

# ASSIGNMENT

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## Machine-Independent Loader Features

Machine-Independent Loader Features are two types

### 1. Automatic Library Search

automatically incorporate routines from a subprogram library

### 2. Loading Options

## Automatic Library Search

### I Automatic library call

- » **The programmer does not need to take any action beyond mentioning the subroutine names as external references**

### I Solution

- » **Enter the symbols from each Refer record into ESTAB**
- » **When the definition is encountered (Define record), the address is assigned**
- » **At the end of Pass 1, the symbols in ESTAB that remain undefined represent unresolved external references**
- » **The loader searches the libraries specified (or standard) for undefined symbols or subroutines**

## Automatic Library Search (Cont.)

### 1. The library search process may be repeated

- » **Since the subroutines fetched from a library may themselves contain external references**

### 2. Programmer defined subroutines have higher priority

- a. **The programmer can override the standard subroutines in the library by supplying their own routines**

### 3. Library structures

- a. **Assembled or compiled versions of the subroutines in a library can be structured using a directory that gives the name of each routine and a pointer to its address within the library**

### Loader Options

- Many loaders have a special command language that is used to specify options
  - » **a separate input file**
  - » **source program**
  - » **embedded in the primary input stream between programs**
- Command Language
  - » **specifying alternative sources of input**
    - INCLUDE program-name(library-name)
  - » **changing or deleting external reference**
    - DELETE name
    - CHANGE symbol1, symbol2
  - » **controlling the automatic library search**
    - LIBRARY MYLIB

### Loader Options (cont.)

- » **specify that some references not be resolved**
  - NOCALL name
- » **specify the location at which execution is to begin**

### 1 Example

» **If we would like to evaluate the use of READ and WRITE instead of RDREC and WRREC, for a temporary measure, we use the following loader commands**

- INCLUDE READ(UTLIB)
- INCLUDE WRITE(UTLIB)
- DELETE RDREC, WRREC
- CHANGE RDREC, READ
- CHANGE WRREC, WRITE

» **If it is known that the statistical analysis is not to be performed in an execution**

- NOCALL STDDEV, PLOT, CORREL

## **Loader Design Options**

1. Linkage Editors
2. Dynamic Linking
3. Bootstrap Loaders