

Lecture (5)

" Programming Essentials in C++ "

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Postfix

```
8  ****
9  #include <iostream>
10
11  using namespace std;
12
13  int main()
14  {
15
16      int x=3;
17      cout<<x++;
18      return 0;
19  }
```

3

Postfix

```
7
8  ****
9  #include <iostream>
10
11  using namespace std;
12
13  int main()
14  {
15
16      int x=3;
17      cout<<x++ <<endl;
18      cout<<x;
19      return 0;
20  }
```

3

4

Prefix

```
8  ****  
9  #include <iostream>  
10  
11  using namespace std;  
12  
13  int main()  
14  {  
15  
16      int x=3;  
17      cout<<++x<<endl;  
18      return 0;  
19  }
```

Prefix

```
8  ****  
9  #include <iostream>  
10  
11  using namespace std;  
12  
13  int main()  
14  {  
15  
16      int x=3;  
17      cout<<++x<<endl;  
18      cout<<x;  
19      return 0;  
20  }
```

4

4

Break & Continue statements

- Used with loops:

1) For

2) While

3) Do while

Break → Exit the loop

Continue → stop and continue (Skip)

Break statement

```
8  ****
9  #include <iostream>
10
11 using namespace std;
12
13 int main()
14 {
15     for (int i=0;i<10;i++)
16     {
17         if(i==5)
18         {
19             break;
20         }
21         cout<<"i="<<i<<endl;
22     }
23     return 0;
24 }
```

i=0
i=1
i=2
i=3
i=4

Continue statement

```
8  ****
9  #include <iostream>
10
11 using namespace std;
12
13 int main()
14 {
15     for (int i=1;i<5;i++)
16     {
17         if(i==3)
18         {
19             continue;
20         }
21         cout<<"i="<<i<<endl;
22     }
23     return 0;
24 }
```

i=1
i=2
i=4

Array Benefits

int x=1;

int y=3;

int z=4;

int d=5;

int c=6;



int x[5] = {1,3,4,5,6} ;

Syntax

data_type **array_name**[**size**];

↑
int float
double ... ect

↑
same as
variable and
functions

↑
integer (1, 2, 3 ...ect)

Declare Array

<datatype nameArray[size] = {value1 , value2 , etc};

1

int x[5] = {1,2,3,4,5};

2

<datatype nameArray[size] ;

int x[5] ;

Declare Array

3

```
datatype nameArray[ ] = {value1 , value2 , etc};
```

```
int x[ ] = {1,2,3,4,5};
```

Declare Array

```
8  ****  
9  #include <iostream>  
10  
11  using namespace std;  
12  
13  int main()  
14  {  
15      int x[4]={2,3,4,5};  
16      cout<<x[0]<<endl;  
17      return 0;  
18  }
```

Diagram illustrating array declaration and indexing:

- Line 13: `int main()`
- Line 14: `{`
- Line 15: `int x[4]={2,3,4,5};`
 - Index 0 points to the first element (2).
 - Index 1 points to the second element (3).
 - Index 2 points to the third element (4).
 - Index 3 points to the fourth element (5).
- Line 16: `cout<<x[0]<<endl;`
- Line 17: `return 0;`
- Line 18: `}`

Declare Array

```
8  ****
9  #include <iostream>
10
11  using namespace std;
12
13  int main()
14  {
15  int x[4]={2,3,4,5};
16  cout<<x[0]<<endl;
17  cout<<x[1]<<endl;
18  cout<<x[2]<<endl;
19  cout<<x[3]<<endl;
20  return 0;
21 }
```

2
3
4
5

Access value of an array

```
int x[3]={5,3,6};
```

```
for ( int i=0; i<3; i++)  
{
```

```
    Cout << x[ i ] <<endl;
```

```
}
```

0	1	2
5	3	6

i = 0 x = [0]

i = 1 x = [1]

i = 2 x = [2]

i = 3

Access value of an array

```
8  ****
9  #include <iostream>
10
11 using namespace std;
12
13 int main()
14 {
15     int x[4]={2,3,4,5};
16     for (int i=0;i<3;i++)
17     {
18         cout<<x[i]<<endl;
19     }
20
21     return 0;
22 }
```

2
3
4

Access value of an array (Postfix)

```
8
9  #include <iostream>
10
11  using namespace std;
12
13  int main()
14  {
15  int x[4]={2,3,4,5};
16  for (int i=0;i<4;i++)
17  {
18      x[i]++;
19  }
20  for (int i=0;i<4;i++)
21  {
22      cout<<x[i]<<endl;
23  }
24
25  return 0;
26  }
```

3
4
5
6

Access value of an array (Prefix)

```
8  ****
9  #include <iostream>
10
11  using namespace std;
12
13  int main()
14  {
15      int x[4]={2,3,4,5};
16      for (int i=0;i<4;i++)
17      {
18          ++x[i];
19      }
20      for (int i=0;i<4;i++)
21      {
22          cout<<x[i]<<endl;
23      }
24
25      return 0;
26  }
```

3
4
5
6

*Thank
you*

