

## Experiment 2

### Reference Variables, Inline Functions

Q1) Write a c++ program to assign a value to a variable indirectly using a reference variable.

```
1  #include<iostream>
2  using namespace std;
3  void indirectVariable(int & x){
4      cout<<x<<endl;
5  }
6  int main(){
7      int a=90;
8      indirectVariable(a);
9      return 0;
10 }
```

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```
shyam@shyam-HP-Laptop-15-da0xxx:~/Desktop/oopLAB/laboratory2/programs$ g++ 1.cpp -o 1
shyam@shyam-HP-Laptop-15-da0xxx:~/Desktop/oopLAB/laboratory2/programs$ ./1
90
shyam@shyam-HP-Laptop-15-da0xxx:~/Desktop/oopLAB/laboratory2/programs$ █
```

Q2) Implement functions void increment(int); void increment1(int \*) and void increment2 (int&); that increments the value of an integer by 1. Check whether these functions work properly or not by calling them inside the main function.

```
1  #include<iostream>
2  using namespace std;
3  void increment(int x){ x++; cout<<x<<endl; }
4  void increment1(int *x){
5      int &a=*x;
6      a++;
7      cout<<a<<endl;
8  }
9  void increment2(int & x){    cout<<x<<endl; }
10 int main(){
11     int a=5;
12     increment(a);
13     increment1(&a);
14     increment2(a);
15 }
```

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```
shyam@shyam-HP-Laptop-15-da0xxx:~/Desktop/oopLAB/laboratory2/programs$ g++ 2.cpp -o 1
shyam@shyam-HP-Laptop-15-da0xxx:~/Desktop/oopLAB/laboratory2/programs$ ./1
6
6
6
shyam@shyam-HP-Laptop-15-da0xxx:~/Desktop/oopLAB/laboratory2/programs$ █
```

Q3) Write a swap function to swap two values of variable passing pointer

and passing reference variable.

```
1  #include<iostream>
2  using namespace std;
3  void swap(int *a,int *b){
4      cout<<"Value of a is :"<<*a<<endl;
5      cout<<"Value of b is :"<<*b<<endl;
6      int *temp; temp=a; a=b; b=temp;
7      cout<<"Value of a after swap is :"<<*a<<endl;
8      cout<<"Value of b after swap is :"<<*b<<endl;
9  }
10 int main(){
11     int a=5,b=10;
12     swap(&a,&b);
13     return 0;
14 }
```

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```
shyam@shyam-HP-Laptop-15-da0xxx:~/Desktop/oopLAB/laboratory2/programs$ g++ 3.cpp -o 1
shyam@shyam-HP-Laptop-15-da0xxx:~/Desktop/oopLAB/laboratory2/programs$ ./1
Value of a is :5
Value of b is :10
Value of a after swap is :10
Value of b after swap is :5
shyam@shyam-HP-Laptop-15-da0xxx:~/Desktop/oopLAB/laboratory2/programs$ █
```

Q5) Write a function that increments the value of each element of the array by 1 passing reference to an entire array as the function parameter. Call this function from the main function.

```
1  #include<iostream>
2  using namespace std;
3  int increment(int &a){ a++; return(a); }
4  int main(){
5      int arr[10],n;
6      cout<<"enter the array length\n";
7      cin>>n;
8      for(int i=0;i<n;i++){
9          cout<<"Enter "<<i+1<<" array element"<<endl;
10         cin>>arr[i];
11     }
12     for(int i=0;i<n;i++){
13         cout<<i+1<<" array element is\n";
14         cout<<increment(arr[i])<<endl;
15     }
16 }
```

```

shyam@shyam-HP-Laptop-15-da0xxx:~/Desktop/oopLAB/laboratory2/programs$ g++ 5.cpp -o 1
shyam@shyam-HP-Laptop-15-da0xxx:~/Desktop/oopLAB/laboratory2/programs$ ./1
enter the array length
2
Enter 1 array element
1
Enter 2 array element
2
1 array element is
2
2 array element is
3
shyam@shyam-HP-Laptop-15-da0xxx:~/Desktop/oopLAB/laboratory2/programs$ █

```

## Example 1)

```

1  #include<iostream>
2  using namespace std;
3  void showstat(int &cur){
4      static int nstatic=0;
5      nstatic+=cur;
6      cout<<"nStatic is "<<nstatic<<endl;
7  }
8  int main(){
9      for(int i=0;i<5;i++)
10         showstat(i);
11         return 0;
12     }

```

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Focus folder in explorer (ctrl + click)

```

shyam@shyam-HP-Laptop-15-da0xxx:~/Desktop/oopLAB/laboratory2/examples$ g++ example1.cpp -o 1
shyam@shyam-HP-Laptop-15-da0xxx:~/Desktop/oopLAB/laboratory2/examples$ ./1
nStatic is 0
nStatic is 1
nStatic is 3
nStatic is 6
nStatic is 10
shyam@shyam-HP-Laptop-15-da0xxx:~/Desktop/oopLAB/laboratory2/examples$ █

```

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Signature :-

Date:-