



FACULTY OF ENGINEERING & TECHNOLOGY

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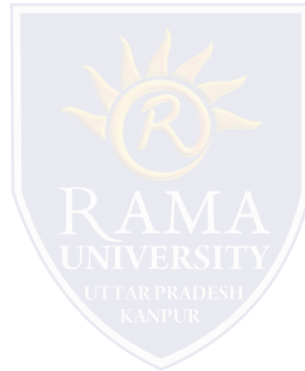
Department of Computer Science & Engineering

Topics Covered

Binding Time

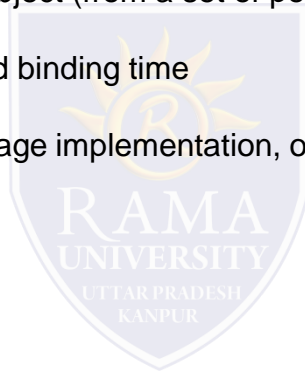
Static Time

Name-declaration binding



Binding Time

- Attributes of parts of programs must be “bound” to object before or during computation
- A binding fixes a value or other property of an object (from a set of possible values)
- Time at which choice for binding occurs is called binding time
 - Dynamic binding — at execution
 - Static binding — at translation, language implementation, or language definition
- At entry to block or subprogram
 - Bind actual to formal parameter
 - Determine location of local variable
- At arbitrary times in program
 - bind values to variables via assignment



- **At translation**

- Determined by programmer — bind type to variable name, values to constants
- Determined by translator — bind global variable to location (at load time), bind source program to object program representation

- **At implementation**

- Bind values to representation in computer
- Bind operations and statements to semantics (if not uniform may lead to different results with different implementations)

- **At language definition**

- Structure of language
- Built-in and definable types
- Notation for values



Name-declaration binding

- The same identifier, e.g. `x` , can be declared several times in a program. An important question is: Given a use of `x`, to which declaration of `x` is it associated?
- Definition: name-declaration binding the association between the name of an identifier and the declaration of that identifier
- When does name-declaration binding occur?
- Compile time: Pascal, Java and C++: the name-declaration binding can be determined by examining the program text alone.
- Definition: scope the piece of program text in which an identifier is visible Definition: scope rules Another name for the name-declaration binding rules.
- Pascal, Java and C++ have static scope because the scope can be determined statically (ie at compile time)

