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**Subject: Programing Fundamentals LAB**

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## Problem: 1

Write a program that will print the multiplication table( from 1 to 10) of user choice.

```
#include<stdio.h>
int main()
{
    int number,result;
    printf("Enter a Number for multiplication table. \n");
    scanf("%d",&number);
    for(int i=1;i<=10;i++)
    {
        result=i*number;
        printf("%d * %d = %d \n",number,i,result);
    }
    return 0;
}
```

C:\Users\p22-9269\Desktop\Khizar\Pf lab\ex 4\1.exe

Enter a Number for multiplication table.

```
6
6 * 1 = 6
6 * 2 = 12
6 * 3 = 18
6 * 4 = 24
6 * 5 = 30
6 * 6 = 36
6 * 7 = 42
6 * 8 = 48
6 * 9 = 54
6 * 10 = 60
```


-----  
Process exited after 1.96 seconds with return value 0  
Press any key to continue . . .

## Problem 2:

Write a program in c that counts the number of digits in an integer.

```
#include<stdio.h>

int main()
{
    int  number;
    int count=0;
    printf("Enter a number \n");
    scanf("%d",&number);
    while(number != 0)
    {
        number=number/10;
        count=count+1;
    }
    printf("The digits of number are %d \n",count );
    return 0;
}
```

 C:\Users\p22-9269\Desktop\Khizar\Pf lab\ex 4\2.exe


```
Enter a number
4456
The digits of number are 4

-----
Process exited after 2.357 seconds with return value 0
Press any key to continue . . .
```

### Problem 3: Write a Program to Calculate Permutation( $nPr$ ) for given values of $n$ and $r$

```
#include<stdio.h>
int main()
{
    int n,r , Nr,N1=1,N2=1 ;
    printf("Enter value of n  \n");
    scanf("%d",&n);
    printf("Enter value of r  \n");
    scanf("%d",&r);
    Nr=n-r;
    if (n>0)
    {
        for(int i=1;i<=n;++i)
        {
            N1=N1*i;
        }
        {
            for(int i=1;i<=Nr;i++)
            N2=N2*i;
        }

        int result =N1/N2;
        printf("npr for n=%d & r= %d = %d",n,r,result);
    }
    else
    {
        printf("The factorial on negitive number is not possilbe \n");
    }
    return 0;
}
```

 C:\Users\p22-9269\Desktop\Khizar\Pf lab\ex 4\3.exe

```
Enter value of n
5
Enter value of r
4
npr for n=5 & r= 4 = 120
-----
Process exited after 2.306 seconds with return value 0
Press any key to continue . . .
```

### Problem 4: Modify a calculator you made in the last lab. This time your function ask user to

enter the number and the operation you want to perform (+,-,\*,/) after the operation is performed your program should ask the user whether you want to continue (y/n)? your program will exit only when user enter "n"

```
#include<stdio.h>
int main()
{
    int sum, product, divide,subtract;
    int a , b ;
    char c, x;

do{
    printf("Enter the operation you want to perform (*,+,-,/)\n ");
    scanf("\n%c",&c);
    printf("Enter value of a\n ");
    scanf("%d",&a);
    printf("Enter value of b\n ");
    scanf("%d",&b);
    if(c=='+')
    {
        sum=a+b;
        printf("%d + %d = %d\n", a , b , sum );
    }
else if(c=='-')
    {
        subtract=a-b;
        printf("%d - %d = %d\n", a , b , subtract );
    }
else if(c=='*')
    {
        product=a*b;
        printf("%d * %d = %d\n", a , b , product );
    }
else
    {
        divide=a/b;
        printf("%d / %d = %d\n", a , b , divide );
    }
    printf("press y if you want to continue esle n\n");
    scanf("\n%c",&x);
}
while(x=='y');
return 0;
}
```

```

Enter the operation you want to perform (*,+, -, /)
+
Enter value of a
4
Enter value of b
4
4 + 4 = 8
press y if you want to continue esle n
y
Enter the operation you want to perform (*,+, -, /)
-
Enter value of a
40
Enter value of b
36
40 - 36 = 4
press y if you want to continue esle n
n

-----
Process exited after 16.27 seconds with return value 0
Press any key to continue . . .

```

Problem 5:

Find the sum of the first 10 numbers that are divisible by 3 and 5.

```

#include<stdio.h>
int main()
{
    int sum=0;
    int counter=10;
    int N1,N2;


    for(int i=1;counter!=0;i++)
    {
        N1=i%3;
        N2=i%5;

        if(N1==0 && N2==0)
        {
            sum=sum+i;
            counter=counter-1;
        }
    }

    printf("The sum of 10 numbers which are divisible by 3 and 5 is %d.\n",sum);

    return 0;
}

```

 C:\Users\p22-9269\Desktop\Khizar\Pf lab\ex 4\5.exe

The sum of 10 numbers which are divisible by 3 and 5 is 825.

-----

Process exited after 0.05209 seconds with return value 0

Press any key to continue . . .