LIST OF PROGRAMS

1. While purchasing certain items, a discount of 10% is offered if the quantity purchased is more than 1000. If quantity and price per item are input through the keyboard, write a program to calculate the total expenses.

2. The marks obtained by a student in 5 different subjects are input through the keyboard. The student gets a division as per the following rules: Percentage above or equal to 60 - First division Percentage between 50 and 59 - Second division Percentage between 40 and 49 - Third division Percentage less than 40 - Fail Write a program to calculate the division   
obtained by the student.

3. Write a program to check whether a triangle is valid or not, when the three angles of the triangle are entered through the keyboard. A triangle is valid if the sum of all the three angles is equal to 180 degrees.

4. Write a program in C to read the age and display whether the candidate is eligible to vote or not.  
Definition of Done:  
• The program should ask the user to enter an integer. If it is floating, ask the user to enter appropriate number  
• The program should use if-else statement

1. What is the usage of nested if statements?

Ans. Nested If in C is helpful **if you want to check the condition inside a condition.**

2. What will be the output of the C program?  
#include<stdio.h>  
int main()  
{  
 int i = 5, j = 6, k = 7;  
 if(i > j == k)  
 printf("%d %d %d", i++, ++j, --k);  
 else   
 printf("%d %d %d", i, j, k);  
 return 0;  
}

Ans. 5 6 7

3. What will be the output of the C program?  
#include<stdio.h>  
int main()  
{  
 int i = 2;  
 if(i == (1, 2))  
 printf("Hai");  
 else  
 printf("No Hai");  
 return 0;  
}  
a) Compilation error  
b) Runtime error  
c) Hai  
d) No Hai

4. What will be the output of the C program?  
#include<stdio.h>  
int main()  
{  
 if(sizeof(0))  
 printf("Hai");

else  
 printf("Bye");  
 return 0;  
}  
a) Hai  
b) Bye  
c) Compilation Error  
d) None

Practical No: 4

LIST OF PROGRAMS  
2. A character is entered through keyboard. Write a C program and its algorithm to determine whether the character entered is a capital letter, a small case letter, a digit or a special symbol using switch case. The following table shows the range of ASCII values for various characters.   
Characters ASCII values   
A – Z 65 – 90  
 a – z 97 – 122   
0 – 9 48 – 57

Special symbols 0 – 47, 58 – 64, 91 – 96, 123 – 127  
Text

Description automatically generated

3. Write a C program using switch case to display grade of students based on the total marks obtained by the student in five subjects:  
Here is the range of Grades:  
Marks >= 90 : Grade A  
Marks >= 70 && < 90 : Grade B  
Marks >= 50 && < 70 : Grade C  
Marks < 50 : Grade D  
Marks<50 : Fail

Program Outcome

Enter marks of 5 subjects  
97 89 78 87 68  
Grade : B  
Code

Text

Description automatically generated

LIST OF FLIP EXPERIMENTS

1. What will be the output of the following C code? (Assuming that we have entered the value 1   
in the standard input)  
 #include <stdio.h>  
 void main()  
 {  
 double ch;  
 printf("enter a value between 1 to 2:");  
 scanf("%lf", &ch);  
 switch (ch)  
 {  
 case 1:  
 printf("1");

break;  
 case 2:  
 printf("2");  
 break;  
 }  
 }

Ans: Error

2) What will be the output of the following C code? (Assuming that we have entered the value 1   
in the standard input)  
 #include <stdio.h>  
 void main()  
 {  
 int ch;  
 printf("enter a value between 1 to 2:");  
 scanf("%d", &ch);  
 switch (ch)  
 {  
 case 1:  
 printf("1\n");  
 default:  
 printf("2\n");  
 }  
 }

Ans:

1

2

3) What will be the output of the following C code?  
 #include <stdio.h>  
 int main()  
 {  
 int a = 1, b = 1;  
 switch (a)  
 {  
 case a\*b:  
 printf("yes ");  
 case a-b:  
 printf("no\n");  
 break;  
 }  
 }

Ans: Error

4) What is the output of the below program?  
#include <stdio.h>  
int main()  
{  
 int i = 0;  
 switch (i)  
 {  
 case '0': printf("Geeks");  
 break;  
 case '1': printf("Quiz");  
 break;  
 default: printf("GeeksQuiz");  
 }  
 return 0;  
}

