OS/2 PROCEDURES LANGUAGE 2/REXX

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OS/2 Procedures Language 2/REXX "A Practical Approach to Programming" and "Adding REXX Power to Applications"

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OS/2 Procedures Language 2/REXX

A Practical Approach to Programming

OS/2 *Rexx*

What is REXX?

- Powerful end-user programming language
- Easy to learn, easy to remember
- Can powerfully extend any application
- Common language available on all SAA systems
- Becoming an ANSI standard (X3J18 Committee)

OS/2 *Rexx*

Why REXX?

- Small, easy to use, yet powerful language
- Programming interfaces for application extension
- Rapid development of an interpreter, performance boost of compiler technology

OS/2 *Rexx*

Keep the Language Small

- Friendlier to new users
- Documentation is smaller and simpler
- Few exceptions or special cases (low "astonishment factor")
- Users can "embrace" the entire language

OS/2 *Rexx*

Natural Datatyping

- No internal or machine representation is exposed to the user
- Single number concept

```
Say "The interest is a*b'%'

Say 5 + 1.0 + 0.54 +
1.23e-2
```

OS/2 *Rexx*

No Defined Size or Shape Limits

- Data sizes limited only by available memory
- Limits are set using "human readable" values
- SmallTalk-like dynamic data-typing

OS/2 *Rexx*

Powerful Symbol Manipulation

- Natural concatenation
- Powerful string parsing ability
- Many functions for string and word manipulation

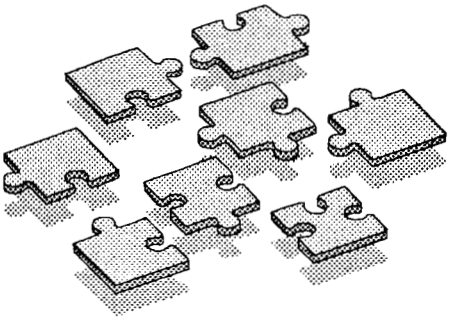
```
Parse Arg first initial last
Say "Hello" first'.'

pos = wordpos(first, list)
if pos <> 0 then
  nickname = word(list, pos)
```

OS/2 *Rexx*

System Independence

- The REXX language is independent of both operating system and hardware
- Suitable for any system or application environment
- Part of the IBM Systems Application Architecture



OS/2 *Rexx*

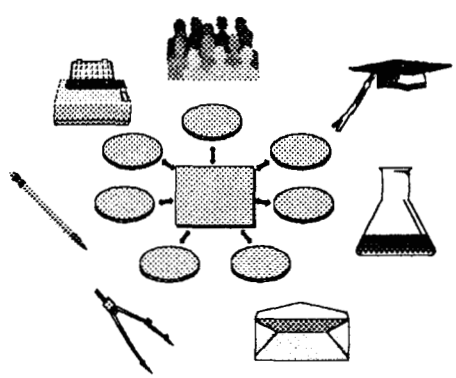
REXX Uses

- Tailoring user commands (".CMD" files)
- End-user problem solving
- Universal macro or scripting language
- Prototyping Applications
- Education

OS/2 *Rexx*

Universal Macro Language

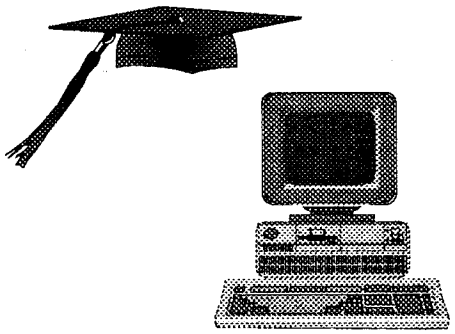
- Editors
- Spreadsheets
- Language preprocessors
- Communication programs
- Rexx can be the macro language for any application



OS/2 *Rexx*

REXX is a Good Introduction to Programming

- Easy to learn
- Easy to program
- Few new concepts required
- Powerful debugging features
- No separate compile or link step



OS/2 *Rexx*

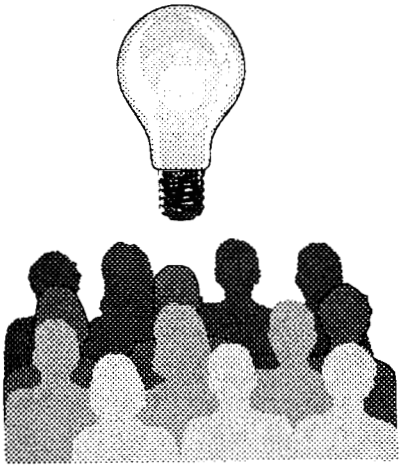
What's New in OS/2 2.0?

