POSIX (Portable Operating System Interface) provides a set of standards for operating systems, including regular expressions. The POSIX standard for regular expressions specifies a set of rules for pattern matching. Here are some of the basic rules and conventions for POSIX regular expressions:

1. **Basic and Extended Regular Expressions**: POSIX defines two types of regular expressions: Basic Regular Expressions (BRE) and Extended Regular Expressions (ERE). ERE is a superset of BRE and provides a more expressive syntax.
2. **Basic Regular Expressions (BRE)**:
    - Ordinary characters match themselves. For example, the character 'a' in the pattern matches the character 'a' in the input string.
    - Special characters like `*`, `+`, `?`, and `|` must be escaped to be treated as literals.
    - `.` (dot) matches any single character.
    - `*` matches zero or more occurrences of the preceding element.
    - `^` matches the beginning of a line.
    - `$` matches the end of a line.
3. **Extended Regular Expressions (ERE)**:
    - ERE supports additional metacharacters without needing to escape them, including `+`, `?`, and `|`.
    - Parentheses `()` are used for grouping and can be used to change the precedence of operators.
    - `{}` is used for specifying the number of repetitions. For example, `a{3}` matches 'aaa'.
    - `[...]` defines a character class. For example, `[abc]` matches 'a', 'b', or 'c'.
4. **Anchors**:
    - `^` at the beginning of a pattern matches the start of a line.
    - `$` at the end of a pattern matches the end of a line.
5. **Character Classes**:
    - `[...]` defines a character class. For example, `[a-z]` matches any lowercase letter.
    - `[^...]` negates a character class. For example, `[^0-9]` matches any character that is not a digit.
6. **Quantifiers**:
    - `*` matches zero or more occurrences of the preceding element.
    - `+` matches one or more occurrences of the preceding element.
    - `?` matches zero or one occurrence of the preceding element.
7. **Alternation**:
    - `|` (pipe symbol) is used for alternation. For example, `abc|def` matches 'abc' or 'def'.
8. **Escape Sequences**: Special characters can be escaped with a backslash `\` to be treated as literals, such as `\*`, `\?`, `\[`, etc.

These are some of the basic rules for POSIX regular expressions. Note that the exact behavior may vary slightly depending on the specific implementation of POSIX regex in the programming language or library you are using, but these rules provide a general understanding of how POSIX regular expressions work.