

University of engineering & technology Peshawar



COMPUTER PROGRAMMING -LAB

Lab report # 8

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Section: B

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Pointer and reference

Task 1:

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.

Source code:

```
1  #include <iostream>
2  using namespace std;
3  int main()
4  {
5      int num1,num2; //variable 1&2.
6      cout<<"please enter num 1\n";
7      cin>>num1;
8      cout<<"please enter num 2\n";
9      cin>>num2;
10     int num3; //variable 3
11     num3=num1+num2;
12     int *ptr{&num3}; //pointer initialization
13     cout<<"the address of the pointer = "<<ptr<<endl;
14     cout<<"the value of the pointer = "<<*ptr;
15     return 0;
16
17 }
```

Compilation:

```
C:\Users\AshfaqAhmad\Documents\tttt1111.exe
please enter num 1
45
please enter num 2
66
the address of the pointer = 0x6ffdfc
the value of the pointer = 111
-----
Process exited after 4.999 seconds with return value 0
Press any key to continue . . .
```

Task 2:

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

Source code:

```
tttt2222.cpp
1  #include <iostream>
2  using namespace std;
3  int swapfunc(int*,int*);
4  int main()
5  {
6      int num1,num2;
7      cout<<"please enter num 1\n";
8      cin>>num1;
9      cout<<"please enter num 2\n";
10     cin>>num2;
11     cout<<"the value of num 1 before swapping = "<<num1<<endl;
12     cout<<"the value of num 2 before swapping = "<<num2<<endl;
13     swapfunc(&num1,&num2);
14     return 0;
15 }
16 int swapfunc(int*num1,int*num2)
17 {
18     int *ptr{0};
19     ptr=num1;
20     num1=num2;
21     num2=ptr;
22     cout<<"the value of num 1 after swapping = "<<*num1<<endl;
23     cout<<"the value of num 2 after swapping = "<<*num2;
24     return 0;
25 }
26 }
```

Compilation:

```
C:\Users\AshfaqAhmad\Documents\tttt2222.exe
please enter num 1
6
please enter num 2
7
the value of num 1 before swapping = 6
the value of num 2 before swapping = 7
the value of num 1 after swapping = 7
the value of num 2 after swapping = 6
-----
Process exited after 7.557 seconds with return value 0
Press any key to continue . . .
```

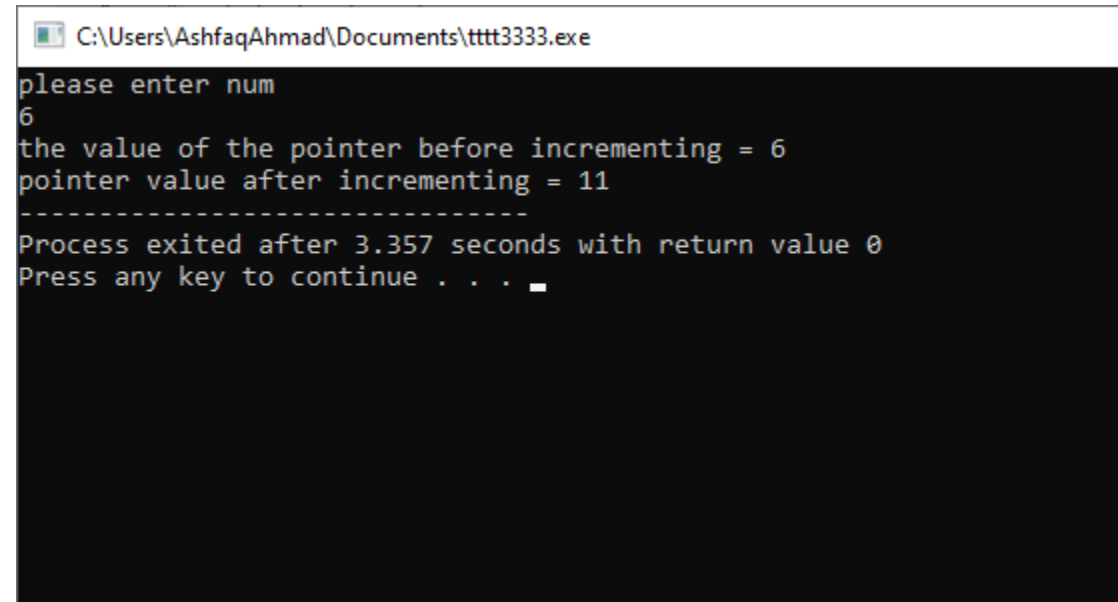
Task 3:

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

Source code:

```
1  #include <iostream>
2  using namespace std;
3  int main()
4  {
5      int num;
6      cout<<"please enter num\n";
7      cin>>num;
8      int *ptr=&num; //declearing pointer
9      cout<<"the value of the pointer before incrementing = "<<*ptr<<endl;
10     for (int i=1; i<=5; i++)
11     {
12         ++(*ptr); //or (*ptr)++
13     }
14     cout<<"pointer value after incrementing = "<<*ptr;
15     return 0;
16 }
```

Compilation:



```
C:\Users\AshfaqAhmad\Documents\tttt3333.exe
please enter num
6
the value of the pointer before incrementing = 6
pointer value after incrementing = 11
-----
Process exited after 3.357 seconds with return value 0
Press any key to continue . . .
```

Task 4:

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).

