MA122 - Computer Programming and Apllications

Indian Institute of Space Science and Technology

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Lecture 13

Switch statement


```
1
2  switch (integer-expression)
3  {
4
5  case label1:statement(s)
6  case label2:statement(s)
7  ...
8  default    : statement(s)
9
10 }
```

Switch statement


```
1  //  -- using the switch statement
2  #include <iostream>
3  using namespace std;
4  void showmenu(); // function prototypes
5  void report();
6  void comfort();
7  int main()
8  {
9    showmenu();
10   int choice;
11   cin >> choice;
12   while (choice != 5)
13   {
14     switch(choice)
15     {
16       case 1 :   cout << "\a\n";
17         break;
```

Switch statement


```
1       case 2 :   report();
2         break;
3       case 3 :   cout << "The boss was in all day.\n";
4         break;
5       case 4 :   comfort();
6         break;
7       default :  cout << "That's not a choice.\n";
8     }
9     showmenu();
10    cin >> choice;
11  }
12  cout << "Bye!\n";
13  return 0;
14 }
```

Switch statement


```
1  void showmenu()
2  {
3    cout << "Please enter 1, 2, 3, 4, or 5:\n"
4    "1) alarm          2) report\n"
5    "3) alibi          4) comfort\n"
6    "5) quit\n";
7  }
8  void report()
9  {
10   cout << "It's been an excellent week for business.\n
         ";
11 }
12 void comfort()
13   {
14     cout << "Your employees think you are the finest
           CEO\n";
15   }
```

Lecture 13

Output to a file


```
1  #include <iostream>
2  #include <fstream>                    // for file I/O
3  int main()
4  {
5    using namespace std;
6
7    ofstream outfile; // create object for output
8
9    outfile.open("square.txt"); // associate with a file
10
11   for(int i=0;i<=10;i++)
12   {
13     outfile<<i*i<<endl;
14   }
15
16   outfile.close();
17   return 0;
18 }
```

Input from a file


```
1  #include <iostream>
2  #include<cmath>
3  #include <fstream>                    // for file I/O
4  int main()
5  {
6    using namespace std;
7    double value;
8    ifstream infile; // create object for output
9
10   infile.open("square.txt"); // associate with a file
11
12   if (!infile.is_open()) // failed to open file
13   {
14     cout << "Could not open the file " << "square.txt"
           << endl;
15     cout << "Program terminating.\n";
16     exit(EXIT_FAILURE);
17   }
```

Input from a file


```
1   int count=0;
2
3   infile >> value;
4
5   while (infile.good()) // while input good and not at
        EOF
6   {
7     count=count+1;
8       cout<<count<<"\t"<<sqrt(value)<<endl;
9
10    infile >> value; // get next value
11  }
```

Input from a file


```
1   if (infile.eof())
2     cout << "End of file reached.\n";
3   else if (infile.fail())
4     cout << "Input terminated by data mismatch.\n";
5   else
6     cout << "Input terminated for unknown reason.\n";
7
8
9
10
11  infile.close();
12  return 0;
13 }
```

Lecture 13

Initialization


```
1 int maxtemps[4][5] = // 2-D array
2 {
3   {96, 100, 87, 101, 105}, // values for maxtemps[0]
4   {96, 98, 91, 107, 104}, // values for maxtemps[1]
5   {97, 101, 93, 108, 107}, // values for maxtemps[2]
6   {98, 103, 95, 109, 108} // values for maxtemps[3]
7 };
```

Initialization


```
1  #include <iostream>
2  int main()
3  {
4    using namespace std;
5    int matrixA[2][2] = // 2-D array
6    {
7      {1, 2},  // values for matrix A[0]
8      {1, 4}   // values for matrix A[1]
9    };
10
11   int matrixB[2][2] = // 2-D array
12   {
13     {4, 0},  // values for matrix B[0]
14     {1, 1}   // values for matrix B[1]
15   };
```

Initialization


```
1   int matrixC[2][2];
2   int i,j,k;
3   for(i=0;i<2;i++)
4   {
5     for(j=0;j<2;j++)
6     {
7       matrixC[i][j]=0;
8       for(k=0;k<2;k++)
9       {
10        matrixC[i][j]=matrixC[i][j]+matrixA[i][k]*
              matrixB[k][j];
11      }
12      cout<<matrixC[i][j]<<"\t";
13    }
14    cout<<endl;
15  }
16 return 0;
17 }
```