

Evaluation 1

Simple C Programs – Lab 1

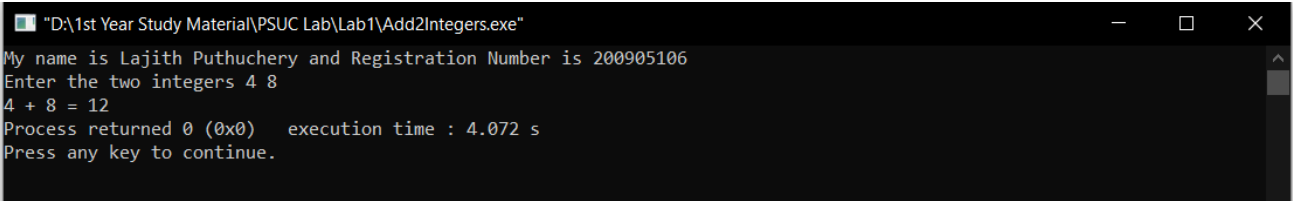
1. Write a C program to add two integers *a* and *b* read through the keyboard. Display the result using third variable *sum*.

Program:

```
#include <stdio.h>

int main()
{
    int sum,a,b;
    printf("My name is Lajith Puthuchery and Registration Number is 200905106\n");
    printf("Enter the two integers");
    scanf("%d %d", &a, &b);
    sum = a + b;
    printf("%d + %d = %d ",a,b,sum);
    return 0;
}
```

Output:



```
"D:\1st Year Study Material\PSUC Lab\Lab1\Add2Integers.exe"
My name is Lajith Puthuchery and Registration Number is 200905106
Enter the two integers 4 8
4 + 8 = 12
Process returned 0 (0x0)   execution time : 4.072 s
Press any key to continue.
```

2. Write a C program to find the sum, difference, product and quotient of 2 numbers.

Program:

```
#include <stdio.h>

int main()
{
    int a,b;
    printf("My name is Lajith Puthuchery and Registration Number is 200905106\n");
    printf("Enter two integers");
```

```

scanf("%d %d",&a, &b);

int sum, diff, prod, quot, mod;

sum = a+b;

printf("The sum of %d and %d is %d\n",a,b,sum);

diff = a-b;

printf("The difference of %d and %d is %d\n",a,b,diff);

prod = a*b;

printf("The product of %d and %d is %d\n",a,b,prod);

if(b == 0)
{
    printf("Divison by 0 is not defined");
}
else
{
    quot = a/b;
    mod = a%b;
    printf("The quotient of %d and %d is %d\n",a,b,quot);
    printf("The remainder of %d and %d is %d",a,b,mod);
}

return 0;
}

```

Output:

```

D:\1st Year Study Material\PSUC Lab\Lab1\SumDiffProdQuot.exe
My name is Lajith Puthuchery and Registration Number is 200905106
Enter two integers 6 9
The sum of 6 and 9 is 15
The difference of 6 and 9 is -3
The product of 6 and 9 is 54
The quotient of 6 and 9 is 0
The remainder of 6 and 9 is 6
Process returned 0 (0x0) execution time : 4.213 s
Press any key to continue.

```

3. Write a C program to print the ASCII value of a character

Program:

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

```
int main()
```

```
{
```

```

char c;

printf("My name is Lajith Puthuchery and Registration Number is 200905106\n");

printf("Enter a character");

scanf("%c",&c);

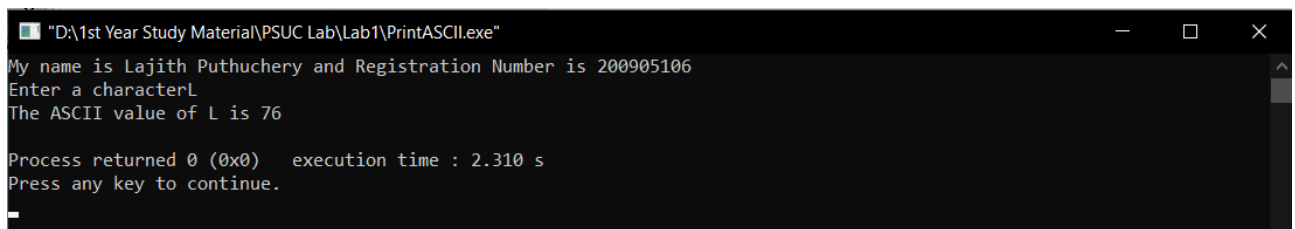
printf("The ASCII value of %c is %d\n",c,c);

return 0;

}

```

Output:



```

"D:\1st Year Study Material\PSUC Lab\Lab1\PrintASCII.exe"
My name is Lajith Puthuchery and Registration Number is 200905106
Enter a characterL
The ASCII value of L is 76

Process returned 0 (0x0)   execution time : 2.310 s
Press any key to continue.

