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PRACTICAL NO - 1-1

29

Aim :- Write the program to understand the basic data types and input output.

Source Code :-

```
#include <conio.h>
#include <stdio.h>
void main()
{
    int roll;
    char name [100];
    long int mob_no;
    char grade;
    char add [100];
    float per;
    clrscr();
    printf ("***** Demonstration of datatypes *****");
    printf ("\n Enter your roll number : ");
    scanf ("%d", &roll);
    printf ("\n Enter your name : ");
    scanf ("%s", &name);
    printf ("\n Enter your mobile number : ");
    scanf ("%ld", &mob_no);
    printf ("\n Enter your grade : ");
    scanf ("%f", &grade);
    printf ("\n Enter your address : ");
```

```

printf("In Enter your percentage :");
scanf("%f", &per);
printf("In Your roll number is : %d", roll);
printf("In Your name is : %s", name);
printf("In Your mobile number is : %ld", mob_no);
printf("In Your grade is : %s", grade);
printf("In Your address is : %s", add);
printf("In Your percentage is : %f", per);
getch();
    
```

3

<in subtopic shell

() cuavis

Hàm trả

: [0-9] số nguyên

- [0-9] số nguyên

char số

: [0-9] kí tự số

string

: (3) ký tự

char

: (char) trả về giá trị n/17 trong

: (char) trả về giá trị n/17 trong

if i == 00000000000000000000000000000000

: (char) trả về giá trị n/17 trong

: (char) trả về giá trị n/17 trong

: ("odd" or "even" or "rest") trả về

: (char) trả về giá trị n/17 trong

: ("odd" or "even" or "rest") trả về

Output :-

***** Demonstration of datatype *****

Enter your roll number : 1786

Enter your name : Shubh

Enter your mobile number : 84548

Enter your grade : A

Enter your address : aaa

Enter your percentage : 54.16

Your roll number is : 1786

Your name is : Shubh

Your mobile number is : 84548

Your grade is : A

Your address is : aaa

Your percentage is : 54.160000

Mr.
10/12/19

Output:-

Enter the radius: 3

The Area of Circle is : 28.269001

Pitillo

AIM:- AREA OF A CIRCLE

SOURCE CODE:-

```
#include <conio.h>
#include <stdio.h>
void main ()
{
    float pi = 3.141;
    float rad;
    float aoc;
    clrscr();
    printf ("\n Enter the radius : ");
    scanf ("%f", &rad);
    aoc = pi * rad * rad;
    printf ("\n The Area of Circle is : %f", aoc);
    getch ();
}
```

Folinf19

AIM:- TERNARY OPERATOR

SOURCE CODE:-

```
//ternary operator
#include <conio.h>
#include <stdio.h>
void main()
{
    int a, b, x;
    clrscr();
    printf("\n Enter 1st num:", &a);
    scanf("%d", a);
    printf("\n Enter 2nd num:", &b);
    scanf("%d", b);
    x = (a > b) ? a : b;
    printf("%d", &x);
    getch();
}
```

y

Output:-

Enter 1st number: 7

Enter 2nd number: 5

7.

*Sri
07/01/2020*

28

```

Code:- // dynamic calculator
#include <stdio.h>
#include <conio.h>
void main()
{
    int num1, num2;
    float add, sub, mul, div;
    clrscr();
    printf("Enter first number: ");
    scanf("%d", &num1);
    printf("Enter second number: ");
    scanf("%d", &num2);
    add = num1 + num2;
    sub = num1 - num2;
    mul = num1 * num2;
    div = num1 / num2;
    printf("Addition of %d and %d is %f", num1, num2, add);
    printf("Subtraction of %d & %d is %f", num1, num2, sub);
    printf("Multiplication of %d & %d is %f", num1, num2, mul);
    printf("Division of %d & %d is %f", num1, num2, div);
    getch();
}

```

Output:-

```

Enter first number 3
Enter second number 2
add= Addition of 3 & 2 is 5
sub= Subtraction of 3 & 2 is 1
mul= Multiplication of 3 & 2 is 6
div= Division of 3 & 2 is 1.5000

```

Aim :- Write a C program on operator & expression

Theory :-

a) Write a program to create a dynamic calculator.

Algorithm :-

Step 1 :- Declare a variable name for first & second number as integer.

Step 2 :- Now use scanf function to receive input from user.

Step 3 :- Now to add two numbers given by user, use the expression num 1 + num 2

Step 4 :- Now to subtract two numbers given by user, use the expression num 1 - num 2

Step 5 :- Again use expression num 1 * num 2 if user wishes to multiply the two inputs.

Step 6 :- Use expression num 1 / num 2 if user wishes to divide the two inputs.