- Interpreter runs in 32-bit mode
- Dramatically improved performance
- New 32-bit interfaces
- 16-bit interfaces still supported
- On-line REXX reference manual
- OS/2 utility functions
- New 32-bit sample programs in toolkit
- On-line programming interfaces reference
- RXHLLAPI interface
- SAA Communications interface
- Communications Manger configuration
- LAN utilities

OS/2 *Rexx*

More than a Fancy .CMD Language

- Fill multiple roles on OS/2
- Places more power in the hands of users
- Powerful automation of OS/2 operations
- Powerful extensions to OS/2 applications



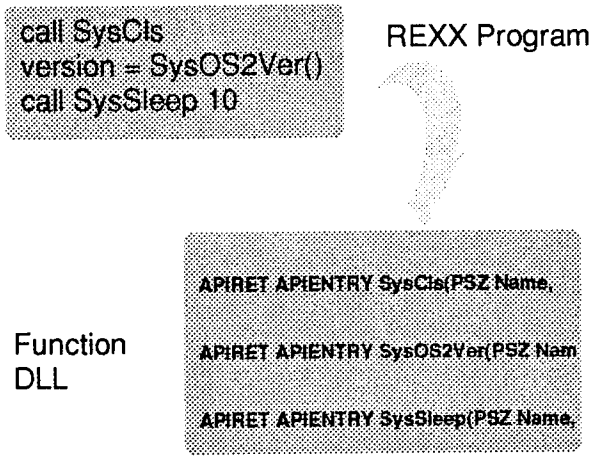
OS/2 *Rexx*

OS/2
Procedures Language
2/REXX

Adding REXX Power to Applications

OS/2 *Rexx*

Creating New REXX Functions



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Function Registration

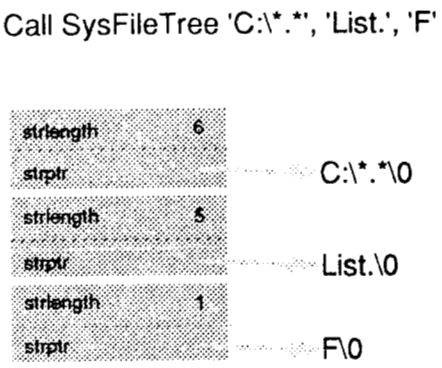
- REXX external functions are registered with RxFuncAdd
- Acts as a form of program linkage

```
Call RxFuncAdd 'SysCls',,
   'REXXUTIL', 'SysCls'
```

OS/2 *Rexx*

RXSTRINGs

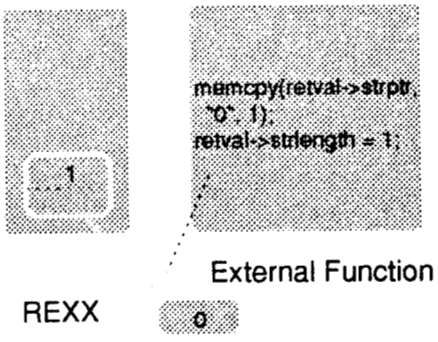
- External functions are passed arguments as RXSTRINGs
- Defined as a pointer and length pair defining a REXX character string



OS/2 *Rexx*

RXSTRING Return Values

- External functions pass an RXSTRING value back to REXX
- The function can use the buffer provided by REXX or create a new one



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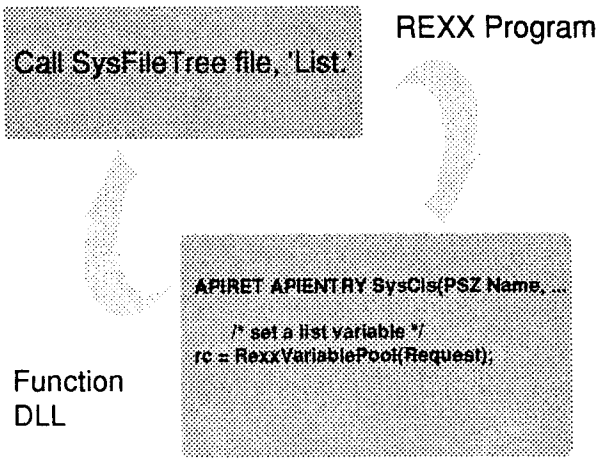
Function Packages

