

# Recap



COMP 524: Programming Language Concepts  
Björn B. Brandenburg

The University of North Carolina at Chapel Hill

**Name the translation strategy for each of the following languages:**

**Fortran, Lisp, Python, Java, Shell, C, C++, C#**

Fortran: separate compilation + linking

Lisp: either interpretation or compilation

Python: implicit compilation + interpretation

Java: explicit compilation + interpretation

Shell: interpretation

C: separate compilation + linking

C++: separate compilation + linking

C#: explicit compilation + interpretation

**“missing symbol:” What kind of error is this?  
(compile-time, link-time, run-time)**

link-time

**What are the two requirements for a language to be a programming language.**

It must be universal and implementable.

**What are the three main design goals in programming language design?**

**Which language excels at all of them?**

Developer productivity.

Program safety.

Program efficiency.

None so far. Research challenge, anyone?

# What's conditional compilation?

## Why would you use it?

A pre-processor technique. Some code is only compiled if specific flags are defined.

This can be used to configure a complex code base for a specific use. For example, debugging checks can be disabled in release builds, and architecture-dependent features can be enabled or disabled depending on the choice of target architecture (e.g., Linux).