



Cron Expression Parser

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Overview

A command line application or script which parses a cron string and expands each field to show the times at which it will run.

Goals

1. Given a cron string, Parse it and display the times which it will run

For example, the following input argument:

```
*/15 0 1,15 * 1-5 /usr/bin/find
```

Should yield the following output:

```
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
```

Installing Dependencies:

These dependencies are based on the assumption, we are using a linux machine

1. Install Node js to run the node js files

Command: `sudo apt-get install npm`

2. Using npm(node package manager) install the dependencies in the CronExpressionParser Folder

Command: `npm install`

```
MHYDFA0B7509:Desktop likhith.pallagani$ cd CronExpressionParser/
MHYDFA0B7509:CronExpressionParser likhith.pallagani$ npm install
```

Usage

Command to Run:

After the dependencies are installed, run the following command, in the proj directory

Command:

likhith.pallagani\$ node <FileName> <Cron String>

```
MHYDFA0B7509:proj likhith.pallagani$ node parser.js "* /15 0 1,15 * 1-5 /usr/bin/find"
[ '* /15', '0', '1,15', '*', '1-5', '/usr/bin/find' ]
minute      0,15,30,45
hour         0
dayOfMonth   1,15
month         1,2,3,4,5,6,7,8,9,10,11,12
dayOfWeek    1,2,3,4,5
command      /usr/bin/find
MHYDFA0B7509:proj likhith.pallagani$
```

node:

the key word to run the node js files

FileName:

parser.js contains the script which takes the input of the cron string and invokes the script which parses the cron string.

Cron String:

```
*      *      *      *      *      *
|      |      |      |      |      |
|      |      |      |      |      --- Command
|      |      |      |      ----- Day of Week (0-7) (0 or 7 is sun)
|      |      |      ----- Month(1-12)
|      |      ----- Day of Month(1-31)
|      ----- Hour (0-23)
----- Minute(0-59)
```

Cron Expression Parser Library Usage:

```
var CronExpression = require('./expression');
var expression = "* /15 0 1,15 * 1-5 /usr/bin/find";
var cronOutput = CronExpression.parse(expression);
```

Cron Expression Parser Test:

Refer to the test folder to find all the tests which are run against the cron library

- For each field in the cron expression, all the different test cases are run.
- Eg: For minute field only ranges from 0-59 are allowed
- Eg: For hour field only ranges from 0-23 are allowed
- Eg: For day of Month field only ranges from 1-31 are allowed
- For Month field only ranges from 1-12 are allowed

Example1: Minute value out of range

```
test('minute value out of the range', function(t) {
  t.throws(function() {
    CronExpression.parse('32,72 * * * * /user/bin');
  }, new Error('Constraint error, got value 72 expected range 0-59'));

  t.end();
});
```

Example2: Day of the week out of range

```
test('day of the week value out of the range', function(t) {
  t.throws(function() {
    CronExpression.parse('* * * * 9 /user/bin');
  }, new Error('Constraint error, got value 9 expected range 0-7'));

  t.end();
});
```

Example3: April doesnt have 31 days

```
test('April doesnt have 31 days', function(t) {  
  t.throws(function() {  
    const iter = CronExpression.parse('0 0 31 4 * /user/bin');  
    iter.next();  
  }, new Error('Invalid explicit day of month definition'));  
  
  t.end();  
});
```