

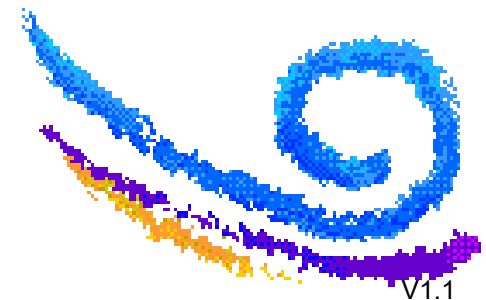
IBM Enterprise COBOL

Declaring Files

Declaring Files: The Environment Division

- ▶ The first step in working with files is to specify an **internal name** and an **external name** for each file your program will be working with, using a SELECT statement for each file
- Do this in the Environment Division, Input-Output section, File-control paragraph; for example:

```
Environment division.  
Input-output section.  
File-control.  
    Select Transact assign to TRANS.  
    Select master assign to MASTER  
        file status is m-status.  
    Select errors assign to ERRS.  
    Select log assign to log.
```

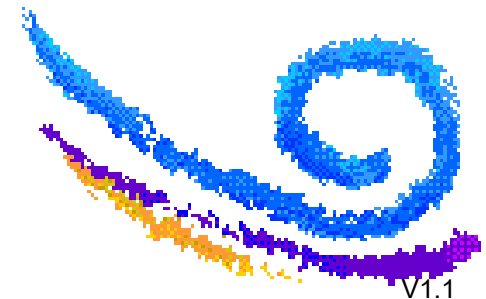


Declaring Files: The SELECT Statement

- ▶ The SELECT statement specifies a filename (name you will use in your program to reference the file) and a DDname (name you will use at run time to find the actual file)
 - The filename is any user-defined COBOL word
 - The DDname must follow the rules for external names:
 - 1-8 alphanumeric characters, first of which is alpha
 - ◆ If name is longer than 8, it will be truncated to 8
 - Name will be folded to uppercase for external reference

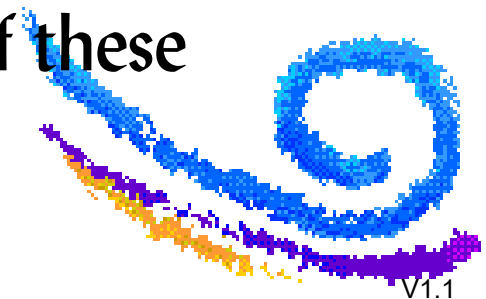
Declaring Files: The SELECT Statement, 2

- ▶ The SELECT statement may also identify a file status data item
 - A file status item is a two byte field you create in your working-storage section that the system will use to place a return code for each I/O operation for the associated file
 - The details of file status items are discussed in a later paper



Describing Files: The FD Statement

- ▶ Once you have declared your files with SELECT statements, then you must further describe the characteristics of each file and the records it contains
 - This is accomplished by using FD (for File Definition) statements in the FILE SECTION of the DATA DIVISION; this describes (or implies) the physical recording of the file
 - Each FD statement must be followed by a description of the records in the file: the logical content of these records



Describing Files: The FD Statement, 2

- ▶ The syntax of the FD statement is simple in most cases:

```
FD filename  
  [block contains n records]  
  [recording mode is {f|v}]
```

- A compiler option, BLOCK0, will force implicit 'block contains 0 records' for all files, allowing the system to determine the block size
- You can omit 'recording mode' and the compiler will make an educated guess, but it will give you a warning message



Describing Files: The FD Statement, 3

► Some samples:

```
FD  transact.  
--- record description ---  
  
FD  master recording mode is f.  
--- record description ---  
  
FD  errors recording f.  
--- record description ---  
  
FD  log recording v.  
--- record description ---
```

Notes:

- * 'FD' must begin in area A, the rest of the statement must be in area B
- * After 'FD' code the filename from the corresponding SELECT statement
- * The order of the FD's does not need to match the order of the SELECT statements
- * For the 'recording mode' clause, the words 'mode' and 'is' are both optional
- * The 'record description's are data structures that describe the records in the related file; for now, we use a simple

'01 record-name pic x(record-size)

construct ...

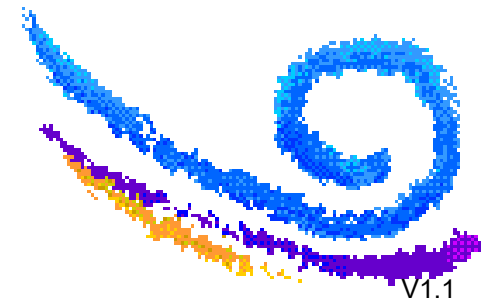
Describing Files: The FD Statement, 4

► Samples - more detail:

```
Environment division.  
Input-output section.  
File-control.  
    Select Transact assign to TRANS.  
    Select master assign to MASTER  
        file status is m-status.  
    Select errors assign to ERRS.  
    Select log assign to log.  
  
Data division.  
File section.  
FD transact.  
01 trans-rec pic x(100).  
  
FD master recording mode is f.  
01 master-rec pic x(440).  
  
FD errors recording f.  
01 error-rec pic x(100).  
  
FD log recording v.  
01 log-rec pic x(133).
```

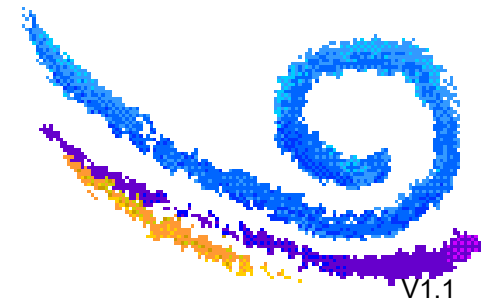
Notes:

- * Notice the use of filenames in Select statements and FD statements
- * Installations may have their own naming conventions or standards for filenames and record names
- * At this point, you can work with these files in your procedure division, which we talk about in a later paper



File Definitions - Summary

- ▶ Every file used in a program must be declared in a SELECT statement in the Environment Division, Input-Output section, File-control paragraph
- ▶ Then each file must be further described in an FD statement in the Data Division, File section
- ▶ Finally, each FD must be followed by a description of the records contained in the associated file





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