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Compilers

Homework 1: Language Concepts

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1. Concrete syntax trees are generated by a concrete syntax grammer that specifies exactly what syntax is valid, whereas an abstract syntax tree just specifies the phrase structure, where terminal symbols have no real role.

2.

3. Static binding means the variable scope is known at compile time. Dynamic binding has to run the program to determine the scope of a binding occurrence.

4. Static typing means the programming language can determine the types immediately. Dynamic typing means the type can be changed; type errors cannot be detected until runtime.

5. Strongly typed means each object is assigned a specific type when it is defined. Weakly typed means an object type can be changed depending on the content of the variable. Some examples are Java is strongly typed, every object is given a type at compile time and it cannot be changed. Javascript on the other hard is weakly types, a variable is defined with ‘var’ and can be set to any value, anywhere in the program without restrictions.