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Practical No: 1

Aim:- Write the program to understand the basic data types & 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 datatype ******
    printf ("\n Enter your roll number :");
    scanf ("%d ", & roll);
    printf ("\n Enter your name :");
    scanf ("%s", & name);
    printf ("\n Enter your mobile no:");
    scanf ("%d ", & Mob_no);
    printf ("\n Enter your grade: ");
    scanf ("%s", grade);
    printf ("\n Enter your address");
    scanf ("%s, & add);
```

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

Output :-


```
**** ****** Demonstration of data-types ********
Enter your roll number : 1786
Enter your name : Rachit
Enter your mobile number : 84548
Enter your grade : A
Enter your address : aaa
Enter your percentage : 54.16

Your roll number is : 1789
Your name is : Rohit
Your mobile number is : 84548
Your grade is : A
Your address is : aaa
Your percentage is : 54.160000
```

Practical No:- 2

A) 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",
    getch();
}
```

07/01/2020

Output :-

Enter the radius :- 3

The Area of circle is: 28.26900 |

B) 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();
}
```

Output:-

Enter 1st number 7
Enter 2nd number 5
7

c) Aim:- Write a C program on operators & expression

Theory:

a] Write a program to create a dynamic calculator

Algorithm:

Step1: Declare variable name for first & second number as integer

Step2: Now use scanf function to receive input from the user

Step3: Now do add two numbers given by user use the expression num1+num2.

Step4: Now do subtract two no:s given by use expression num1-num2.

Step5: Again use exp. num1*num2 if user wishes multiply the two inputs.

Step6: Use expression num1/num2 if user wishes to divide the two inputs.

Step7: Now use print function to display outp

Code:-

```
//dynamic calculator
#include<stdio.h>
#include<conio.h>
void main()
{
int num1,num2;
float add, sub, mul, div;
clrscr();
printf("\n 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 & %d is %f\n", num1,num2,add
printf("Subtraction of %d & %d is %f\n", num1,num2,sub
printf("Multiplication of %d & %d is %f\n", num1,num2,mul
printf("division of %d & %d is %f\n", num1,num2,div
getch();
}
```

Output:- Enter first number:- 5
Enter second number:- 5
Addition of 5 & 5 is 10
Subtraction of 5 & 5 is 0
Multiplication of 5 & 5 is 25
division of 5 & 5 is 1

Practical 3

A Aim:- W.A.P to find whether the entered year is leap or not.

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

Output: -

Enter any year :- 2020

The given year is a leap year

Enter any year :- 2019

The given year is not a leap year

B Aim:- Write a program to check wether the number entered by user is odd or even

```
//ODD & EVEN

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

Output :-

Enter any number : 4

it is an even number

Enter any number : 7

it is an odd number

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C Aim:- Write a program to find character is vowel or constant.

Code:- // Vowel or Constant:-

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

output:-

Enter any letter: A

The letter is Vowel

Enter any letter C

The letter is consonant

21/01/2020

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 no's till:");
  scanf("%d",&n);
  printf("All even no. from 1 to %d are
                                  \n",n)

  i=1;
  while (i<=n)
  {
     if (i%2==0)
     {
        printf("%d \n",i);
     }
     i++;
  }
  getch();
```

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

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, origin, rem, n=0;
 float result = 0.0;
 clrscr();
 printf("\n Enter an integer :");
 scanf("%d", & num);
 origin = num;
 while (origin != 0)
 {
   origin /= 10;
   ++n;
 }
 origin = num;
 while (origin != 0)
 {
  rem = origin % 10
  result += pow (rem, n);
  origin /= 10;
 }
 if ((int )result == num )
```

```
printf ("%d is an Armstrong number", num);
}
else
{
 printf ("%d is not an armstrong no.",num
 }
 getch();
}
```


*output :- Enter any integer : 371
371 is an Armstrong number.

Q) 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("\nEnter value to pattern");
  scanf("%d",&t);
  printf("\n 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++ ;
    }
    printf("\n");
  }
  getch();
}
```

04/02/2020

#output:- Enter the value to be patterned : 1
Enter no. of rows : 4

1

2 3

4 5 6

7 8 9 10

Practical-5

Aim:- Program on array

a] Write a C program to find the sum of 5 number (array)

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

Entered array elements are: 3 2 1 7 8

sum of elements is: 21

5) Write a C program input array function

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

output:-

Enter the number: 4

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 --> 5

The displayed array is
a[0] --> 2
a[1] --> 1
a[2] --> 3
a[3] --> 5

e 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("\n 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();
}
```

Output :-

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 sum of the elements of the array is 15
The largest number is : 5

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

```
#
#
Void main
{
  int arr[20], n, i, j;
  clrscr().
  printf("\n 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("\n the fibonacci series upto %d
                                terms is \n", n);
  for (i = 0; i<n; i++)
  {
    printf("%d\t", arr[i]);
  }
  getch();
}
```

Output:-

Enter the no. of terms :- 10

The fibonacci series upto 10 terms is

0
1
1
2
3
5
8
13
21
34

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

```
#
#
void main()
{
  int a[20][20];
  int row, col, i, j;
  clrscr();
  printf("\n Enter no. of rows :");
  scanf("%d", &row);
  printf("\n Enter no. of columns :");
  scanf("%d", &col);
  for (i=0; i<row; i++);
  {
    for (j=0; j<col; j++)
    {
      printf("\n Enter the a[%d][%d] no. of
                                elements =", i,j);
    }
  }
  printf("\n The displayed matrix is :\n");
  for(i=0; i<row; i++)
  {
    for(j=0; j<col; j++)
    {
      printf("%d %d", a[i][j]
```

```
print("\n");
}
getch();

}
```


Output:-

Enter no. of row: 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

11/02/2020

Aim:- Write a C program which demonstrate the use of getch, getch(), functn

source code

```
#include<stdio.h>
#include <conio.h>
void main()
{
        char ch;
        clrscr();
        printf(" Press any key to continue:")
        getch()
        print("\n Enter an alphabet: ");
        ch = getchar();
        printf("\n continue ");
        getchar();
}
```

Output :

press any key to continue :

Enter an alphabet : c

continue

b) # Aim :- Write a C program to demonstrate use of putch() or putchar()

source code

```
#include <stdio.h>
#include <conio.h>
void main()
{
        char ch = "a";
        putch(ch)
        putchar(ch);
        getch();
}
```

c) # Aim :- Write a C program to print a string.

source code

```
#include <stdio.h>
#include <conio.h>
#include <string.h>
void main()
{
        char a[20];
        clrscr();
        printf("Enter a string:");
        scanf("%s", a);
        printf("%s", a);
```