Step 7 :- Now use printf function to display the output.

Practical 3

a] Aim :- WAP to find whether entered year is a leap year or not.

Code :-

```
// leap year
#include <conio.h>
#include <stdio.h>
void main ()
{
    int year;
    clrscr();
    printf ("In enter any year : ");
    scanf ("%d", &year);
    if (year % 4 == 0)
    {
        printf ("In The given year is a leap year");
    }
    else
    {
        printf ("In It is not a leap year");
    }
    getch();
}
```

Output :- Enter any year 2020

The given year is a leap year

Enter any year 2019

It is not a leap year

PE

Output :- Enter any number : 5
It is an odd number

Enter any number : 6

It is an even number.

b) Aim:- Write a program to find odd & even no.

Code :-

```
// odd & even
#include <conio.h>
#include <stdio.h>
void main ()
{
    int no;
    clrscr();
    printf ("In Enter any number : ");
    scanf ("%d", &no);
    if (no % 2 == 0)
    {
        printf ("It is an even number");
    }
    else
    {
        printf ("It is an odd number");
    }
    getch();
}
```

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c) Write a program to find character is vowel or consonant.

Code:- // vowel & consonant.

```
#include <conio.h>
#include <stdio.h>
void main()
{
    char ch;
    clrscr();
    printf("Enter any letter.");
    scanf("%c", &ch);
    if (ch == 'a' || ch == 'A' || ch == 'e' || ch ==
        ch == 'i' || ch == 'I' || ch == 'o' || ch == 'O'
        || ch == 'u' || ch == 'U')
    {
        printf("The letter is vowel.");
    }
    else
    {
        printf("The letter is consonant.");
    }
    getch();
```

Output:- Enter any letter A

The letter is vowel

Enter any letter C

The letter is consonant.

-Om 21/1/2020

Q1
S1
H1
B1
J1
G1
I1
N1
P1
R1
D1
F1
L1
M1
V1
W1
X1
Y1
Z1

Output :- Print all even numbers till : 50
All even numbers from 1 to 50 are:

2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32
34
36
38
40
42
44
46
48
50

Practical - 4

Q) Aim :- write a program to print even numbers between 1 to 50 using while loop.

Code :- // print even numbers using while loop

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int i, n;
    clrscr();
    printf("Print all even numbers till : ");
    scanf("%d", &n);
    printf("All even numbers from 1 to %d are : ");
    i = 1;
    while (i <= n)
    {
        if (i % 2 == 0)
        {
            printf("%d\n", i);
        }
        i++;
    }
    getch();
}
```

- Loitut

b) Check whether the given number is Armstrong or not.

→ Code :- // Armstrong or not

```
#include <math.h>
```

```
#include <conio.h>
```

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

```
void main()
```

```
{
```

```
int num, align, rem, n = 0;
```

```
float result = 0.0;
```

```
clrscr();
```

```
printf("Enter an integer : ");
```

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

```
align = num; /* To store the original number */
```

```
while (align != 0)
```

```
{
```

```
align /= 10; /* To get the last digit */
```

```
++n;
```

```
}
```

```
(0 == 3 & i) {
```

```
align = num;
```

```
while (align != 0)
```

```
{
```

```
rem = align % 10;
```

```
result += pow(rem, n);
```

```
align /= 10;
```

```
}
```

```
if ((int)result == num)
```

```
{
```

```
printf("%d", num);
```

```
else  
{ printf("%d is not an Armstrong number", num) 38  
y i : baserating is or value will result in two  
getch();
```

Output:- Enter any integer: 371
371 is an Armstrong number.

3E Create a recursive program to print the following pattern

Output - Enter the value to be patterned: 1

Enter no. of rows: 4

1
2 3
4 5 6
7 8 9 10

c) Write a program to obtain the following output.

```

1
2 3
4 5 6
7 8 9 10
  
```

→ Code → // pattern printing

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

```
#include <conio.h>
```

```
void main()
```

```
{
```

```
    int i, j, r, t;
```

```
    clrscr();
```

~~printf ("In Enter the value to be patterned")~~

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

~~printf ("In Enter no. of rows : ");~~

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

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

```
for (i=1; i<=r; i++)
```

```
{
```

```
    for (j=1; j<=i; j++)
```

```
{
```

```
        printf ("%d \t", t);
```

```
t++;
```

y

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

y

```
getch();
```

y

1
2
3
4
5
6
7
8
9
10

PRACTICAL - 5

Aim:- Program on arrays.

- a) Write a C program to find the sum of 5 numbers (array)

