

CSCI 334:
Principles of Programming Languages

Lecture 18-1: Unit Testing & Packages

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Topics

MsTest

NuGet

Unit testing

Unit testing is a quality-assurance method designed to find bugs before software ships. A **unit test** consists of **test code** written to exercise the functionality of a **unit** of code in isolation. For example, in functional code, a unit is often thought of as a **module**, **function**, or **primitive** operation.

Note that unit testing is usually **not sufficient** to determine the correctness of code!

Popular Unit Test Frameworks

Java: JUnit

.NET: MsTest or NUnit

Python: unittest

Ruby: rspec or cucumber

Tons more!

https://en.wikipedia.org/wiki/List_of_unit_testing_frameworks

(demo)

Language Package Framework

A **language package framework** is a repository of **third-party software**, together with a **distribution mechanism**, for finding and utilizing software libraries with a language.

A good package framework makes using a language a lot more **productive** and **fun!**

History

The first widely-known package framework was **CTAN**, the **Comprehensive TeX Archive Network**, started in 1991 for the TeX language. Files were originally distributed using the FTP protocol.

Many languages followed...

Popular Package Frameworks

Java: Maven

.NET: NuGet

Python: pip

Ruby: gem

Tons more!

(demo)

<https://www.nuget.org/>

Recap & Next Class

This lecture:

MsTest

NuGet

Next lecture:

How does OO work?