```

4. Write a C program to display the size of the data type int, char, float, double, long int and long double using size of () operator.

Program:

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

```
int main()
```

```
{
```

```
int intdata;
```

```
float floatdata;
```

```
char chardata;
```

```
double doubledata;
```

```
long int longint;
```

```
long double longdouble;
```

```
printf("My name is Lajith Puthuchery and Registration Number is 200905106\n");
```

```
printf("Size of int: %zu bytes\n", sizeof(intdata));
```

```
printf("Size of float: %zu bytes\n", sizeof(floatdata));
```

```
printf("Size of char: %zu byte\n", sizeof(chardata));
```

```
printf("Size of double: %zu bytes\n", sizeof(doubledata));
```

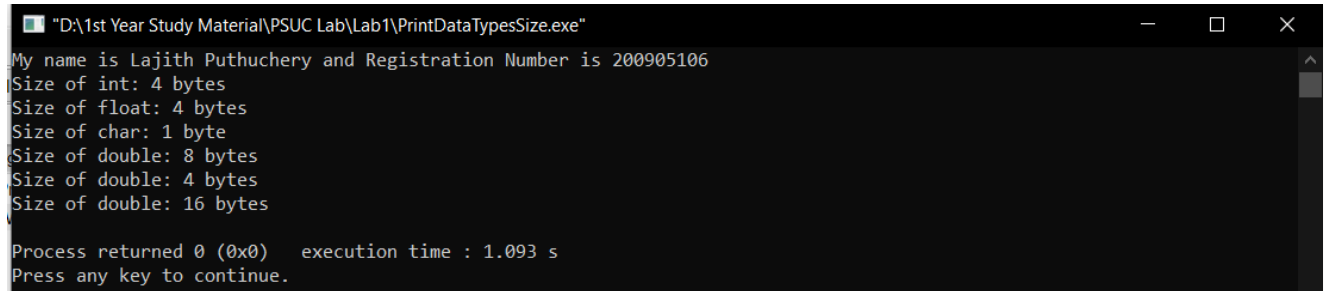
```
printf("Size of double: %zu bytes\n", sizeof(longint));
```

```
printf("Size of double: %zu bytes\n", sizeof(longdouble));
```

```
return 0;
```

```
}
```

Output:



```
"D:\1st Year Study Material\PSUC Lab\Lab1\PrintDataTypesSize.exe"
My name is Lajith Puthuchery and Registration Number is 200905106
Size of int: 4 bytes
Size of float: 4 bytes
Size of char: 1 byte
Size of double: 8 bytes
Size of double: 4 bytes
Size of double: 16 bytes
Process returned 0 (0x0) execution time : 1.093 s
Press any key to continue.
```

5. Input P , N and R to compute simple and compound interest. [Hint : $SI = PNR/100$, $CI = P(1+R/100)^N - P$]

Program:

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

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

```
int main()
```

```
{
```

```
int n,r;
```

```
float si,ci,p;
```

```
printf("My name is Lajith Puthuchery and Registration Number is 200905106\n");
```

```
printf("Enter the principal amount, time period and rate of interest respectively");
```

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

```
si = (p*n*r)/100;
```

```
ci = p*pow(1+r/100,n)-p;
```

```
printf("The Simple Interest is %f\n",si);
```

```
printf("The Compound Interest is %f",ci);
```

```
return 0;
```

```
}
```

Output:

```
"D:\1st Year Study Material\PSUC Lab\Lab1\SimpleCompoundInterest.exe"
My name is Lajith Puthuchery and Registration Number is 200905106
Enter the principal amount, time period and rate of interest respectively 3450 1 2
The Simple Interest is 69.000000
The Compound Interest is 0.000000
Process returned 0 (0x0)   execution time : 9.567 s
Press any key to continue.
```

6. Input radius to find the volume and surface area of a sphere. [Hint: $\text{volume} = (4\pi r^3)/3$, $\text{Area} = 4\pi r^2$]

Program:

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

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

```
#define PI 3.142857
```

```
int main()
```

```
{
```

```
    int r;
```

```
    float vol, area;
```

```
    printf("My name is Lajith Puthuchery and Registration Number is 200905106\n");
```

```
    printf("Enter the radius of the circle");
```

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

```
    vol = (4*PI*pow(r,3))/3;
```

```
    area = 4*PI*pow(r,2);
```

```
    printf("The volume of the sphere of radius %d is %f\n",r,vol);
```

```
    printf("The surface area of the sphere of radius %d is %f",r,area);
```

```
    return 0;
```

```
}
```