Ans: GeeksQuiz

5) What will be the output of the following C program segment? (GATE CS 2012)  
char inchar = 'A';  
switch (inchar)  
{  
case 'A' :  
 printf ("choice A \n") ;  
case 'B' :  
 printf ("choice B ") ;  
case 'C' :  
case 'D' :  
case 'E' :  
default:  
 printf ("No Choice") ;  
}

Ans: choice A

Choice B No Choice

1. Find factorial of a number using while loop.

#include <stdio.h>

int main()

{

int n,i,f;

f=i=1;

printf("Enter a Number to Find Factorial: ");

scanf("%d",&n);

while(i<=n)

{

f\*=i;

i++;

}

printf("The Factorial of %d is : %d",n,f);

return 0;

}

2. Program to add numbers until the user enters zero.

#include <stdio.h>

int main()

{

    int num, sum = 0;

    do

    {

        printf("Enter a number: ");

        scanf("%d", &num);

        sum += num;

    } while (num != 0);

    printf("Total = %d", sum);

    return 0;}

3. Program to print the sum of 10 natural numbers using while loop

#include <stdio.h>

int main() {

int n, i, sum = 0;

printf("Enter a positive integer: ");

scanf("%d", &n);

i = 1;

while (i <= n) {

sum += i;

++i;

}

printf("Sum = %d", sum);

return 0;

}

2. What will be the output of the C program?  
a) void main( )   
{  
 int j =1;   
while ( j <= 10 )   
{   
 printf ( "\n%d", j ) ;   
 j = j + 1 ; } }  
b) void main( )   
 {   
 float x = 1.1 ;   
 while ( x == 1.1 )   
 {   
 printf ( "\n%f", x ) ;   
 x = x – 0.1 ; } }

Ans: (a)

1

2

3

4

5

6

7

8

9

10

Ans: (b) Run Error

LIST OF FLIP EXPERIMENTS  
1. What will be the output of the following?

FOCP 1 Lab Manual(CSL106)  
a) #include <stdio.h>   
 int main()   
 { int i = 0;   
 while (i = 0)   
 printf("True\n");   
 printf("False\n");   
 }

Ans: False

b) #include<stdio.h>   
 int main()   
 { int i = 0;   
 while(i < 3, i = 0, i < 5)   
 { printf("Loop ");   
 i++; }   
 return 0; }

Ans: Infinite Loop

c) #include<stdio.h>   
 int main()   
 { int i = 0;   
 while(i++)   
 {   
 printf("Loop ");   
 if(i == 3) break; }   
 return 0; }

Ans: Nothing (Return)

Practical No: 6

LIST OF PROGRAMS  
1. Write a program to find the factorial of a number using for loop

#include<stdio.h>

int main()

{

 int i,fact=1,n;

 printf("Enter a number: ");

  scanf("%d",&n);

    for(i=1;i<=n;i++){

      fact=fact\*i;

  }

  printf("Factorial of %d is: %d",n,fact);

return 0;

}

2. Write a program to print the following pattern:  
a) 1  
1 2  
 1 2 3  
 1 2 3 4  
 DoD 1: The number should be given by the user.   
 DoD 2: The program should check if the number is a positive natural number.  
 DoD 3: The factorial of that number should be printed as the output.

#include<stdio.h>

int main(){

    int n;

    printf("Enter the number of rows : ");

    scanf("%d",&n);

    if(n<=0){

        printf("Number should be a positive number and should be greater than 0");

    }

    for(int i=1;i<=n;i++){

        for(int j =1;j<=i;j++){

            printf("%d",j);

        }

        printf("\n");

    }

return 0;

}

b) 55555  
4444  
333  
22  
1  
DoD 1: The program does not take any input.   
DoD 2: The above-mentioned pattern should be printed as the output.

