.

# Code:

#include<stdio.h>

#include<conio.h>

int main(){

    int a,b;

    clrscr();

    printf("Enter a the two numbers: \n");

    scanf("%d\n%d",&a,&b);

    if(a>b){

        printf("The first number is greater than the second (%d>%d)",a,b);

    }

    else if(b>a){

        printf("The second number is greater than the first one (%d<%d)",a,b);

    }

    else{

        printf("The two numbers are equal (%d=%d)",a,b);

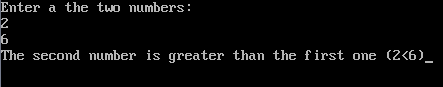
    }

    getch();

    return 0;

}

# Output:



Program 12

# Question:

Input a number and check if it is even or odd.

# Code:

#include<stdio.h>

#include<conio.h>

int main(){

    int n;

    clrscr();

    printf("Enter the number: ");

    scanf("%d",&n);

    if (n%2==0){

        printf("The number is even");

    }

    else{

        printf("The number is odd");

    }

    getch();

    return 0;

}

# Output:



Program 13

# Question:

Input a number and check if it is Armstrong.

# Code:

#include<stdio.h>

#include<conio.h>

int main(){

    int n,t,a,sum=0;

    clrscr();

    printf("Enter the number: ");

    scanf("%d",&n);

    t=n;

    while (t>0){

        a=t-((t/10)\*10);

        sum+=(a\*a\*a);

        t/=10;

    }

    if (sum==n){

        printf("The number is an Armstrong number.");

    }

    else {

        printf("This is not an Armstrong number.");

    }

    getch();

    return 0;

}

# Output:



Program 14

# Question:

Display reverse of a number.

# Code:

#include<stdio.h>

#include<conio.h>

int main(){

    int n;

    clrscr();

    printf("Enter the number: ");

    scanf("%d",&n);

    printf("Reverse of %d is: ",n);

    for (n = n;n > 0;n/=10){

        printf("%d",n%10);

    }

    getch();

    return 0;

}

# Output:

Text

Description automatically generated with medium confidence

Program 15

# Question:

Input a number and check if it is palindrome or not.

# Code:

#include<stdio.h>

#include<conio.h>

int main(){

    int n,r = 0,t;

    clrscr();

    printf("Enter the number: ");

    scanf("%d",&n);

    for (t = n;t > 0;t/=10){

        r = r\*10 + t%10;

    }

    if (r == n){

        printf("Palindrom!!!");

    }

    else {

        printf("Not Palindrom!!!");

    }

    getch();

    return 0;

}

# Output:

Text

Description automatically generated with medium confidence

Program 16

# Question:

Generate Fibonacci series.

# Code:

#include<stdio.h>

#include<conio.h>

int main(){

int n,i,a,b,c;

clrscr();

printf("Enter the number: ");

scanf("%d",&n);

a = 0;

b = 1;

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

for (i=0;i<n-2;i++){

c = a+b;

printf(", %d",c);

a = b;

b = c;

}

getch();

return 0;

}

# Output:

Text

Description automatically generated

Program 17

# Question:

Display pattern below

\*

\*\*

\*\*\*

\*\*\*\*

# Code:

#include<stdio.h>

#include<conio.h>

int main(){

    int i,j;

    clrscr();

    for (i = 1;i <= 4;i++){

        for (j = 1;j <= i;j++){

            printf("\*");

        }

        printf("\n");

    }

    getch();

    return 0;

}

# Output:

Shape

Description automatically generated with medium confidence

Program 18

# Question:

Display the pattern below

1

12

123

1234

# Code:

#include<stdio.h>

#include<conio.h>

int main(){

    clrscr();

    int i,j;

    for (i = 1;i <= 4;i++){

        for (j = 1;j <= i;j++){

            printf("%d",j);

        }

        printf("\n");

    }

    getch();

    return 0;

}

# Output:

Shape

Description automatically generated with medium confidence

Program 19

# Question:

Display the pattern below

\*\*\*\*

\*\*\*

\*\*

\*

# Code:

#include<stdio.h>

#include<conio.h>

int main(){

    clrscr();

    int i,j;

    for (i = 4;i > 0;i--){

        for (j = 4;j > i;j--){

            printf(" ");

        }

        for (j = i;j > 0;j--){

            printf("\* ");

        }

        printf("\n");

    }

    getch();

    return 0;

}

# Output:

Shape

Description automatically generated with medium confidence

Program 20

# Question:

Input an alphabet and check it is vowel or not.

