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leaving Annex B with only brief descriptions of the C bindings to those services.

This clause does not attempt to include everything that would be required of a language binding. The services here are those that are necessary to make use of features defined elsewhere in the standard, but that are not normally available in every language. Clearly a language that could not open, read, and write the files manipulated by the utilities in this standard would not be very useful, but this service is normally provided by any language and therefore isn't called out here. The ability to obtain values of environment variables exported from the shell, on the other hand, is not universally available, so that service is included here.

7.1 Shell Command Interface

7.1.1 Execute Shell Command

Any language binding to Language-Independent System Services shall include a facility to execute a shell command.

The language-independent specification for this facility has not been developed. The C binding for this facility is the *system* () function described in B.3.1.

7.1.2 Pipe Communications with Programs

Any language binding to Language-Independent System Services shall include a facility to execute a shell command, and to write the standard input or read the standard output of that command via a pipe.

The language-independent specification for this facility has not been developed. The C binding for this facility is the *popen* () and *pclose* () functions described in B.3.2.

7.2 Access Environment Variables

Any language binding to Language-Independent System Services shall include a facility to obtain values of environment variables, as specified in POSIX .1 {8}.

The language-independent specification for this facility has not been developed. The C binding for this facility is the *getenv* () function described in POSIX .1 {8} 4.6.1.

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7.2.1 Access Environment Variables Rationale. *(This subclause is not a part of P1003.2)*

This facility is required in POSIX. 2 so that applications can obtain values of exported shell variables.

7.3 Regular Expression Matching

Any language binding to Language-Independent System Services shall include a facility to interpret regular expressions as described in 2.8.

The language-independent specification for this facility has not been developed. The C binding is the *regcomp* (), *regexec* (), and *regfree* () functions described in B.5.

7.3.1 Regular Expression Matching Rationale. *(This subclause is not a part of P1003.2)*

This service is important enough that it should be required by any language binding to POSIX. 2.

Regular expression parsing and pattern matching are listed separately, since they are different services. A language binding could provide different functions to support regular expressions and patterns, or could combine them into a single function.

7.4 Pattern Matching

Any language binding to Language-Independent System Services shall include a facility to interpret patterns as described in 3.13.1 and 3.13.2. This facility shall allow the application to specify whether a slash character in the string to be matched will be treated as a regular character, or must be explicitly matched against a slash in the pattern.

The language-independent specification for this facility has not been developed. The C binding is the *fnmatch* () function described in B.6.

7.5 Command Option Parsing

Any language binding to Language-Independent System Services shall include a facility to parse the options and operands from the command line that invoked the application.

The language-independent specification for this facility has not been developed. The C binding for this facility is the *getopt* () function described in B.7.

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