

# UML class diagram && starUML

计63 李家惠

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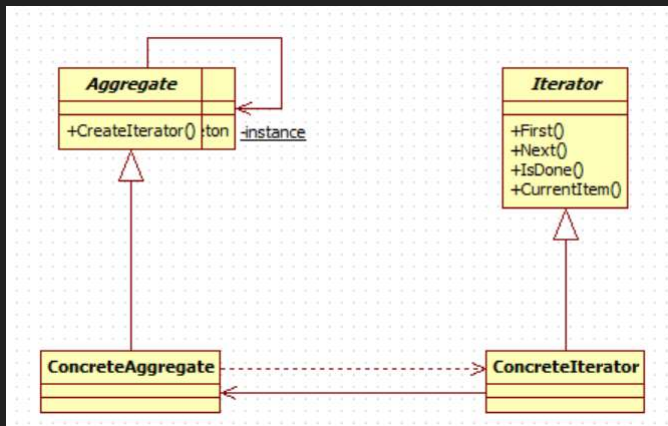
# UML

- **Unified Modeling Language**
- Elements:
  - any activities;
  - individual components;
    - how they can interact with other software components;
  - how the system will run;
  - components and interfaces;
  - user interface.

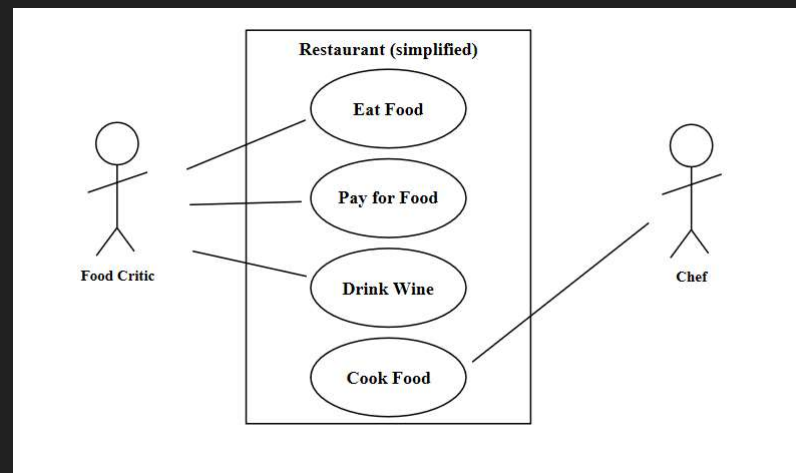


# UML building

## Structure diagrams



## Behavior diagrams

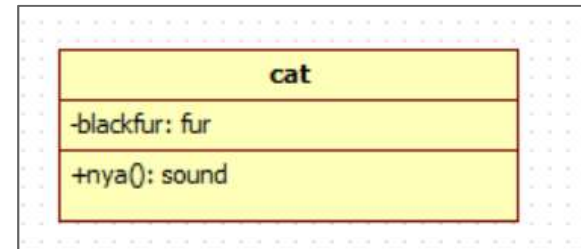


# UML class diagram

- Class
- **Associations**

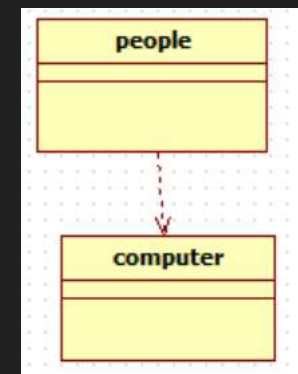
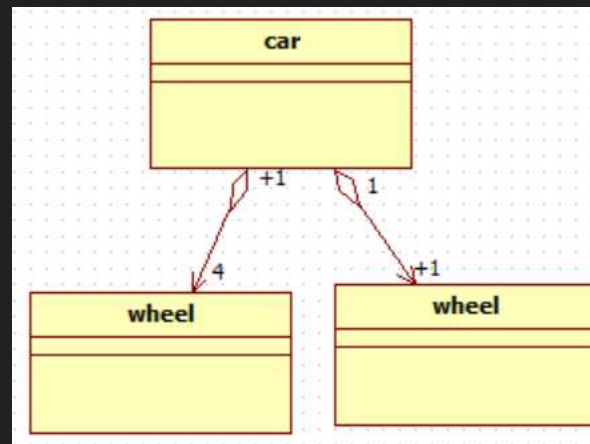
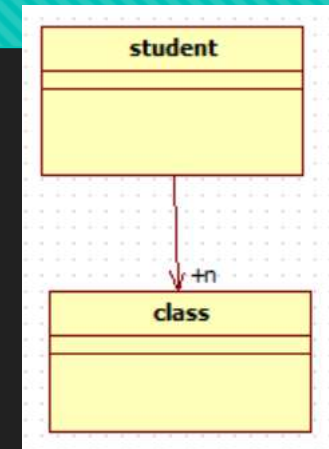
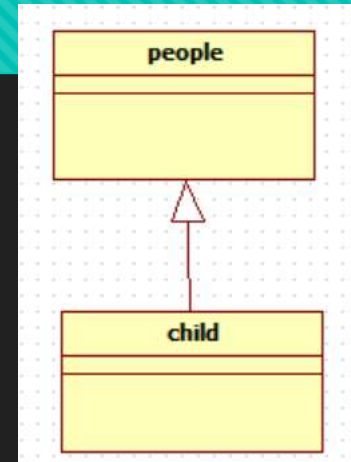
