Object programming

In brief

Course langage: French

Presentation

Learning objectives

To know how to program in object-oriented approach, thanks to the C++ language. First of all, you have to understand that a program is not approached in the same way in classical and object-oriented programming. Then, one must have a global vision of its decomposition into objects and use the concepts of this type of programming. A student who has taken this course should be able to structure and program in C++, but also to quickly learn any other object language. This type of language is nowadays essential to integrate a company: it can be found at different levels and for very different programming, whether it is scientific, management, Web or other.

Description of the programme

Basics: C language on which C++ is written.
C++ : the notion of reference; references in function parameters, references on constant data, default arguments of methods, overloading of functions and methods, inline functions, dynamic memory allocation, arrays, position of variable declaration, mandatory prototyping, input/output, classes and objects, arrays of objects, attributes and methods and their accessibility, constructors and destructors, the pseudo-variable this, static members, inheritance, the pseudo-variable super, linked lists, operator overloading, templates, the notion of exceptions.

Generic central skills and knowledge targeted in the discipline

This teaching unit provides the computer science foundations that are essential for the engineer at the Ecole Centrale de Paris, and therefore the scientific and technical foundations that are important for scientific and technical innovation (theme 1). It is only with a structured decomposition of problems that our engineers will be able to tackle complex systems (theme 2): the object-oriented approach allows this.

How knowledge is tested

For 20% of the grade, a small work to be done (CC) following a practical work, and for the remaining 80% a final project to be done in pairs

Bibliography

- Course slides
- Henri Garetta, The C++ language

Teaching team

C.Jazzar

Total des heures		**30h**
CM	Master class	4h
TD	Directed work	8h
TP	Practical work	18h

Useful info

Name responsible for EU

Lead Instructor

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