Source code:

```
ttt4444.cpp
31 #include <iostream>
2  #include <string>
3  using namespace std;
4  int main()
5  {
6      string name1;
7      cout<<"please enter your first name\n";
8      cin>>name1;
9      string *ptr{&name1}; //pointer initialization (refrencening)
10     cout<<"the address of your first name in memory = "<<ptr<<endl;
11     cout<<"your first name before editing is\n"<<*ptr<<endl;
12     string name2="ahmad";
13     *ptr=name2; //it is dereferencing
14     cout<<"your last name after editing is\n";
15     cout<<*ptr;
16     return 0;
17 }
18
19 }
```

Compilation:

```
C:\Users\AshfaqAhmad\Documents\ttt4444.exe
please enter your first name
ashfaq
the address of your first name in memory = 0x6ffdf0
your first name before editing is
ashfaq
your last name after editing is
ahmad
-----
Process exited after 6.098 seconds with return value 0
Press any key to continue . . .
```

Task 5:

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

Source code:

```
ttt5555.cpp
1  #include <iostream>
2  using namespace std;
3
4  void print(int *p)  //function for printing out
5  {
6      for (int i=1; i<=*p; i++)
7      {
8          cout<<i<<" ";
9          if(i%5==0)
10             cout<<endl;
11         }
12     }
13
14     int main()
15     {
16         int num;
17         cout<<"please enter integer num\n";
18         cin>>num;
19         int *ptr{&num};
20         print(ptr);
21
22         return 0;  //passing pointer to the void function
23     }
```

Compilation:

```
C:\Users\AshfaqAhmad\Documents\ttt5555.exe
please enter integer num
15
1 2 3 4 5
6 7 8 9 10
11 12 13 14 15

-----
Process exited after 3.005 seconds with return value 0
Press any key to continue . . .
```

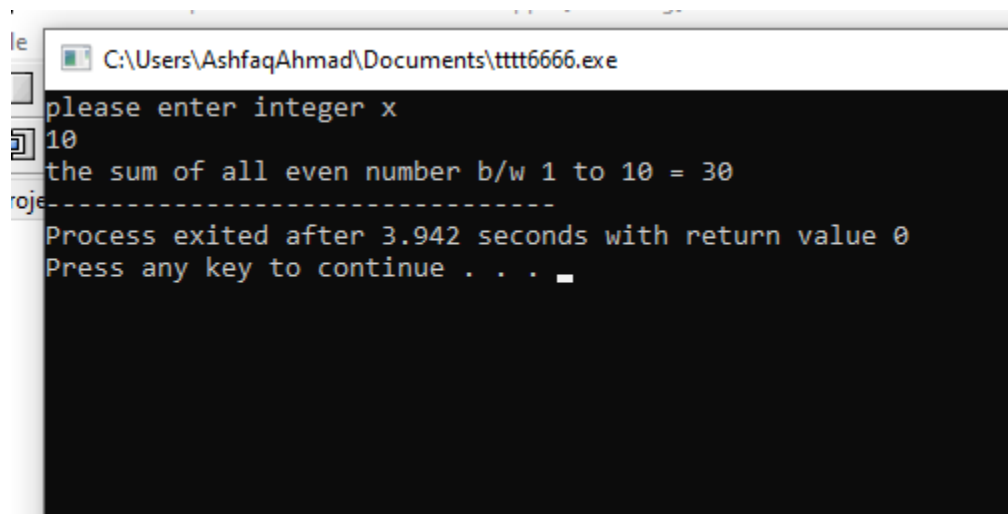
Task 6:

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

Source code:

```
[*] tttt6666.cpp
1  #include <iostream>
2  using namespace std;
3  int main()
4  {
5      int x, sum=0;
6      cout<<"please enter integer x\n";
7      cin>>x;
8      int *ptr{&x};
9      for (int i=1; i<=*ptr; i++)
10     {
11         if(i%2==0)
12         {
13             sum=sum+i;
14         }
15     }
16     cout<<"the sum of all even number b/w 1 to "<<*ptr<<" = "<<sum;
17     return 0;
18 }
```

Compilation:



```
le C:\Users\AshfaqAhmad\Documents\TTTT6666.exe
please enter integer x
10
the sum of all even number b/w 1 to 10 = 30
-----
Process exited after 3.942 seconds with return value 0
Press any key to continue . . .
```

The end