- REXX external functions can be registered from C code also

```
RexxRegisterFunctionDll(
  "SysCls", "REXXUTIL",
  "SysCls");
```

OS/2 *Rexx*

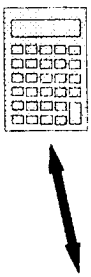
Accessing REXX Variables



OS/2 *Rexx*

Using REXX for Macros

- An application can call the REXX interpreter to run any REXX program



```
/* calculate factorials */
parse arg number, factor
accum = 1
do i = 1 to factor
  accum = accum * i
end
return accum
```

OS/2 *Rexx*

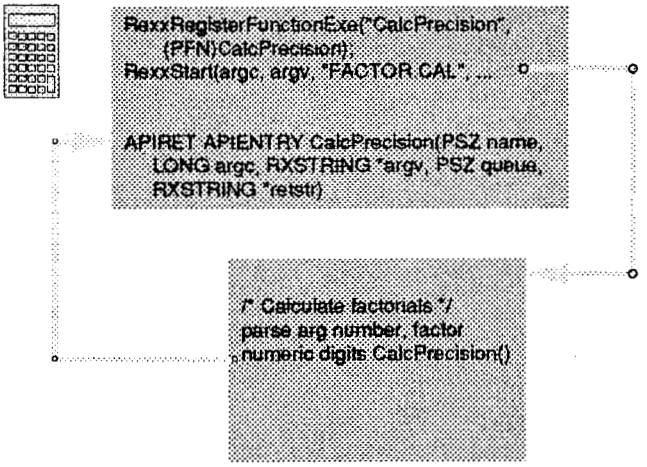
Invoking REXX

- An application can call use the REXX interpreter with the RexxStart programming interface

```
rc = RexxStart(argc, argv,
   "FACTOR.CAL",
   NULL, NULL,
   RXFUNCTION,
   NULL,
   &return,
   &retstr);
```

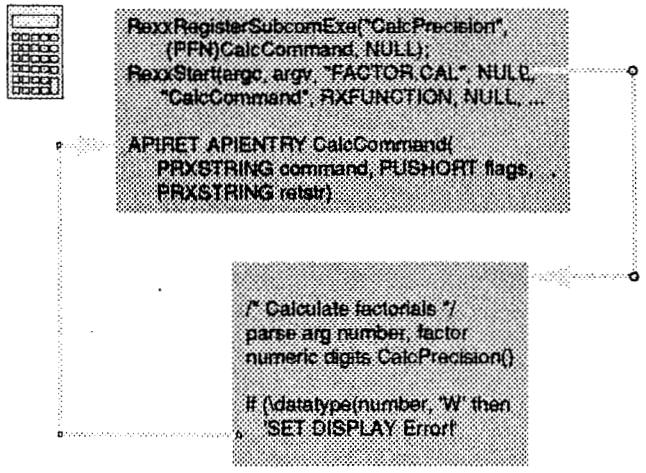
OS/2 *Rexx*

Application External Functions



OS/2 *Rexx*

Subcommand Handlers



OS/2 *Rexx*

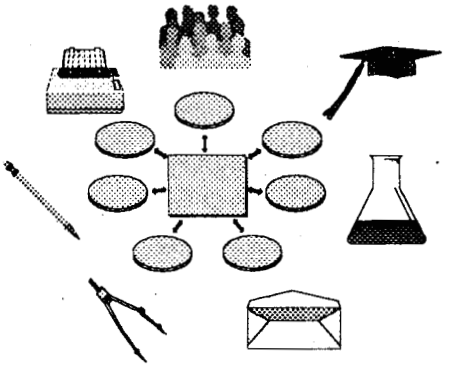
And Still More...

- Exits to tailor REXX program behavior
- REXX programs executed directly from storage
- Macro Space repository for REXX programs
- Halting a running REXX program
- Tracing a running REXX program
- Subcommand handlers as dynamic link libraries

OS/2 *Rexx*

REXX
The Universal Macro Language

- Same language used for all applications
- Places control into user hands, making people more productive
- Easily added to any application



OS/2 *Rexx*