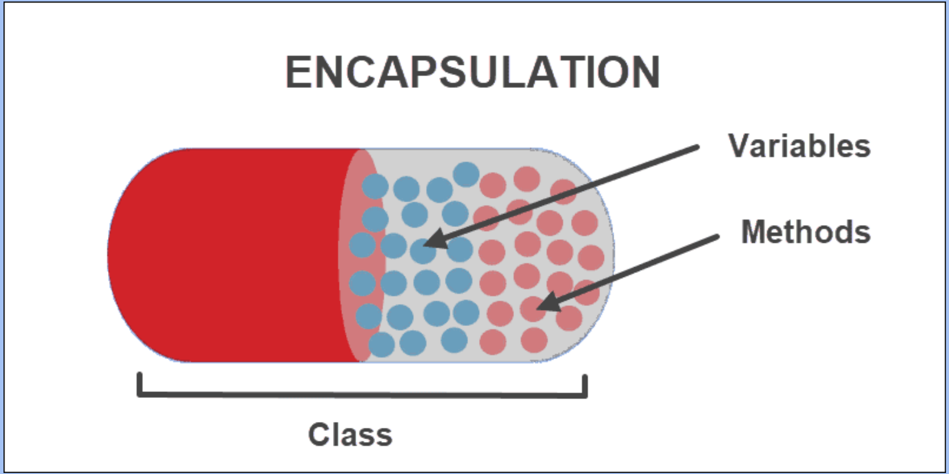
SUBJECT: OBJECT ORIENTED PROGRAMMING USING C++

Encapsulation in Object Oriented Programming

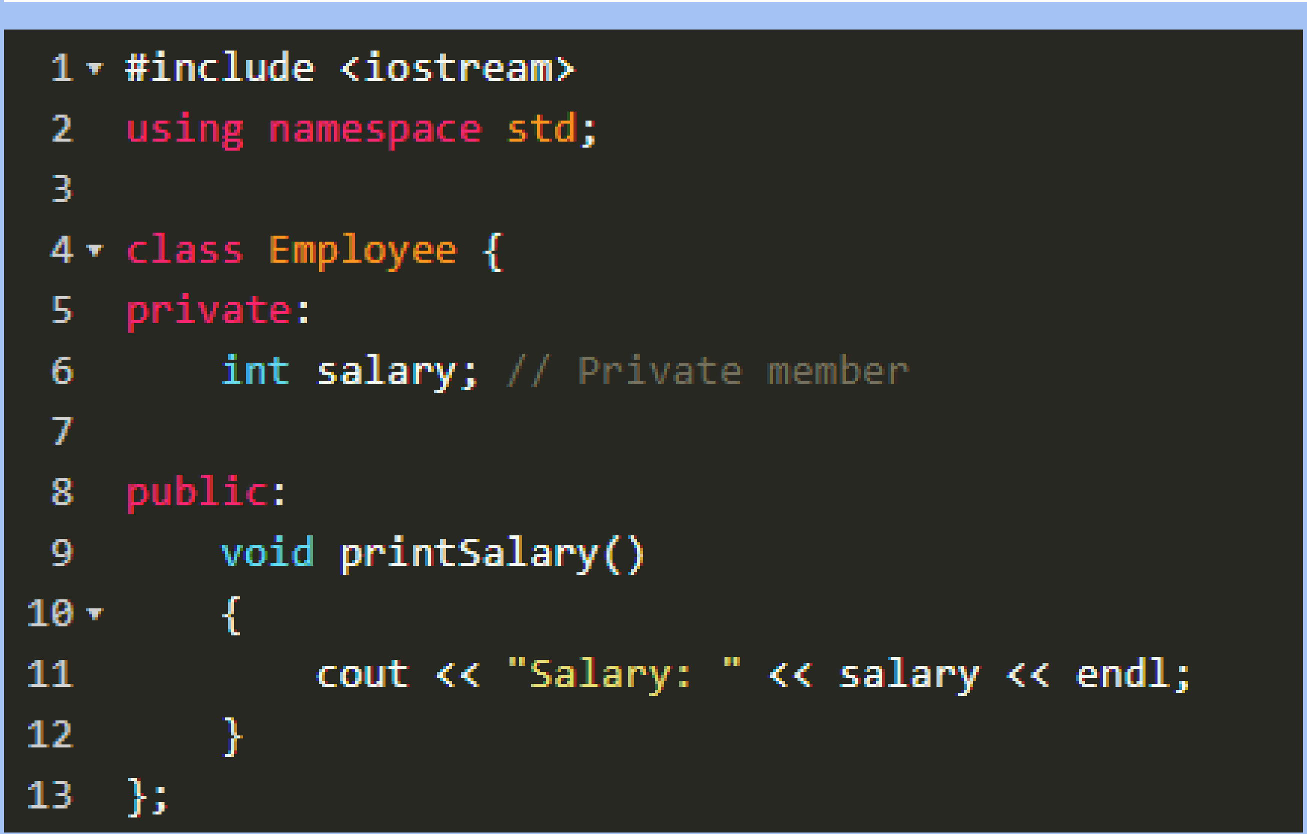
Elementrix Classes

Encapsulation in Object Oriented Programming

- Data encapsulation is a fundamental principle of object-oriented programming that involves bundling data (attributes) and related methods (operations) within a single unit called a class.