# class

- Class name
- Class attribute list
  - name : attribute type
  - name : attribute type = default value
- Class operations list
  - name(parameter list) : type of value returned
  - parameter list:  
name : attribute type



# Associations

- inheritance
  - Generalization(泛化)
- composition
  - Association
  - Aggregation(聚合)
- Dependency





# starUML

- Open source( **WhiteStarUML** )
- <http://staruml.io/>
- <https://sourceforge.net/projects/whitestaruml/>



## New Project By Approach



Approaches

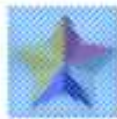
Open Files

Recent Files

Approaches:



4+1 View  
Model



Default  
Approach



Rational  
Approach



UML  
Compone...



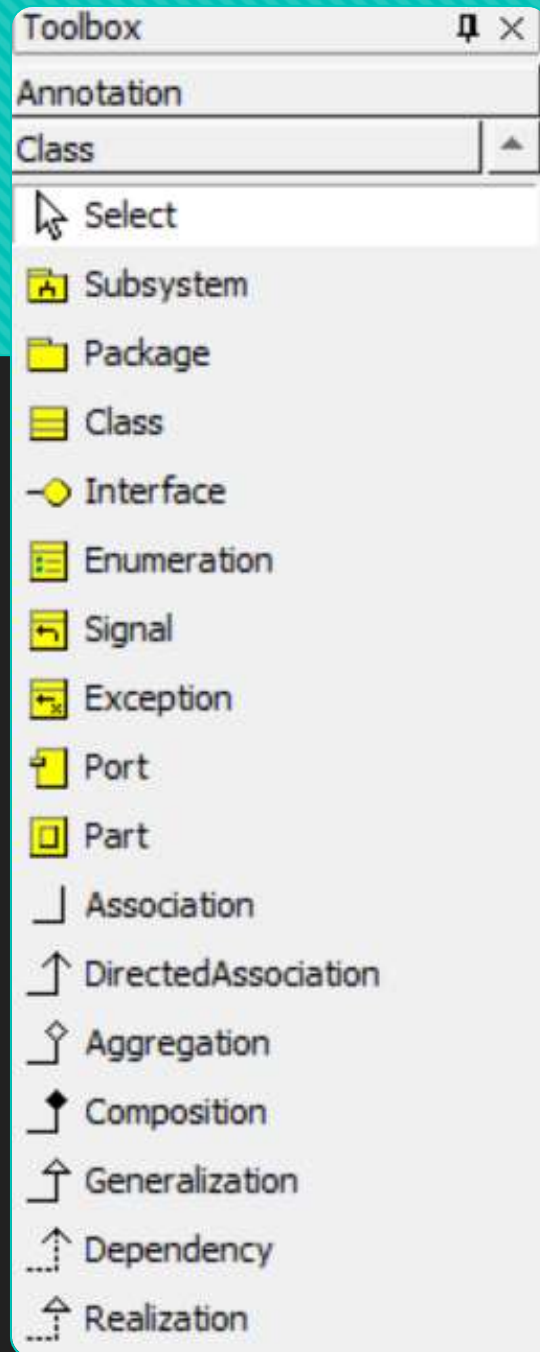
Empty Project

Description:

