

Printing Out Class Member Data Exercises

First attempt

- Add a print() member function to the class below which displays the value of the data members on the screen
- Create a program which calls the print() method

```
class Test {  
    int i{42};  
    string str;  
    ...  
};
```

First attempt

- What are the disadvantages of this solution?
- Suggest an improvement
- How does your suggestion address these disadvantages?

Second attempt

- Modify the `print()` member function so that it takes a `std::ostream` as its argument and sends the data there
- Create a program which implements the `print()` method and calls it, passing `cout` as the output stream argument
- Does it matter whether the output stream is passed by reference or by value?
- Modify your program so that it opens a file. Call the `print()` member function to save the data to the file

Compatibility with Output of Built-in Types

- Explain why the code below does not work
 - `cout << "Test object: " << test << endl;`
- What changes would you need to make for the code to work?
- We need to provide a suitable operator <<

Nested Calls of Operator <<

- How will the code below be invoked?

```
int i{1}, j{2};  
cout << i << j;
```

Nested Calls of Operator <<

- Explain why the overloaded << operator returns a reference to the output stream

Overloaded << operator for Test

- Modify your program so that the code below compiles and runs correctly

```
cout << "Test object: " << test << endl;  
ofile << "Test object : " << test << endl;
```