# Code:

#include<stdio.h>

#include<conio.h>

int main(){

    char c,arr[10]={'a','e','i','o','u','A','E','I','O','U'};

    int i;

    printf("Enter the character: ");

    scanf("%c",&c);

    for (i = 0;i < 10;i++){

        if (c == arr[i]){

            printf("vowel!!!");

            break;

        }

    }

    if (i == 10){

        printf("Not a vowel!!!");

    }

    getch();

    return 0;

}

# Output:

Text

Description automatically generated with medium confidence

Program 21

# Question:

Design a calculator.

# Code:

#include<stdio.h>

#include<conio.h>

int main(){

    float a,b;

    char o;

    clrscr();

    printf("Enter the operator(+,-,\*,/): ");

    scanf("%c",&o);

    printf("Enter the first and second numbers: ");

    scanf("%f %f",&a,&b);

    switch (o){

        case '+':

            printf("%f",a + b);

            break;

        case '-':

            printf("%f",a - b);

            break;

        case '\*':

            printf("%f",a \* b);

            break;

        case '/':

            printf("%f",a / b);

            break;

        default:

            printf("You entered a wrong operator!");

    }

    getch();

    return 0;

}

# Output:

Text

Description automatically generated

Program 22

# Question:

Write a program Input the marks and print the remarks.

# Code:

#include<stdio.h>

int main(){

    int arr[5],sum,avg,i;

    printf("Enter the marks of five subjects: \n");

    for (i=0;i<5;i++){

        scanf("%d",&arr[i]);

        sum+=arr[i];

    }

    avg = sum/5;

    if (avg<33)

    printf("Fail!!!");

    else if (avg<40)

    printf("Third Position!");

    else if (avg<60)

    printf("Second Position!");

    else

    printf("First Position!!!");

    return 0;

}

# Output:

Text

Description automatically generated

Program 23

# Question:

Write a program enter three number and find Largest among 3 numbers.

# Code:

#include<stdio.h>

#include<conio.h>

int main(){

    int a,b,c;

    clrscr();

    printf("Enter the three numbers with a space between them: ");

    scanf("%d %d %d",&a,&b,&c);

    if ((a > b) && (a > c))

        printf("%d is the largest of them all.",a);

    else if ((b > a) && (b > c))

        printf("%d is the largest of them all.",b);

    else if ((c > a) && (c > b))

        printf("%d is the largest of them all.",c);

    else

        printf("You entered two or more numbers which are equal... Largest number can't be found.");

    getch();

    return 0;

}

# Output:

Graphical user interface, text, application

Description automatically generated

Program 24

# Question:

Write a program to find Average of the elements of an array.

# Code:

#include<stdio.h>

#include<conio.h>

int main(){

    int arr[100],sum = 0,i,n;

    float avg;

    clrscr();

    printf("Enter the number of elements you want to enter in the array(<100): ");

    scanf("%d",&n);

    printf("Enter the elements of the array:\n");

    for (i = 0; i < n;i++){

        scanf("%d",&arr[i]);

        sum += arr[i];

    }

    avg = (float) sum / n;

    printf("The average of these numbers is %f",avg);

    getch();

    return 0;

}

# Output:

Text

Description automatically generated

Program 25

# Question:

Write a program to find largest element of an array.

# Code:

#include<stdio.h>

#include<conio.h>

int main(){

    int arr[100],l,n,i;

    clrscr();

    printf("Enter the number of elements you want to enter in the array(<100): ");

    scanf("%d",&n);

    printf("Enter the elements of the array:\n");

    scanf("%d",&l);

    arr[0] = l;

    for (i = 1;i < n;i++)

        scanf("%d",&arr[i]);

    for (i = 0;i < n;i++){

        if (l < arr[i])

            l = arr[i];

    }

    printf("The largest number is %d",l);

    getch();

    return 0;

}

# Output:

Text

Description automatically generated

Program 26

# Question:

Write a program for Linear search.

# Code:

#include<stdio.h>

#include<conio.h>

int main(){

    int arr[100],i,n;

    clrscr();

    printf("Enter the number of elements in the array: ");

    scanf("%d", &n);

    printf("Enter the elements of the array:\n");

    for (i = 0;i < n;i++)

        scanf("%d",&arr[i]);

    printf("Enter the search number: ");

    scanf("%d",&n);

    for (i = i - 1;i >= 0;i--){

        if (n == arr[i]){

            printf("Search number was found at position %d",i + 1);

            break;

        }

    }

    getch();

    return 0;

}

# Output:

Text

Description automatically generated

Program 27

# Question:

Write a program input two array and Merge.

