Unformatted Output

```
Price

$1.5
$12.625
$1234
-------
$1248.12
```

```
#include <iostream>
#include <iomanip>
using namespace std;
int main( )
{
  float fA=1.5, fB=12.625, fC=1234;
  cout   << "Price"
    << endl << endl
    << "$" << fA << endl
    << "$"  << fB << endl
    << "$" << fC
    << "\n-------\n"
    << "$" << fA + fB + fC << endl
     << endl;
  return 0;
}
```

 1

#include <iomanip>

- Output format functions are available
- #include <iomanip>
- setw(#)
  - Sets field width # of the next data item output using cout and right justifies output
  - Works with numbers and strings of characters, but not single characters
- setprecision(#)
  - Works only with floating point values and sets the number of digits (#) to the right of decimal point.
  - This precision setting remains until changed for all floating point values displayed

 2

Output Field Width Example

```
$   1
$  12
$ 123
-----
$ 136
```

```
#include <iostream>
#include <iomanip>
using namespace std;
int main( )
{
  int nA=1, nB=12, nC=123;
  cout    << "$" << setw(4) << nA << endl;
  cout    << "$" << setw(4) << nB << endl;
  cout    << "$" << setw(4) << nC
          << "\n-----\n"
          << "$" << setw(4) << nA + nB + nC;
  return 0;
}
```

 3

cout Flag Specifiers

- Used to configure output format flags
  - #include <iostream> must be used
  - cout << fixed << fCash; // fixed point notation
  - cout << showpoint << fCash; // show decimal point
  - cout << scientific << fDistance; // scientific notation
  - cout << showpos << fProfit; // show positive sign
  - cout << hex << nVal; // show as hexadecimal

 4

cout.setf Flag Example

```
$    1.000000
$   12.000000
$  123.000000
-----------
$  136.000000
```

```
#include <iostream>
#include <iomanip>
using namespace std;
int main( )
{
      float fA=1, fB=12, fC=123;
      cout << fixed << right << showpoint;
      cout  << "$" << setw(12) << fA << endl;
      cout  << "$" << setw(12) << fB << endl;
      cout  << "$" << setw(12) << fC
            << "\n-----------\n"
            << "$" << setw(12) << (fA + fB + fC);
      return 0;
}
```

 5

setprecision Floating Point Example

```
$     1.00
$    12.00
$   123.00
-----------
$   136.00
```

```
#include <iostream>
#include <iomanip>
using namespace std;
int main( )
{
      float fA=1, fB=12, fC=123;
      cout << fixed << right << showpoint;
      cout  << "$" << setw(9) << setprecision(2)
            << fA << endl;
      cout  << "$" << setw(9) << fB << endl;
      cout  << "$" << setw(9) << fC
            << "\n-----------\n"
            << "$" << setw(9) << fA + fB + fC;
      return 0;
}
```

 6

```
1.  /*****************************
2.  *  TemperatureConvert.cpp
3.  *  by Robert Laurie
4.  *****************************/
5.  #include <iostream>
6.  #include <iomanip>
7.  using namespace std;

8.  int main(void)
9.  {
10.    //  DECLARATION SECTION
11.    char cQuestion;
12.    float fTemperature;
13.    //  PROCESSING SECTION
14.    cout << "This program converts temperatures between\n"
15.         << "degrees Celsius and degrees Fahrenheit.\n"
16.         << "You may enter either a Celsius or "
17.         << "Fahrenheit\ntemperature for conversion.\n\n";
18.    cout << "> <-- Enter C (Celsius) or F (Fahrenheit)\r>";
19.    cin >> cQuestion;
20.    cin.ignore(100,'\n');
21.    cout << fixed << showpoint << setprecision(2);
```

This program converts temperatures between degrees Celsius and degrees Fahrenheit.
You may enter either a Celsius or Fahrenheit temperature for conversion.

>c<-- Enter C (Celsius) or F (Fahrenheit)
>67 <-- Enter temperature in degrees Celsius
Results: 67.00 C = 152.60 F

```
22.  if(cQuestion == 'C' || cQuestion == 'c')
23.  {
24.       cout << "      <-- Enter Celsius Temperature\r>";
25.       cin >> fTemperature;
26.       cin.ignore(100,'\n');
27.       cout << "Results: " << setw(6)
28.            << fTemperature << " C = " << setw(6)
29.            << (((fTemperature * 180)/100) + 32) << " F\n";
30.  }
31.  else if(cQuestion == 'F' || cQuestion == 'f')
32.  {
33.       cout << "      <-- Enter Fahrenheit Temperature\r>";
34.       cin >> fTemperature;
35.       cin.ignore(100,'\n');
36.       cout << "Results: " << setw(6)
37.         << fTemperature << " F = " << setw(6)
38.         << (((fTemperature - 32) * 100) / 180) << " C\n";
39.  }
40.   else
41.     cout << "Enter either C or F\n";
42.   return 0;
43. }
```