Default Apporach for StarUML

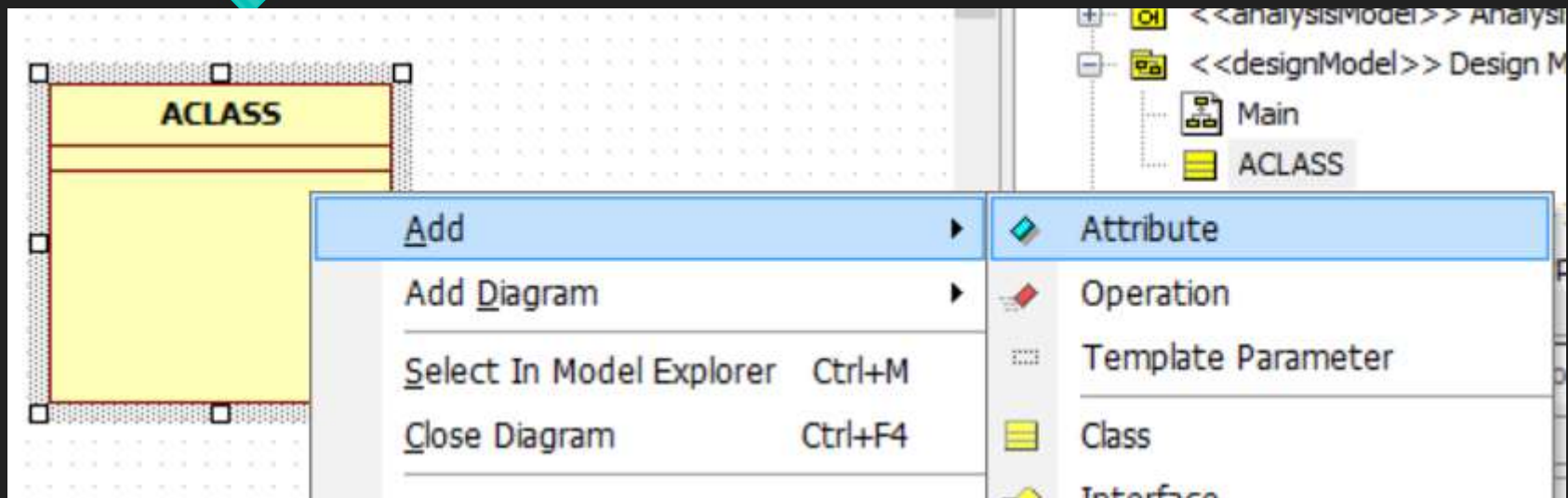
☐ Set As Default Approach

OK

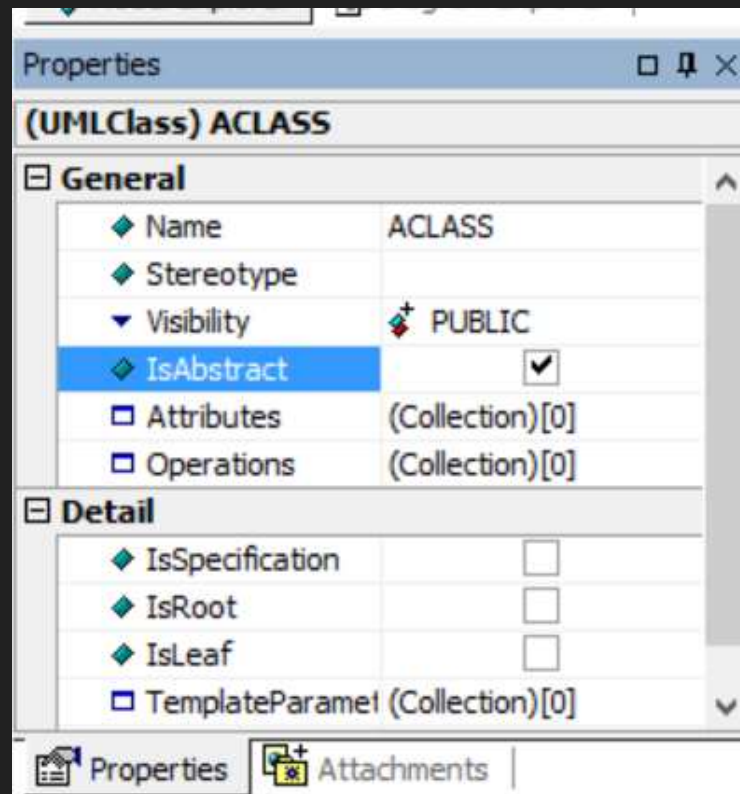


- Class
- Associations

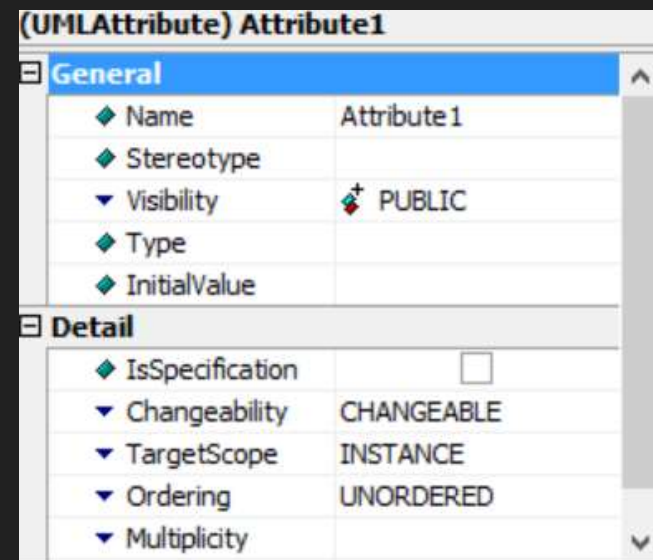
# class



- Attribute
- Operation

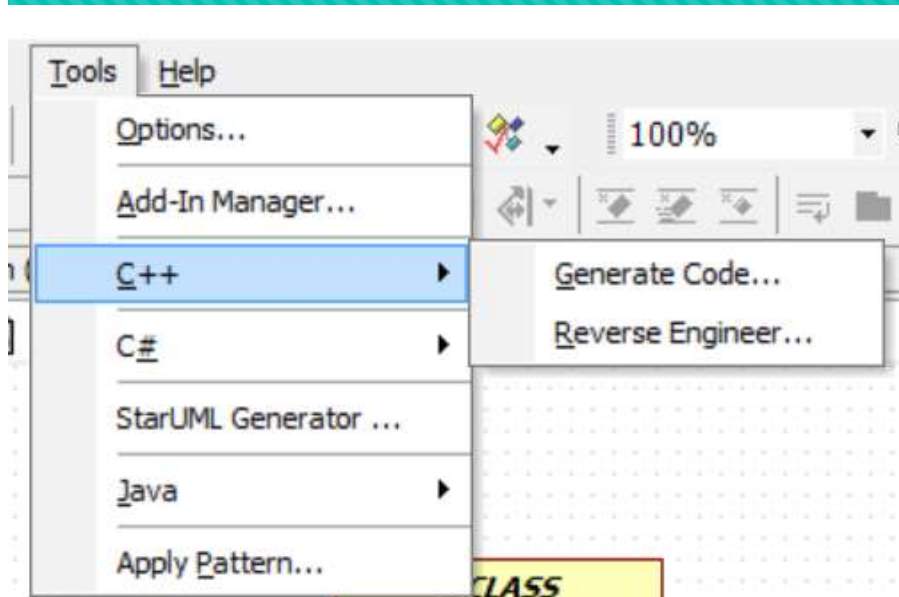


- Visibility
- isAbstract
- Type
- Initialvalue





# Code generate

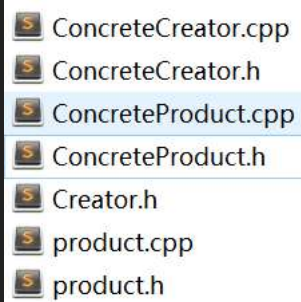


## Options

Option Category:	Option Item:
Environment	Use Microsoft Visual C++ grammar <input type="checkbox"/>
