CSE102L Computer Programming Lab

LAB # 8

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Registration No :

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Class Section: C

"On my honor, as student of University of Engineering and Technology, I have neither given nor received unauthorized assistance on this academic work."

JUly 24 , 2020

Department of Computer Systems Engineering

University of Engineering and Technology, Peshawar

Pointers and References

Task 1:

Title:

Write a C++ program where you take two values in two variables from user, add the values of the two variables and put it into a third variable using a pointer you must use only one pointer.

Code:

```cpp
#include<iostream>

using namespace std;

int main()
{
int val1, val2, sum = 0, *ptr = &sum;
cout<<"Enter first value: ";
cin>>val1;
cout<<"Enter second value: ";
cin>>val2;
sum = val1 + val2;
cout<<"Sum of "<<val1<<" and "<<val2<<" is "<<*ptr;
return 0;
}
```

Output:

```
C:\Users\Pc\Documents\CPP Lab pactice\pointer_2values_sum.exe
Enter first value: 4
Enter second value: 6
Sum of 4 and 6 is 10
--------------------------------
Process exited after 3.22 seconds with return value 0
Press any key to continue . . .
```

Task 2:

Title:

Write a C++ program where you take two values from user in two variables, swaps the
values of the variables using references (&).

Code:

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

void swap(int& a, int& b); using
namespace std;

int main() {

        int val1, val2; cout<<"Enter
        first value: "; cin>>val1;

        cout<<"Enter second value: ";
        cin>>val2;

        cout<<"Values Before swaping:\nval1 = "<<val1<<", val2 = "<<val2<<endl;
        swap(val1, val2);

        cout<<"After swaping\nval1 = "<<val1<<" val2 = "<<val2;

        return 0;

}

void swap(int& a, int& b) {

        a += b;

        b = a - b;

        a = a - b

        }
```

Task 3:

Title:

Write a C++ program where you take a value in a variable from user increment that value by 5 using a pointer in a for loop and display its play using pointer.

Code:

```cpp
#include<iostream>

using namespace std;

int main()
{
int var, *ptr = &var;

cout<<"Enter a value = ";
 cin>>var;

for(int i = 0; i < 5; i++)
{
(*ptr)++;
}
cout<<"\n\nThe incremented Value by 5 is = "<<*ptr;
return 0;
}
```

```
Enter a value = 4
2

The incremented Value by 5 is = 9
--------------------------------
Process exited after 1.698 seconds with return value 0
Press any key to continue . . .
```

Task 4:

Title:

Write a C++ program where you take your first name from user in a string variable using pointer edit that string to your last name and then display that string variable (your last name must be hard coded in a separate string variable).

Code:

```cpp
#include<iostream>
#include<string.h>
using namespace std;
int main()
 {
  string firstName,
 *ptr = &firstName,
  secondName = " Fakhar";
 cout<<"Enter your First Name: ";
cin>>firstName;
cout<<"\n\nYour Name before editing = "<<firstName;
*ptr = firstName + secondName;
cout<<"\n\n\nYour Name after editing = "<<firstName;
return 0; }
```

Output:

Task 5:

Title:

Display 1 to n numbers using pointer, user must enter the n.

Code:

```cpp
#include<iostream>

using namespace std;
int main()
{
int a, b = 1, *ptr = &b;
cout<<"Enter a number: ";
cin>>a;
cout<<"\n\nThe list from 1 to "<<a<<" is = ";
while(*ptr <= a)
        {
        cout<<*ptr<<" ";

        (*ptr)++;
        }
  return 0;
```

```
C:\Users\Pc\Documents\CPP Lab pactice\ptr_1_to_n_nums.exe
Enter a number: 9


The list from 1 to 9 is = 1 2 3 4 5 6 7 8 9
---------------------------------
Process exited after 1.736 seconds with return value 0
Press any key to continue . . .
```

Task 6:

Title:

Add even numbers from 1 to n using pointers user must enter n.

Code:

```cpp
#include<iostream>
using namespace std;
int main() {

        int a, b = 2, *ptr = &b, sum = 0, *ptrsum = &sum;
        cout<<"Enter a number: ";

        cin>>a; while(*ptr
        <= a) {

                *ptrsum += *ptr;

                *ptr += 2;

        }

        cout<<"The sum of even numbers from 1 to "<<a<<" = "<< *ptrsum<<endl;

        return 0;

}
```

```
C:\Users\Pc\Documents\CPP Lab pactice\ptr_sum_even_nums.exe

Enter a number: 6

The sum of even numbers from 1 to 6 = 12

------------------------------------
Process exited after 2.516 seconds with return value 0
Press any key to continue . . .
```