



ACCESS FUNCTIONS

Accessing object data



ACCESS FUNCTIONS: GETTERS AND SETTERS

- Sometimes a client needs to access some data or property of an object
- Access functions are the preferred object-oriented solution
 - Imagine that a class has a member variable: `string name;`
 - Accessor or getter functions return the values stored in member data
 - `string getName()` or `string get_name()`
 - Mutator or setter functions change member data
 - `void setName(string n)` or `void set_name(string n)`



ACCESS FUNCTIONS EXAMPLE

```
class Person
{
    private:
        string name;
        int    age;
    public:
        string getName()
        {
            return name;
        }

        void setAge(int a_age)
        {
            if (age > 0 && age < 115)
                age = a_age;
        }
};
```



ACCESSOR FUNCTIONS ADVANTAGES

- Designer chooses which functions to provide
 - Select what data is exposed and what data remains hidden
 - Control the direction of data flow
 - Implement data validation and conversion
 - “Feb 31” is invalid
 - Convert 1505741120000 to 2017/09/18 13:25:20 GMT
 - Convert “Dec. 25, 1960” to “1960/12/25”
- Separate the interface from the implementation
 - Can return a property or conceptual value



STACK EXAMPLE