Output:

```
"D:\1st Year Study Material\PSUC Lab\Lab1\Sphere.exe"
My name is Lajith Puthuchery and Registration Number is 200905106
Enter the radius of the circle 7
The volume of the sphere of radius 7 is 1437.333252
The surface area of the sphere of radius 7 is 616.000000
Process returned 0 (0x0)   execution time : 3.277 s
Press any key to continue.
```

7. Convert the given temperature in Fahrenheit to Centigrade. [Hint: $C = 5/9(F - 32)$]

Program:

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

```
int main()
```

```
{
```

```
    float tempC, tempF;
```

```
    printf("My name is Lajith Puthuchery and Registration Number is 200905106\n");
```

```
    printf("Enter the temperature in Fahrenheit");
```

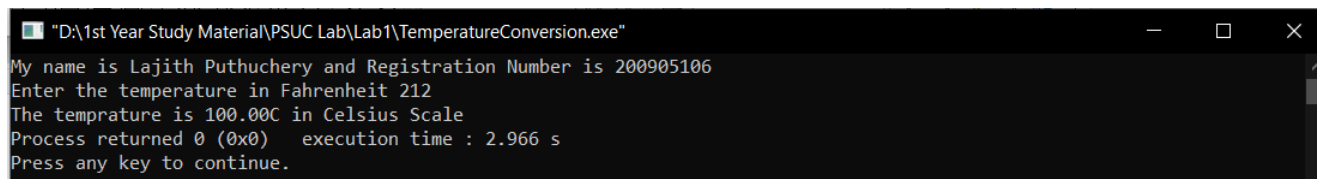
```
    scanf("%f",&tempF);
```

```
    tempC = (5.0/9.0)*(tempF-32);
```

```
    printf("The temprature is %.2fC in Celsius Scale",tempC);
```

```
    return 0;
```

```
}
```

Output:

```
"D:\1st Year Study Material\PSUC Lab\Lab1\TemperatureConversion.exe"
My name is Lajith Puthuchery and Registration Number is 200905106
Enter the temperature in Fahrenheit 212
The temprature is 100.00C in Celsius Scale
Process returned 0 (0x0)   execution time : 2.966 s
Press any key to continue.
```

8. Write a C program to evaluate the following expression for the values $a = 30$, $b = 10$, $c = 5$, $d = 15$

(i) $(a + b) * c / d$

(ii) $((a + b) * c) / d$

(iii) $a + (b * c) / d$

(iv) $(a + b) * (c / d)$

Program:

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

```
int main()
```

```
{
```

```
    printf("My name is Lajith Puthuchery and Registration Number is 200905106\n");
```

```
    int a=30, b=10, c=5, d=15;
```

```
    int exp1, exp2, exp3, exp4;
```

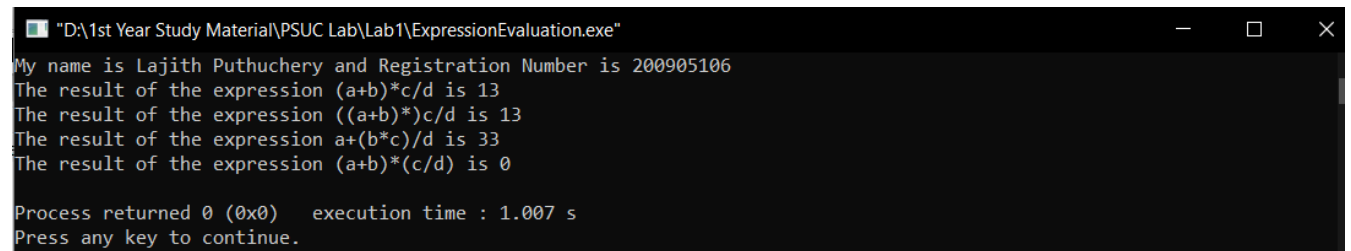
```
    exp1 = (a+b)*c/d;
```

```
    printf("The result of the expression (a+b)*c/d is %d\n",exp1);
```

```
    exp2 = ((a+b)*c)/d;
```

```
printf("The result of the expression ((a+b)*c/d is %d\n",exp2);  
exp3 = a + (b*c)/d;  
printf("The result of the expression a+(b*c)/d is %d\n",exp3);  
exp4 = (a+b)*(c/d);  
printf("The result of the expression (a+b)*(c/d) is %d\n",exp4);  
  
return 0;  
}
```

Output:



```
"D:\1st Year Study Material\PSUC Lab\Lab1\ExpressionEvaluation.exe"  
My name is Lajith Puthuchery and Registration Number is 200905106  
The result of the expression (a+b)*c/d is 13  
The result of the expression ((a+b)*c/d is 13  
The result of the expression a+(b*c)/d is 33  
The result of the expression (a+b)*(c/d) is 0  
  
Process returned 0 (0x0)   execution time : 1.007 s  
Press any key to continue.
```