

A dark blue vertical bar on the left side of the page. A blue arrow points to the right from the bar, containing the date.

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PF lab Assignment

Lab#04

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Several thin, curved lines in dark blue and light grey originate from the bottom left corner and curve upwards and to the right.

Task 01

Ahmed answered 30% of the questions correctly. The test contained a total of 80 questions. Write a program to tell how many questions did Ahmed answer correctly.

Program & Output:

```
#include<stdlib.h>
int main()
{
    float percent = 30;
    float x = 80;
    float ans;
    ans=percent*x;
    float ans1=ans/100;

    printf("%.f",ans1);
}
```

24

Task 02

Write a program to find the sum of two integers without using '+' operator.

Program & Output:

```
#include <stdlib.h>
int main()
{
    printf("put 2 two numbers : ");
    int num1,num2;
    int sum;
    scanf("%d%d",&num1,&num2);
    sum=num1-(-num2);

    printf("%d",sum);
}
```

put 2 two numbers : 45
56
101

Task 03

Take relevant inputs from the user according to formula and calculate the area of:

1. Circle
2. Square
3. Rectangle

Program & Output:

```
#include<stdlib.h>
int main()
{
    float aoc,aos,aor,r,l,l1,h;
    printf("For Circle : ");
    printf("\n Radius : ");
    scanf("%f",&r);
    aoc=3.14*r*r;
    printf("Area of Circle = %.1f",aoc);

    printf("\n\nFor Square : ");
    printf("\n Lenght : ");
    scanf("%f",&l);
    aos=l*l;
    printf("Area of Square = %.1f",aos);

    printf("\n\nFor Rectangle : ");
    printf("\n Lenght : ");
    scanf("%f",&l1);
    printf(" Hieght : ");
    scanf("%f",&h);
    aor=l1*h;
    printf("Area of Rectangle = %.1f",aor);
}
```

For Circle :
Radius : 3
Area of Circle = 28.3

For Square :
Lenght : 45
Area of Square = 2025.0

For Rectangle :
Lenght : 4
Hieght : 4
Area of Rectangle = 16.0

Task 04

Write a program to take a number as user input and the check the following conditions

1. Number is greater than 50
2. Number is less than 50
3. Number is equal to fifty

Program & Output:

```
#include <stdlib.h>
int main()
{
    int x,y;
    printf("Enter a Number: ");
    scanf("%d",&x);

    y=x>50&&x>50;
    printf("%d greater ",y);
    y=x<50&&x<50;
    printf("\n%d lesser ",y);
    y=x==50&&x==50;
    printf("\n%d equal ",y);
}
```

```
Enter a Number: 89
1 greater
0 lesser
0 equal
```

Task 05

A students' report card needs to be developed.

Write a program that takes marks of 5 subjects each of 100 marks. The subjects are:

1. Math
2. Urdu
3. English
4. Islamiyah
5. Pakistan Studies

Program & Output:

```
#include <stdlib.h>
int main()
{
    float m,u,i,p,e;
    printf("Marks of MATH : ");
    scanf("%f",&m);
    printf("Marks of URDU : ");
    scanf("%f",&u);
    printf("Marks of ISL : ");
    scanf("%f",&i);
    printf("Marks of PAK STUDIES : ");
    scanf("%f",&p);
    printf("Marks of ENGLISH : ");
    scanf("%f",&e);
    float sum=m+u+i+p+e;
    float sum1=sum/500;
    float sum2=sum1*100;
    printf("%.1f",sum2);
}
```

```
Marks of MATH : 90
Marks of URDU : 78
Marks of ISL : 90
Marks of PAK STUDIES : 98
Marks of ENGLISH : 78
86.8
```

Task 06

Write a C program that performs the following tasks:

1. Take hours from user, convert it into minutes and seconds.
2. Take years from user, convert it into weeks and days.

Program & Output:

```
#include <stdio.h>

int main()
{
    float h,m,s,y,w,d;
    printf("Hours: ");
    scanf("%f",&h);
    printf("Years: ");
    scanf("%f",&y);

    m=h*60;
    s=h*3600;
    w=y*52.143;
    d=y*356;
    printf("\nMINUTES: %.1f",m);
    printf("\nSECONDS: %.1f",s);
    printf("\nWEEKS: %.1f",w);
    printf("\nDAYS: %.1f",d);
}
```

```
Hours: 1
Years: 1

MINUTES: 60.0
SECONDS: 3600.0
WEEKS: 52.1
DAYS: 356.0
```

```
Enter Binary Numbers :
0
1

AND GATE:
0 && 1 = 0
OR GATE:
0 || 1 = 1
NOT GATE:
0 ! 1 = 1
```

Task 07

Write a program to swap 2 numbers using a third variable.

Program & Output:

```
#include<stdlib.h>
int main()
{
    int x,y;
    printf("enter 1st Numer: ");
    scanf("%d",&x);
    printf("enter 2nd Numer: ");
    scanf("%d",&y);
    x=x+y;
    x=x-y;
    y=x+y;
    y=y-x;

    printf("x= %d y=%d\n(SWAPPED)",y,x);
}
```

```
enter 1st Numer: 34
enter 2nd Numer: 56
x= 56 y=34
(SWAPPED)
```

Task 08

Create a two-input truth table of AND gate, OR gate and Not gate using logical operators.

Program & Output:

```
#include<stdlib.h>
int main()
{
    int x,y,z;
    printf("Enter Binary Numbers :\n" );
    scanf("%d %d",&x,&y);

    printf("\nAND GATE: ");
    z=x&y;
    printf("\n%d && %d = %d ",x,y,z);

    printf("\nOR GATE: ");
    z=x||y;
    printf("\n%d || %d = %d ",x,y,z);

    printf("\nNOT GATE: ");
    z=!(x==y);
    printf("\n%d ! %d = %d ",x,y,z);
}
```

Task 09

Write a C program to Find out distance, coordinates of midpoint using distance formula.

Program & Output:

```
#include<stdlib.h>
#include<math.h>
int main()
{
    float x,y,x1,x2,y1,y2,sx,sy,s,d;

    printf("Values of (x1,y1): ");
    scanf("%f %f",&x1,&y1);
    printf("Values of (x2,y2): ");
    scanf("%f %f",&x2,&y2);

    x=x2-x1;
    y=y2-y1;
    sx=x*x;
    sy=y*y;
    s=sx+sy;
    d=sqrt(s);
    printf("Distance is %.1fm",d);

    x=x1+x2;
    y=y1+y2;
    int d1,d2;d1=x/2;d2=y/2;
    printf("\nMid piont= (%d,%d)",d1,d2);
}
```

```
Values of (x1,y1):
2
4
Values of (x2,y2):
5
6
Distance is 3.6m
Mid piont= (3,5)
```

Task 10

Write a C program to Find the Roots of a Quadratic Equation. Take user input values of b, a, c:

Program & Output:

```
#include<stdlib.h>
#include<math.h>
int main()
{
    int a,b,c;
    printf("Values of \"a\\\", \"b\\\", \"c\\\": \n");
    scanf("%d %d %d",&a,&b,&c);

    b=-1*b;
    float d=(b*b)-4*a*c;
    d=sqrt(d);
    float x=(b-d)/2;
    float y=(b+d)/2;

    printf("x=%.1f\n x=%.1f",x,y);
}
```

```
Values of "a","b","c":
1
-45
324
x=9.0
x=36.0
```