University of Illinois at Urbana-Champaign
Dept. of Electrical and Computer Engineering

ECE 220: Computer Systems & Programming

Hierarchies of Structures

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Bibliographies Reference Many Types of Documents

What if we have a large group of inter-related types?

For example, documents in a bibliography.

For each document, we have **a reference**.

But some **documents are papers**, while others are **books**.

Some **papers are conference papers**, while others are **journal papers**.

And some **books are textbooks**, while others may be **part of a series**.

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Type Hierarchy Implies Structural Inclusion Relations

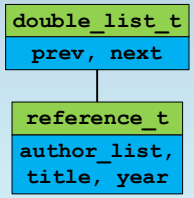
The **basic type is a `reference_t`**.

It has an **`author_list`**, a **`title`**, and a **`year`** of publication.

To organize references, **we include a `double_list_t`** (at the start of the **`struct`**).

The **reference is shown as a child or sub-type of the `double_list_t`**.

The result is called a **type hierarchy** (or, in other languages, a **class hierarchy**).



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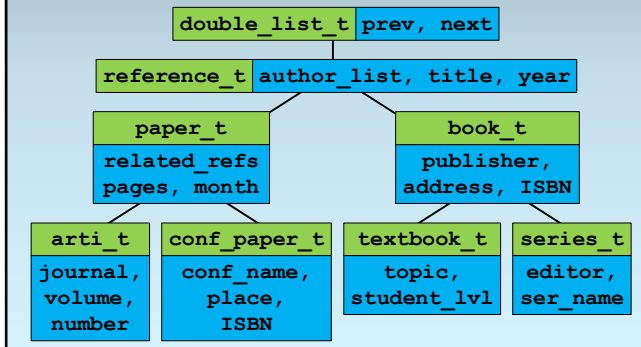
Example: A Bibliographic Type Hierarchy



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