cron-expression-parser

Cron expression parser is a command line application which parses a cron string and expands each field to show the times at which it will run.

Supported Features

- Valid expression must have 5 parts followed by a command

- An expression can contain following symbols

    - Hyphens (-) : Allows a range of values , e.g., `1-12`
    - Comma (,) : Allows multiple values or multiple sub expressions , e.g., `1,2,3,4` , `*/12,2-15,5`
    - Slash (/) : Allows intervals of values, e.g., `*/15` will return values in intervals of 15
    - Any Value (*) : Allows any value within defined boundary, e.g., if boundary is [1,30], then this will return all values between [1,30]

- Each time part has a fixed range which the given expression must satisfy

    - Minute : 0-59
    - Hour : 0-23
    - Day of month : 1-31
    - Month : 1-12
    - Day of Week : 0-6

Unsupported features

- special time strings, like @yearly, @monthly etc
- words notation for month/day of week
- question mark
- Slash expression starting with non-asterisk(*) value, e.g, `1/15` is not supported
- Separate number of days in each month. e.g, February is not handled as 28-29 days month
- Year is not supported

Installation

- Clone the project

`git clone https://github.com/umang-jalan/cron-expression-parser.git`

- Change the directory

`cd cron-expression-parser`

- Set up gradle

`./gradlew install && ./gradlew build`

Usage

- Run via java jar using command line

```
java -jar cron-expression-parser-1.0.0.jar "[CRON_EXPRESSION] [COMMAND]"
```

Sample Command :

```
java -jar cron-expression-parser-1.0.0.jar "*/15 0 1,15 * 1-5 /usr/bin/find"
```

- Alternatively, `./gradlew` can also be used to run the application

```
./gradlew run --args='"[CRON_EXPRESSION] [COMMAND]"'
```

Sample Command :

```
./gradlew run --args='"*/15 0 1,15 * 1-5 /usr/bin/find"'
```

In both approaches, the input arguments has two parts: - `CRON_EXPRESSION`, which is a cron string like `"*/15 0 1,15 * 1-5"`
- `COMMAND` which is the command to run

Output

- **Success** - Valid Expression `"*/15 0 1-15 * 1-5 /usr/bin/find"`

```
minute        0 15 30 45
hour          0
day of month  1 15
month         1 2 3 4 5 6 7 8 9 10 11 12
day of week   1 2 3 4 5
command       /usr/bin/find
```

- **Error** : Invalid Expression : `"*/15 0 1-15 * 1-8 /usr/bin/find"`

```
[ERROR] [DAY_OF_WEEK] invalid start and end values, Allowed Range : min = 0 max = 6
```