

About Storing Files: Where and How?

Source directory, current directory, home directory, temporary directory ...

Business Programming 1

Business Programming 2



About Locations For Storing Files, 1



- About *directories* (synonym: *folders*)
 - Can be nested (*directory/folder* in a *directory/folder ...*)
 - *Root directory* has the symbol "/" (Unix) or "\" (Windows)
 - Windows has the notion of a *drive*, an alphabetic letter followed by a colon, e.g. "C:"
 - A *drive* may be prepended to the directory, e.g. to the *root directory*: "C:\"
 - A **PATH** is the sequence of *directories* (*folders*) to traverse to arrive at the storage location of a file
 - Each *directory* (*folder*) gets separated with the letter "/" (Unix) or "\" (Windows)
 - Windows examples for *absolute* (starts with the *root directory/folder*) and *relative paths*
 - `C:\Users\JohnDoe\Documents\someFile1.png` (*absolute path*)
 - `Documents\someFile2.png` (*relative path: relative to current directory/folder*)
 - Unix examples for *absolute* and *relative paths*
 - `/Users/MaryDoe/Documents/someFile1.png` (*absolute path*)
 - `Documents/someFile2.png` (*relative path: relative to current directory/folder*)



- The directory where the REXX program is stored
 - Can be retrieved from REXX using the **PARSE SOURCE** keyword statement
PARSE SOURCE *opsys invocationType pathToRexxProgram*
 - *opsys* refers to the operating system, e.g. "Windows", "Darwin" (Apple), "Linux", ...
 - *invocationType* is one of "COMMAND", "FUNCTION", "SUBROUTINE", "METHOD", "REQUIRES"
 - *pathToRexxProgram* is the fully qualified path to the REXX program, e.g.
 - `C:\Users\JohnDoe\programs\someProgram.rex` (absolute path, Windows)
 - `/Users/MaryDoe/programs/someProgram.rex` (absolute path, Unix)
 - **FILESPEC()**-BIF (built-in-function) allows to retrieve different parts of a path
e.g. `FILESPEC('location', pathToRexxProgram)` yields for the above two examples:
 - `C:\Users\JohnDoe\programs\` (Windows example location)
 - `/Users/MaryDoe/programs/` (Unix example location)

Current Directory



- The directory (folder) where the Rexx program executes
 - Used for looking up additional programs and files without a path
 - Can be changed arbitrarily while the program executes
- `directory(optionalNewDir)`-BIF (built-in-function)
 - Returns the full path to the current directory
 - If argument `optionalNewDir` supplied, changes the current directory to it
- Example:

```
say directory()           -- returns path to current directory
oldDir=directory("..") -- changes to parent directory/folder ( "."=current, ".."=parent directory/folder)
say directory()           -- returns path to current directory
```

Output Windows, assuming current directory is
C:\Users\MaryDoe\temp:

```
C:\Users\MaryDoe\temp
C:\Users\MaryDoe
```

Output Unix, assuming current directory is
/Users/JohnDoe/temp:

```
/Users/JohnDoe/temp
/Users/JohnDoe
```



Home Directory



- The directory (folder) where all files and directories/folders of a user reside
 - User usually has all permissions for all directories/folders and files therein
- Operating system defines an environment variable that contains the path
 - Environment variable (Windows): "USERPROFILE"
 - Environment variable (UNIX): "HOME"
- Use the `value()`-BIF (built-in-function) to retrieve the environment variable's value, e.g.
 - Example Windows:
`homeDir=value('USERPROFILE', , 'ENVIRONMENT')` -- maybe: "C:\Users\JohnDoe"
 - Example Unix:
`homeDir=value('HOME', , 'ENVIRONMENT')` -- maybe: "/Users/MaryDoe"



Temporary Directory



- Every operating system defines a directory for temporary files
 - Rights for everyone to read and write files
 - May be emptied by the operating system, e.g. during boot process
 - Beware of storing sensitive data there!
- Temporary directories on different operating systems
 - Windows: defined with the environment variable "TMP" or "TEMP"
`tempDir=value('TEMP', , 'ENVIRONMENT')` -- maybe "C:\Users\JohnDoe\AppData\Local\Temp"
 - MacOS: defined with the environment variable "TMPDIR"
`tempDir=value('TMPDIR', , 'ENVIRONMENT')` -- maybe "/var/folders/x9/gyg5hmn/T/"
 - Unix: usually the directory `/tmp`



Using Java to Fetch these Directories

- Java's `java.util.System` class manages the properties for the system
 - The following properties are set according to the user's operating system
 - Current directory, property named `"user.dir"`
 - Home directory, property named `"user.home"`
 - Temporary directory, property named `"java.io.tmpdir"`

```
say "User name           :" .java.lang.System~getProperty("user.name")
say "User's home directory:" .java.lang.System~getProperty("user.home")
say "Current directory   :" .java.lang.System~getProperty("user.dir")
say "Temp directory      :" .java.lang.System~getProperty("java.io.tmpdir")
```

```
::requires BSF.CLS -- get ooRexx-Java bridge
```

Possible output (Windows) assuming current directory is `C:\Program Files\ooRexx`:

```
User name           : JohnDoe
User's home directory: C:\Users\JohnDoe
Current directory   : C:\Program Files\ooRexx
Temp directory      : C:\Users\JohnDoe\AppData\Local\Temp\
```