

# Exam Assignments V12

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1. What are **extension types** in the context of Python?
  - **look and act like Python objects, but are compiled code** (they are like built-in object types)
  - are very **useful** for **wrapping external C / C++** code and giving it a Python like interface
  - are quite **fast** when implemented correctly

**Cython makes creating and using extension types as straightforward as working with pure-Python classes.**
2. How do **extension types data fields** in Cython differ from data fields in Python classes?
  - 1) **Fields** in a Cython **extension type**, are **only accessible within Cython** code
  - 2) In order to have **access from Python** we have to provide the access level for that field (**readonly** or **public**)
  - 3) **Data fields** must be **declared upfront at the class level**
  - 4) **We can also declare fields that are themselves extension types**
  - 5) **Fields access in Cython** code is at native speed (**fast**)
3. Give a **simple description of how to wrap C / C++ code in Cython.**
  - The **easy way** is to describe all we need with **compiler directives**.  
including the language, source, extra argument( *extra\_link\_args = -fopenmp, extra\_compile\_args = -fopenmp -ffast-math* )
  - and tell cython which function from the header "pi.h" we want to use