#include<stdio.h>

int main(){

    int n;

    printf("Enter the number of rows : ");

    scanf("%d",&n);

    if(n<=0){

        printf("Number should be a positive number and should be greater than 0");

    }

    for(int i=n;i>=1;i--){

        for(int j =i;j>=1;j--){

            printf("%d",i);

        }

        printf("\n");

    }

return 0;

}

3. Write a program in C to print the table of a given number which is multiplied from 1 to 10 using for loop

#include <stdio.h>

int main()

{

    int n, ra;

    printf("Enter a number for the table : ");

    scanf("%d", &n);

    for (int i = 1; i <= 10; i++)

    {

        ra = n \* i;

        printf("\n%d \* %d = %d", n, i, ra);

    }

    return 0;

}

SUGGESTED QUESTION BANK

1. To find the sum of individual digits of a positive integer and test given number is palindrome.

2. That will read in a positive integer value and determine whether its prime or Fibonacci.

#include <stdio.h>

int main()

{

    int n, count, a, b, c;

    printf("Enter a positive number : ");

    scanf("%d", &n);

    {

        for (int i = 1; i <= n; i++)

        {

            if (n % i == 0)

            {

                count++;

            }

        }

        if (count == 2)

        {

            printf("%d is a prime number", n);

        }

        else

        {

            printf("%d is not a prime number", n);

        }

    }

    {

        a = 0;

        b = 1;

        c = a + b;

        while (c < n)

        {

            a = b;

            b = c;

            c = a + b;

        }

        if (c == n)

            printf("\n%d is a Fibonacci term", n);

        else

            printf("\n%d is not a Fibonacci term", n);

    }

    return 0;

}

3. WAP to calculate the sum of every third integer, beginning with i=2 ( i.e. calculate the sum 2+5+8+11+.........) for all values of i less than 100.

#include <stdio.h>

int main()

{

    int i, sum = 0, n;

    printf("Enter a number : ");

    scanf("%d", &n);

    for (i = 2; i <= n; i += 3)

    {

        sum += i;

    }

    printf("SUM = %d", sum);

    return 0;

}

4. WAP to convert a positive integer quantity to a roman numeral (i.e. 12 will be converted to XIV).

#include <stdio.h>

int main()

{

    int n;

    printf("Enter a positive number : ");

    scanf("%d", &n);

    printf("Roman number : ");

    while (n != 0)

    {

        if (n >= 1000) // 1000 - m

        {

            printf("m");

            n -= 1000;

        }

        else if (n >= 900) // 900 -  cm

        {

            printf("cm");

            n -= 900;

        }

        else if (n >= 500) // 500 - d

        {

            printf("d");

            n -= 500;

        }

        else if (n >= 400) // 400 -  cd

        {

            printf("cd");

            n -= 400;

        }

        else if (n >= 100) // 100 - c

        {

            printf("c");

            n -= 100;

        }

        else if (n >= 90) // 90 - xc

        {

            printf("xc");

            n -= 90;

        }

        else if (n >= 50) // 50 - l

        {

            printf("l");

            n -= 50;

        }

        else if (n >= 40) // 40 - xl

        {

            printf("xl");

            n -= 40;

        }

        else if (n >= 10) // 10 - x

        {

            printf("x");

            n -= 10;

        }

        else if (n >= 9) // 9 - ix

        {

            printf("ix");

            n -= 9;

        }

        else if (n >= 5) // 5 - v

        {

            printf("v");

            n -= 5;

        }

        else if (n >= 4) // 4 - iv

        {

            printf("iv");

            n -= 4;

        }

        else if (n >= 1) // 1 - i

        {

            printf("i");

            n -= 1;

        }

    }

    return 0;

}

LIST OF FLIP EXPERIMENTS

1. How many times "FOCP" is get printed?  
#include<stdio.h>  
int main()  
{  
 int x;  
 for(x=-1; x<=10; x++)  
 {  
 if(x < 5)  
 continue;  
 else  
 break;  
 printf("FOCP");  
 }  
 return 0;  
}

Ans: Nothing

2 What will be the output of the program?  
#include<stdio.h>  
int main()  
{  
 for(int i=0; i<=5; i++);  
 printf("%d", i);  
 return 0;  
}

Ans: 012345

3. Point out the error, if any in the for loop.  
#include<stdio.h>  
int main()  
{  
 int i=1;  
 for(;;)  
 {  
 printf("%d\n", i++);  
 if(i>10)  
 break;  
 }  
 return 0;

Ans: Parts of for statement is invalid.