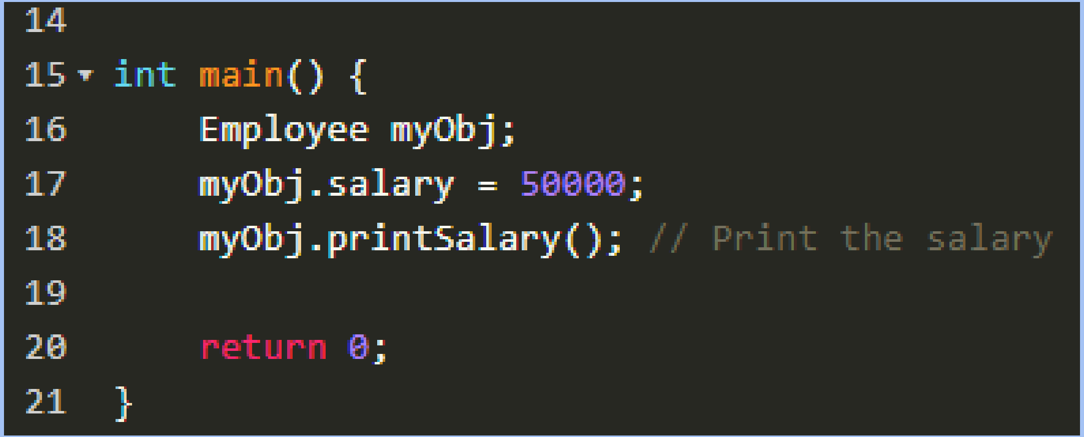
Example Program:



```cpp
#include <iostream>
using namespace std;

class Employee {
private:
    int salary; // Private member

public:
    void printSalary()
    {
        cout << "Salary: " << salary << endl;
    }
};
```

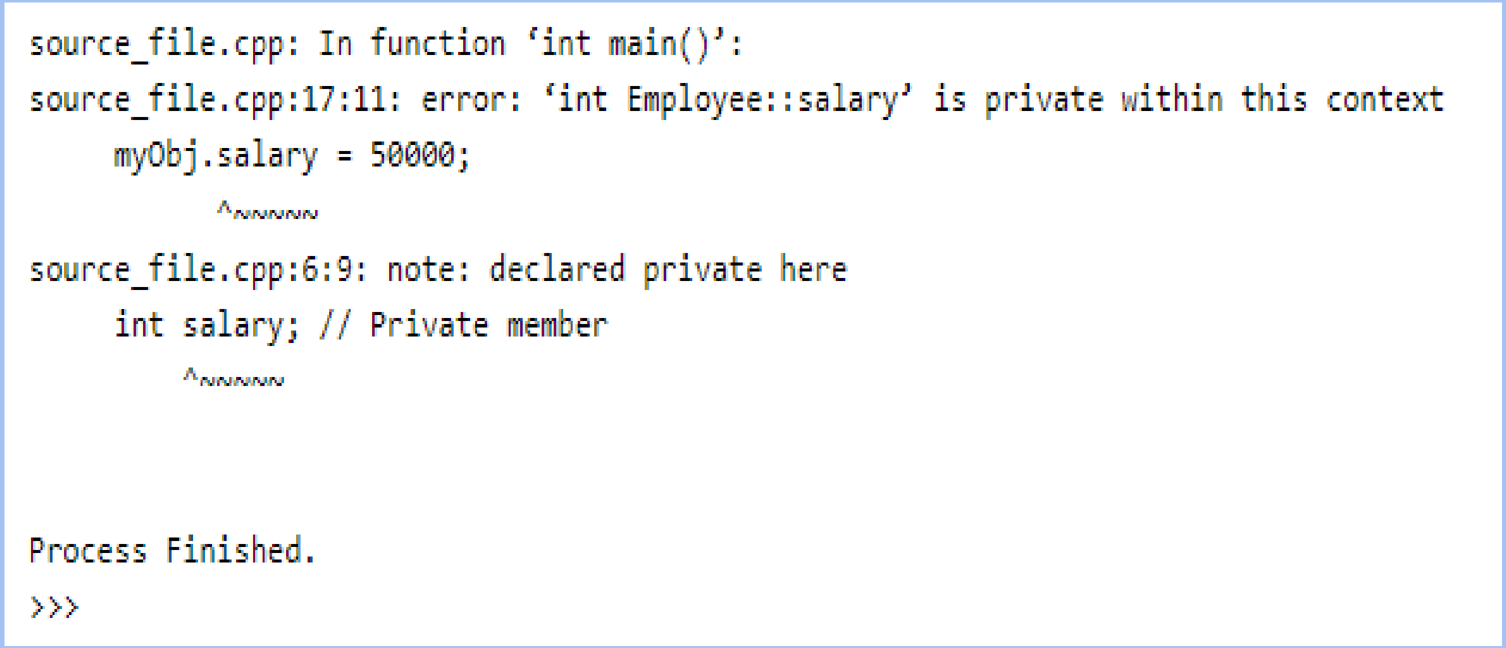


```cpp

int main() {
    Employee myObj;
    myObj.salary = 50000;
    myObj.printSalary(); // Print the salary

    return 0;
}
```

Output:



```
source_file.cpp: In function ‘int main()’:
source_file.cpp:17:11: error: ‘int Employee::salary’ is private within this context
     myObj.salary = 50000;
           ^~~~~~
source_file.cpp:6:9: note: declared private here
     int salary; // Private member
         ^~~~~~



Process Finished.
>>>
```

This concept promotes:

❑ **Data protection:** By hiding data within the class, you control its access and prevent unauthorized modifications.

❑ **Modularity:** Each class encapsulates a specific functionality, making your code easier to understand, maintain, and reuse.

❑ **Code organization:** Data and its behavior are grouped logically, improving readability and reducing complexity.

पढ़िए और पढ़ाइये

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