# Code:

#include<stdio.h>

#include<conio.h>

int main(){

    int arr1[100],arr2[100],i,n,merge[100];

    clrscr();

    printf("Enter the number of elements in the array: ");

    scanf("%d",&n);

    printf("Enter the elements of first array:\n");

    for (i = 0;i < n;i++)

        scanf("%d",&arr1[i]);

    printf("Enter the elements of second array:\n");

    for (i = 0;i < n;i++){

        scanf("%d",&arr2[i]);

        merge[i] = arr1[i] + arr2[i];

    }

    printf("The merged array is: %d",merge[0]);

    for (i = 1;i < n;i++)

        printf(", %d",merge[i]);

    getch();

    return 0;

}

# Output:

Text

Description automatically generated

Program 28

# Question:

Write a program Selection sort.

# Code:

#include<stdio.h>

#include<conio.h>

int main(){

    int n,arr[100],i,j,min;

    printf("Enter the number of elements of array: ");

    scanf("%d",&n);

    printf("Enter the elements of the array: ");

    for (i = 0; i < n; i++)

        scanf("%d",&arr[i]);

    for (i = 0;i < n;i++){

        min = i;

        for (j = i + 1;j < n;j++){

            if (arr[min] > arr[j])

                min = j;

        }

        if (min != i)

            arr[i] = arr[min] + arr[i] - (arr[min] = arr[i]);

    }

    printf("The sorted array is: ");

    for (i = 0;i < n;i++)

        printf("%d ",arr[i]);

    getch();

    return 0;

}

# Output:

Text

Description automatically generated

Program 29

# Question:

Write a program Bubble sort.

# Code:

#include<stdio.h>

#include<conio.h>

int main(){

    int n,arr[100],i,j,x = 0;

    clrscr();

    printf("Enter the number of elements in the array: ");

    scanf("%d",&n);

    printf("Enter the elements of the array: ");

    for (i = 0;i < n;i++)

        scanf("%d",&arr[i]);

    while (x != 1){

        x = 1;

        for (i = 1;i < n;i++){

            if (arr[i-1] > arr[i]){

                arr[i-1] = arr[i] + arr[i-1] - (arr[i] = arr[i-1]);

                x = 0;

            }

        }

    }

    printf("The bubble sorted array is: ");

    for (i = 0;i < n;i++)

        printf("%d ",arr[i]);

    getch();

    return 0;

}

# Output: Graphical user interface, text Description automatically generated

Program 30

# Question:

Write a program Insertion sort.

# Code:

#include<stdio.h>

#include<conio.h>

int main(){

    int n,arr[100],i,j,key;

    printf("Enter the number of elements in the array: ");

    scanf("%d",&n);

    printf("Enter the elements of the array: ");

    for (i = 0; i < n; i++)

        scanf("%d",&arr[i]);

    for (i = 1; i < n; i++){

        key = arr[i];

        for (j = i - 1; (j >= 0) && (key < arr[j]); j--)

            arr[j + 1] = arr[j];

        arr[j + 1] = key;

    }

    printf("The insertion sorted array is:");

    for (i = 0; i < n; i++)

        printf(" %d",arr[i]);

    getch();

    return 0;

}

# Output:

# Text Description automatically generated

Program 31

# Question:

Write a program for Binary search.

# Code:

#include <stdio.h>

#include <conio.h>

int main(){

    int n,arr[100],i,first = 0,last,mid,x;

    printf("Enter the number of elements in the array: ");

    scanf("%d",&n);

    printf("Enter the elements of the array: ");

    for (i = 0; i < n; i++)

        scanf("%d",&arr[i]);

    printf("Enter the search number: ");

    scanf("%d",&x);

    last = n;

    while (first < last){

        mid = (first + last) / 2;

        if (x == arr[mid]){

            printf("The search number was found at position: %d",mid + 1);

            break;

        }

        else if (x > arr[mid])

                first = mid + 1;

        else

                last = mid;

    }

    if (first >= last)

        printf("The search number was not found in the array!");

    getch();

    return 0;

}

# Output:

Text

Description automatically generated

Program 32

# Question:

Write a program for Sum of two matrices.