C++	.NET Managed C++ support <input type="checkbox"/>
Code Generation	Generate documentation as code <input checked="" type="checkbox"/>
Reverse Engineering	Member order: Public member first
C#	
Java	
	<b>Code Style</b>
	Insert tabs as spaces <input type="checkbox"/>
	Tab width: 4
	Place the opening curly brace in the new line <input checked="" type="checkbox"/>
	<b>File Header</b>
	File Header Comments: (Text)
	Default Include text for header
	Default Include text for implementation

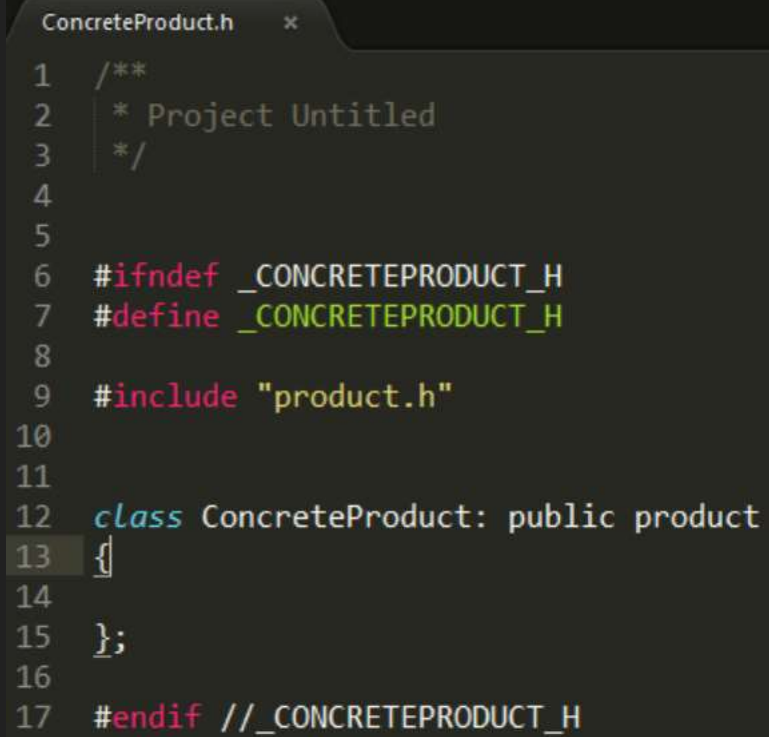
Description: Place the opening curly brace in the new line

Places the opening curly brace "{" in the new line.



A file explorer window showing a list of files in a project. The files are: ConcreteCreator.cpp, ConcreteCreator.h, ConcreteProduct.cpp (highlighted), ConcreteProduct.h, Creator.h, product.cpp, and product.h.

- ConcreteCreator.cpp
- ConcreteCreator.h
- ConcreteProduct.cpp
- ConcreteProduct.h
- Creator.h
- product.cpp
- product.h