```
#include <stdio.h>
#include <conio.h>
void main ()
{
    int i, num[5], sum = 0;
    clrscr();
    printf ("In enter the elements into array:");
    for (i=0; i<5; i++)
        scanf ("%d", &num[i]);
    printf ("\n Entered array elements are");
    for (i=0; i<5; i++)
        printf ("\t %d", num[i]);
    sum = sum + num[i];
    printf ("\n Sum of elements is : %d", sum);
    getch();
```

Output :-

Enter the elements into array : 3 2 1 7 8

2

1

7

8

Entered array elements are : 3 2 1 7 8

Sum of elements is : 21

Q2

Output :- ~~values of the elements are given~~

Enter the number : 4

Enter the $a[0]$ no. of elements \rightarrow 2

Enter the $a[1]$ no. of elements \rightarrow 1

Enter the $a[2]$ no. of elements \rightarrow 3

Enter the $a[3]$ no. of elements \rightarrow 5

The displayed array is

~~$a[0] \rightarrow 2$~~

~~$a[1] \rightarrow 1$~~

~~$a[2] \rightarrow 3$~~

~~$a[3] \rightarrow 5$~~

b) Write a C program input array function.

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int a[20];
    int size, i;
    clrscr();
    printf ("Enter the number:");
    scanf ("%d", &size);
    for (i = 0; i < size; i++)
    {
        printf ("Enter the a[%d] no. of element\n", i);
        scanf ("%d", &a[i]);
    }
    printf ("%d", a[i]);
    getch();
}
```

c) Write a program to find out largest no. of the array (maximum element)

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int a[20];
    int size,i;
    clrscr();
    printf("In Enter the array number");
    scanf("%d",&size);
    b=a[0];
    for(i=0;i<size;i++)
}
```

```
if(b<a[i])
    b=a[i];
```

}

```
printf("The largest is %d",b);
getch();
```

y

Output :-

42

Enter the array number : 5

Enter the a[0] no. of elements → 2

Enter the a[1] no. of elements → 1

Enter the a[2] no. of elements → 3

Enter the a[3] no. of elements → 4

Enter the a[4] no. of elements → 5

The largest number is : 5

5A

Output :-

Enter the no. of terms 10

The fibenacci series upto 10 terms

0

1

1

2

3

5

8

13

21

34

d) Write a program to find out fibonacci series of the array.

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int arr[20], n, i, j;
    clrscr();
    printf("Enter the no. of terms\n");
    scanf("%d", &n);
    arr[0] = 0;
    arr[1] = 1;
    for (i = 2; i < n; i++)
    {
        arr[i] = arr[i - 2] + arr[i - 1];
    }
    printf("The fibonacci series upto %d terms\n");
    for (i = 0; i < n; i++)
    {
        printf("%d\t", arr[i]);
    }
    getch();
}
```

e) Write a C program to represent a multidimensional array in rows & columns.

```
#include <conio.h>
```

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

```
void main()
```

```
{
```

```
    int a[20][20];
```

```
    int row, col, i, j;
```

```
    clrscr();
```

```
    printf("In Enter no. of rows: ");
```

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

```
    printf("In Enter no. of columns: ");
```

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

```
    for(i=0; i<row; i++)
```

```
{
```

```
        for(j=0; j<col; j++)
```

```
{
```

3 printf("In Enter the a[%d][%d] no. of element
 ij);

```
3      printf("In The displayed matrix is : In");
```

```
3      for(i=0; i<row; i++)
```

```
{
```

```
        for(j=0; j<col; j++)
```

```
{
```

```
            printf("It %d", a[i][j]);
```

```
            printf("\n");
```

```
3      getch();
```

Output :-

Enter no. of rows : 3
Enter no. of columns : 3
Enter the $a[0][0]$ no. of elements : 1
Enter the $a[0][1]$ no. of elements : 2
Enter the $a[0][2]$ no. of elements : 3
Enter the $a[1][0]$ no. of elements : 4
Enter the $a[1][1]$ no. of elements : 5
Enter the $a[1][2]$ no. of elements : 6
Enter the $a[2][0]$ no. of elements : 7
Enter the $a[2][1]$ no. of elements : 8
Enter the $a[2][2]$ no. of elements : 9

The displayed matrix is :

1	2	3
4	5	6
7	8	9

*Mr. J
11/2/2020*

Output :- Enter a string: Hello World
String is : Hello World
After copying a string:
Hello World

PRACTICAL - 6

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Aim:- Program on string manipulations

a) Copying two strings - strcpy()