# Code:

#include<stdio.h>

int main(){

    int arr1[10][10],arr2[10][10],arr3[10][10],i,j,n,m;

    printf("Enter the values of n and m for nxm matrices: ");

    scanf("%d %d",&n,&m);

    printf("Enter the elements of first array:\n");

    for (i = 0;i < n;i++){

        printf("Row %d: ",i + 1);

        for (j = 0;j < m;j++)

            scanf("%d",&arr1[i][j]);

    }

    printf("Enter the elements of second array:\n");

    for (i = 0;i < n;i++){

        printf("Row %d: ",i + 1);

        for (j = 0;j < m;j++)

            scanf("%d",&arr2[i][j]);

    }

    printf("The sum of the matrices is:\n");

    for (i = 0;i < n;i++){

        for (j = 0;j < m;j++)

            printf("%d ",arr3[i][j] = arr1[i][j] + arr2[i][j]);

        printf("\n");

    }

    return 0;

}

# Output:

Text

Description automatically generated

Program 33

# Question:

Write a program for Product of two matrices.

# Code:

#include <stdio.h>

int main(){

    int arr1[10][10],arr2[10][10],arr3[10][10],m,n,o,i,j,k;

    printf("Enter the values of m,n and o for mxn and nxo matrices: ");

    scanf("%d %d %d", &m, &n, &o);

    printf("Enter the values of first matrix:\n");

    for (i = 0; i < m; i++){

        for (j = 0; j < n; j++)

            scanf("%d",&arr1[i][j]);

    }

    printf("Enter the values of second matrix:\n");

    for (i = 0; i < n; i++){

        for (j = 0; j < o; j++)

            scanf("%d",&arr2[i][j]);

    }

    printf("The multiple of these two matrices is:\n");

    for (i = 0; i < m; i++){

        for (j = 0; j < o; j++){

            arr3[i][j] = 0;

            for (k = 0; k < n; k++)

                arr3[i][j] += arr1[i][k] \* arr2[k][j];

            printf("%d ",arr3[i][j]);

        }

        printf("\n");

    }

    return 0;

}

# Output:

Text

Description automatically generated

Program 34

# Question:

Write a program for Transpose of a matrix.

# Code:

#include <stdio.h>

int main(){

    int arr[10][10], arrt[10][10], m, n, i, j;

    printf("Enter the values of m and n for mxn matrix: ");

    scanf("%d %d", &m, &n);

    printf("Enter the values of the matrix:\n");

    for (i = 0; i < m; i++){

        printf("Row %d: ",i + 1);

        for (j = 0; j < n; j++)

            scanf("%d",&arr[i][j]);

    }

    for (i = 0; i < m; i++){

        for (j = 0; j < n; j++)

            arrt[j][i] = arr[i][j];

    }

    printf("The transposed matrix is:\n");

    for (i = 0; i < n; i++){

        for (j = 0; j < m; j++)

            printf("%d\t",arrt[i][j]);

        printf("\n");

    }

    return 0;

}

# Output:

Text

Description automatically generated

Program 35

# Question:

Write a program for Sum of two numbers using functions.

# Code:

#include<stdio.h>

#include<conio.h>

float sum(float a,float b){

    float c;

    c = (float) a + b;

    return c;

}

int main(){

    float a,b;

    clrscr();

    printf("Enter the two numbers: ");

    scanf("%f %f",&a,&b);

    printf("The addition of these two numbers is %.2f",sum(a,b));

    getch();

    return 0;

}

# Output:

Text

Description automatically generated

Program 36

# Question:

Write a program for Swap two numbers using functions.

# Code:

#include <stdio.h>

#include <conio.h>

void swap(int a, int b){

    a = b + a - (b = a);

    printf("The values of a and b after swapping inside of a function is:\na = %d\nb = %d",a,b);

}

int main(){

    int a,b;

    clrscr();

    printf("Enter the value of a and b: ");

    scanf("%d %d",&a,&b);

    swap(a,b);

    getch();

    return 0;

}

# Output:

Text

Description automatically generated

Program 37

# Question:

Write a program for Armstrong number using function.

# Code:

#include <stdio.h>

#include <conio.h>

void checkArmstrong(int n){

    int sum = 0,x = n;

    for (x = x; x > 0; x /= 10){

        sum += (x % 10) ^ 3;

    }

    if (sum = n)

        printf("This is an armstrong number!");

    else

        printf("This is not an armstrong number!");

}

int main(){

    int n;

    printf("Enter the number: ");

    scanf("%d",&n);

    checkArmstrong(n);

    getch();

    return 0;

}

# Output:

Text

Description automatically generated with medium confidence

Program 38

# Question:

Write a program for Add two number using call by reference.

