The `switch` Statement

- Format:

```
switch (expression)
{  // start of compound statement
   case value_1:    <- terminated with a colon
      statement1;
      statement2;
      break;
   case value_2:     <- terminated with a colon
      statementm;
      break;
   default:          <- terminated with a colon
      statementaa;
}   // end of switch and compound statement
```

The `switch` Statement (cont'd.)

- Four new keywords used:
  - `switch`, `case`, `default`, and `break`
- Function:
  - Expression following switch is evaluated
    - Must evaluate to an integer result
  - Result compared sequentially to alternative case values until a match found
  - Statements following matched case are executed
  - When `break` statement reached, switch terminates
  - If no match found, `default` statement block is executed

Program 4.6

```
#include <iostream>
using namespace std;
int main()
{
  int opselect;
  double fnum, snum;

  cout << "Please type in two numbers: ";
  cin  >> fnum >> snum;
  cout << "Enter a select code: ";
  cout << "\n        1 for addition";
  cout << "\n        2 for multiplication";
  cout << "\n        3 for division : ";
  cin  >> opselect;

  switch (opselect)
  {
    case 1:
      cout << "The sum of the numbers entered is "
           << fnum+snum << endl;
      break;
    case 2:
      cout << "The product of the numbers entered is "
           << fnum*snum << endl;
      break;
    case 3:
      cout << "The first number divided by the second is "
           << fnum/snum << endl;
      break;
  }      // end of switch

  return 0;
}   // end of main()
```

The `switch` Statement (cont'd.)

- Program 4.6 results:

```
Please type in two numbers: 12 3
Enter a select code:
            1 for addition
            2 for multiplication
            3 for division : 2
The product of the numbers entered is 36
```