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

void main()
{
    char a[20], b[20];
    clrscr();
    printf("In Enter a string :");
    gets(a);
    printf("In String is : %s", a);
    strcpy(b, a);
    printf("In After copying a string :");
    printf("%s", b);
    getch();
}
```

b) Reversing a string - `strrev()`

→ `#include <conio.h>`

`#include <stdio.h>`

`#include <string.h>`

`void main()`

{

`char a[20];`

`clrscr();`

`printf("In Enter a string:");`

`gets(a)`

~~`strrev(a);`~~

`printf("In Reverse of the string is %s", a);`

`getch();`

}

c) Combining two strings - `strcat()`

→ `#include <conio.h>`

`#include <stdio.h>`

`#include <string.h>`

`void main()`

{

`char a[20], b[20];`

`clrscr();`

`printf("In Enter 1st string : ");`

`gets(a)`

`printf("In Enter 2nd string : ");`

`gets(b)`

`strcat(a, b);`

Code Output :- Enter a string: Hello World
Reverse of the string is : dleH olleH

Output prints 1st string
Hello prints last string
large box who prints all

Output prints 1st string
Output prints last string
large box who prints all

Output :- Enter 1st string : Hello
Enter 2nd string: World
After combining strings :
HelloWorld

```

printf("In After combining strings : "); print();
printf("In %s", a);
getch();
}

```

d) Comparing two strings - strcmp ()

```

#include <conio.h>
#include <stdio.h>
#include <string.h>
void main()
{
    char a[30], b[30];
    clrscr();
    printf("In Enter 1st string : "); gets(a);
    printf("In Enter 2nd string : "); gets(b);
    if (strcmp(a, b) == 0)
    {
        printf("The strings are equal.\n");
    }
    else
    {
        printf("The strings are not equal.\n");
    }
    getch();
}

```

e) String conversion to lowercase → `strlwr()`

```
→ #include <conio.h>
```

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

```
#include <string.h>
```

```
void main()
```

```
{
```

```
char a[50]; clrscr();
```

```
printf("In Enter a string :");
```

```
gets(a);
```

```
strlwr(a);
```

```
printf("In The string in lower case : %s", a);
```

```
getch();
```

```
}
```

f) String conversion to uppercase → `strupr()`

```
#include <conio.h>
```

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

```
#include <string.h>
```

```
void main()
```

```
{
```

```
char a[50];
```

```
clrscr();
```

```
printf("In Enter a string :");
```

```
gets(a);
```

```
strupr(a);
```

```
printf("In The string in upper case : %s", a);
```

```
}
```

Output:- Enter a string : Hello WORLD

The string in lower case : hello world

Output:- Enter a string : HELLO world

The string in upper case : HELLO WORLD

```
File Edit Search Run Compile Debug Project Options Window Help
[ ] A.C 2
TEMPCONU.C 3=[↑]=
#include<conio.h>
#include<stdio.h>
void main()
{
    int choice;
    float temp,fahren,cel;
    clrscr();
    printf("\n 1.Celsius to Fahrenheit\n 2.Fahrenheit to Celsius");
    choice=1,2;
    while(choice < 3)
    {
        if(choice == 1)
        {
            printf("\nEnter temperature in celsius : ");
            scanf("%f",&cel);
            fahren=(cel*(9.00/5.00))+32.00;
            printf("\nThe temp in Fahrenheit is : %f",fahren);
        }
        if(choice == 2)
        {
            printf("\nEnter temperature in Fahrenheit : ");
            scanf("%f",&fahren);
            cel=(fahren-32.00)*(5.00/9.00);
            printf("\nThe temp in Celsius is : %f",cel);
        }
    }
}
1:1 F1 Help Alt-F8 Next Msg Alt-F7 Prev Msg Alt-F9 Compile F9 Make F10 Menu
```

```
    if(choice == 1)
    {
        printf("\n Enter temperature in celsius : ");
        scanf("%f",&cel1);
        fahren=(cel1*(9.00/5.00))+32.00;
        printf("\n The temp in fahrenheit is : %f",fahren);
    }
    if(choice == 2)
    {
        printf("\n Enter temperature in fahrenheit : ");
        scanf("%f",&fahren);
        cel=(fahren-32.00)*5.00/9.00;
        printf("\n The temp in celsius is : %f",cel);
    }
    printf("\n Enter your choice : ");
    scanf("%d",&choice);
}
getch();
```

DOSBox 0.74, Cpu speed: max 100% cycles, Frameskip 0, Program: TC

1.Celsius to Fahrenheit

2.Fahrenhiet to Celsius

Enter tempertaure in celcius :23.56

The temp in fahrenheit is : 74.407997

Enter your choice :2

Enter tempertaure in fahrenheit :74.407997

The temp in celsius is : 23.559998

Enter your choice :1

Enter tempertaure in celcius :23.559998

The temp in fahrenheit is : 74.407997

Enter your choice :_