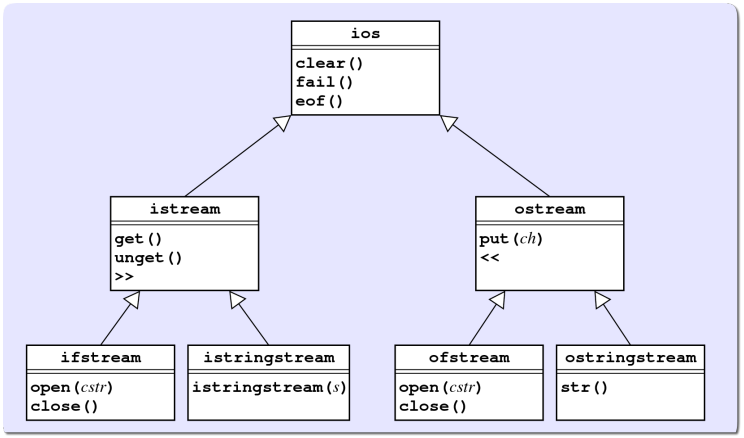
UML Diagrams

Simple diagrams that show the relationships among classes are useful, but often we want to expand them to **include the member functions** exposed at each level. This diagram is a standard way of displaying a class hierarchy called the **Unified Modeling Language**, or **UML.** In UML, each class appears as a rectangular box whose upper portion contains the name of the class.



In a UML class diagram, the **public member functions** of the class appear in the lower portion. In UML, derived classes use open arrowheads to **point to** their base classes.

UML diagrams make it easy to determine which **inherited member functions** are available to each of the classes in the diagram. Because each class inherits all of the members of **every class** in its ancestor chain, an object of a particular class can call **any member function** defined in any of those classes.

For example, the diagram above shows that **any** `ifstream` object can call these member functions:

- The `open()` and `close()` functions from the `ifstream` class itself
- The `get()` and `unget()` member functions, as well as the `>>` operator from the `istream` class
- The `clear()`, `fail()`, and `eof()` functions from the `ios` class