



The compiler inserts code that follows `animal`'s virtual method table pointer and looks up the `speak` method. In this case it finds `Dog`'s implementation because the object was created as an instance of the `Bulldog` class. Using pointers for dynamic dispatch allows polymorphic runtime behavior because if `animal` was a reference to an object of a different type, the pointers could lead to a different virtual method table and/or a different method implementation.