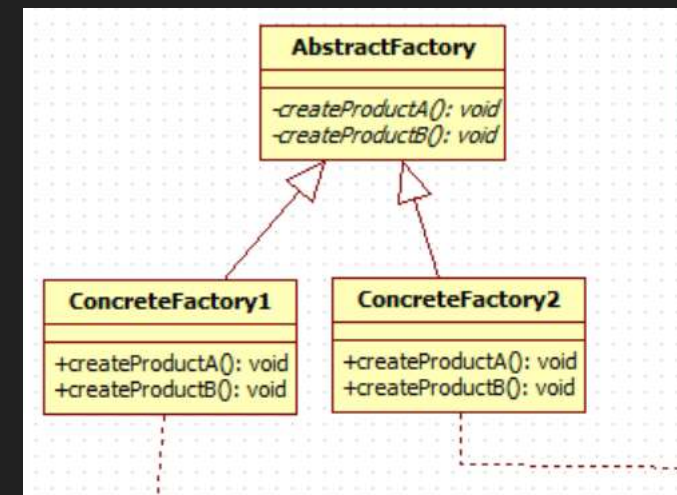
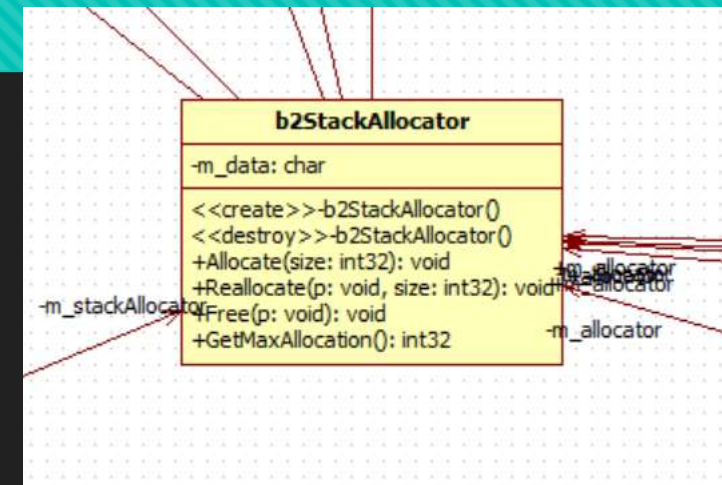
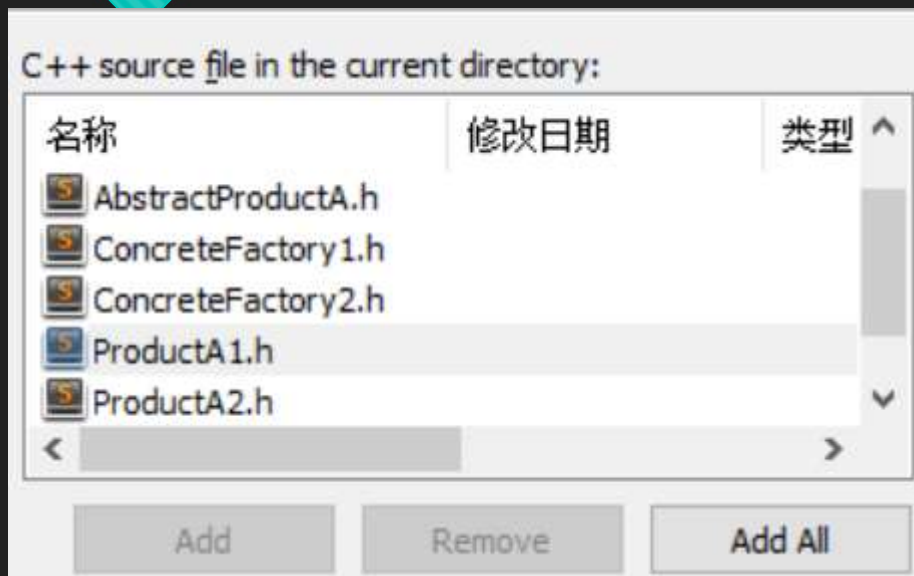


A code editor window titled 'ConcreteProduct.h' showing the implementation of the ConcreteProduct class. The code includes a comment block, preprocessor directives for header guards, an include for 'product.h', and a class definition for ConcreteProduct that inherits from product.

```
1  /**
2   * Project Untitled
3   */
4
5
6  #ifndef _CONCRETEPRODUCT_H
7  #define _CONCRETEPRODUCT_H
8
9  #include "product.h"
10
11
12  class ConcreteProduct: public product
13  {
14
15  };
16
17  #endif //_CONCRETEPRODUCT_H
```



# reverse



**THANKS~**