Object-Orientation - Compilation of Multiple inheritance

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ABSTRACT

Features like inheritance, polymorphism, encapsulation, etc. are very useful for programmers because they allow them to write more readable and maintainable code. These features are typical for object-oriented programming.
In our presentation we focus on the special kind of inheritance known as multiple inheritance. Inheritance is important mechanism in object-oriented programming. It describes a relationship between two classes (parent and child), allowing child to inherit certain functionalities from its parent. Multiple inheritance is a feature of some object-oriented programming languages (C++, Eiffel, Python), that allows classes to inherit attributes and methods from more than one parent. The programmer can then access those (inherited) features from within all of those classes. However, this also brings some negative effects. One of the best known "The diamond problem" is an ambiguity that arises when two classes inherit from same parent, and another class inherits from this two classes. Then there is uncertainty in calling the method, which is overwritten in both classes. This can be solved in various ways, including using virtual inheritance, mixins or traits.
In our presentation we will focus on how C++ does solve problems that come with multiple inheritance with the use of virtual inheritance.