

# File Output

- Main steps for using file output
  - Include the `fstream` header file `#include <fstream>`
  - Create an `ofstream` object `ofstream outFile;`
  - Associate the `ofstream` object with a file (C-style) using `open()`
  - Use the `ofstream` object in the same manner you would use `cout`
  - Use the `close()` method to close the file `outFile.close();`

`outFile.open("carinfo.txt");` 若有, 打开文件; 若无该文件, 则会创建

```
// now do exact same things using outFile instead of cout
outFile << fixed;
outFile.precision(2);
outFile.setf(ios_base::showpoint);
outFile << "Make and model: " << automobile << endl;
outFile << "Year: " << year << endl;
outFile << "Was asking $" << a_price << endl;
outFile << "Now asking $" << d_price << endl;
```

# File Input

- Main steps for using file input
  - Include the `fstream` header file and account for the `std`
  - Declare one or more `ifstream` variables, or objects
  - Associate a `ifstream` object with a file using `open()` → 如果找不到, 会出现错误
  - Use the `close()` method to close the file
  - Use `>>` operator, `get()`, `getline()`, ..... method

```
inFile.open(filename); // associate inFile with a file
if (!inFile.is_open()) // failed to open file
{
    cout << "Could not open the file " << filename << endl;
    cout << "Program terminating.\n";
    exit(EXIT_FAILURE); → 完, 杀死程序, 一般不推荐使用
}
```

```
while (inFile.good()) // while input good and not at EOF
{
    ++count; // one more item read
    sum += value; // calculate running total
    inFile >> value; // get next value
}
```

```
if (inFile.eof()) → 已经读完
    cout << "End of file reached.\n";
else if (inFile.fail()) → 出错
    cout << "Input terminated by data mismatch.\n";
else
    cout << "Input terminated for unknown reason.\n";
```