# Code:

#include <stdio.h>

#include <conio.h>

int add(int \*a, int \*b){

    return \*a + \*b;

}

int main(){

    int a,b;

    printf("Enter the two numbers: ");

    scanf("%d %d",&a,&b);

    printf("The addition of %d and %d is %d",a,b,add(&a,&b));

    getch();

    return 0;

}

# Output:

Text

Description automatically generated

Program 39

# Question:

Write a program for Swap two numbers using call by reference.

# Code:

#include <stdio.h>

#include <conio.h>

void swap(int \*p, int \*q){

    \*p = \*p + \*q - (\*q = \*p);

}

int main(){

    int a,b;

    clrscr();

    printf("Enter the value of a and b: ");

    scanf("%d %d",&a,&b);

    swap(&a,&b);

    printf("The values of a and b after swapping:\na = %d\nb = %d",a,b);

    getch();

    return 0;

}

# Output:

Text

Description automatically generated

Program 40

# Question:

Write a program for Sum of digits of a number using function.

# Code:

#include <stdio.h>

#include <conio.h>

int addDigits(int n){

    int sum = 0;

    for (n = n; n > 0; n /= 10)

        sum += n % 10;

    return sum;

}

int main(){

    int n;

    printf("Enter the number: ");

    scanf("%d",&n);

    printf("The sum of its digits is: %d",addDigits(n));

    getch();

    return 0;

}

# Output:

Text

Description automatically generated

Program 41

# Question:

Write a Cprogramtocopycontentsofonefiletoanotherfile

# Code:

#include <stdio.h>

#include <conio.h>

int main(){

    FILE \*file1, \*file2;

    int c;

    file1 = fopen("file1.txt","r");

    file2 = fopen("file2.txt","w");

    while ((c = fgetc(file1)) != EOF){

        fputc(c,file2);

    }

    fclose(file1);

    fclose(file2);

    return 0;

}

# Output:

Before running the code:

Graphical user interface, application

Description automatically generated

After running the code:

Graphical user interface, text, application, chat or text message

Description automatically generated

Open Ended Questions

# Question 1:

A library charges a fine for every book returned late. For first 5 days fine is 50 paise, for 6-10 days fine is one rupees and above 10 days fine is 5 rupees. If you return the books after 30 days your membership will be cancelled. Write a program to accept the number of days the member is late to return the book and display the fine or appropriate message.

# Code:

#include <stdio.h>

#include <conio.h>

int main(){

    int n;

    float fine;

    printf("Enter the number of days the person is late to return the book: ");

    scanf("%d",&n);

    if (n <= 5)

        fine = 0.5 \* n;

    else if (n <= 10)

        fine = (0.5 \* 5) + (1 \* (n - 5));

    else

        fine = (0.5 \* 5) + (1 \* (n - 5)) + (5 \* (n - 10));

    n > 30? printf("Patron's membership has been cancled and fine = %f",fine) : printf("Fine = %.3f",fine);

    getch();

    return 0;

}

# Output:

Text

Description automatically generated

Open Ended Questions

# Question 2:

With the help of an example explain how an array can be passed to a function? Is it possible to send just a single element of the array to a function?

# Code:

#include <stdio.h>

#include <conio.h>

int printElement(int x){

    printf("%d ",x);

    return 0;

}

int printArray(int arr[10]){

    int i;

    for (i = 0; i < 10; i++)

        printElement(arr[i]); //passing a single element of array in a function

    return 0;

}

int main(){

    int arr[10] = {3,2,6,64,31,4,7,53,5,34};

    printf("Elements of the array are:\n");

    printArray(arr); //passing an array in a function

    return 0;

}

# Output:

Text

Description automatically generated

Open Ended Questions

# Question 3:

Define a structure data type called TStruct containing 3 members called hour, minute and second. Develop a program that would assign values to the individual members and display the time in the form 16:40:30

# Code:

#include <stdio.h>

#include <conio.h>

struct Tstruct{

    int hour; int minute; int second;

};

int main(){

    struct Tstruct t;

    t.hour = -1; t.minute = -1; t.second = -1;

    do {

        printf("Enter a valid value for hour: ");

        scanf("%d",&t.hour);

    } while (t.hour < 0 && t.hour >= 24);

    do {

        printf("Enter a valid value for minute: ");

        scanf("%d",&t.minute);

    } while (t.minute < 0 && t.minute >= 60);

    do {

        printf("Enter a valid value for second: ");

        scanf("%d",&t.second);

    } while (t.second < 0 && t.second >= 60);

    printf("The time is : %d:%d:%d",t.hour,t.minute,t.second);

    getch();

    return 0;

}

# Output:

Text

Description automatically generated