

Parsing

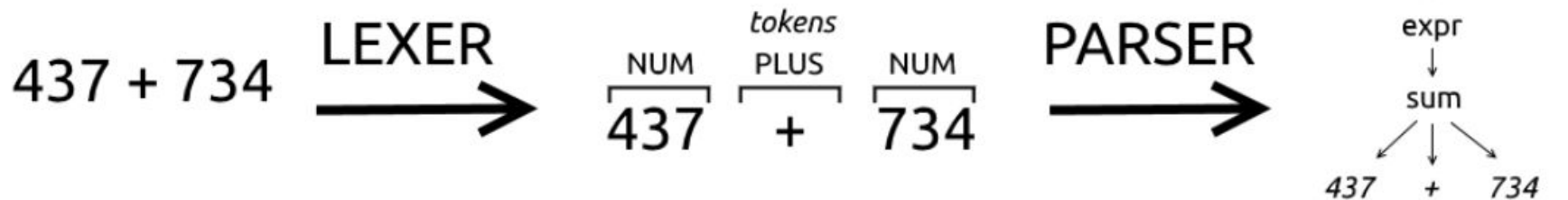
Sille, Rasmus, Nanna &
Thomas

Agenda

- Key concepts
- Definition of parsing
 - Example of parsing
- Why parse data?
- Sample code
- Syntaxes for parsing
- Links

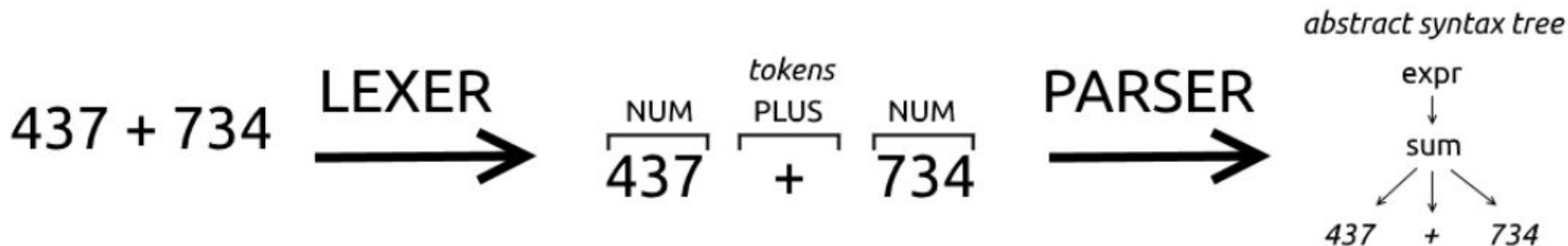
Key concepts

- Strings: a sequence of characters
- Arrays: a collection of elements (values or variables)
- Lexer: divides the string into individual tokens
- Tokens: single elements



Definition of parsing

- to analyze (a string of characters) in order to associate groups of characters with the syntactic units of the underlying grammar.
 - to analyze (a sentence) in terms of grammatical constituents, identifying the parts of speech, syntactic relations, etc.
- Transformation from a sequence to a tree



Example of parsing: Raw

Raw

Parsed

```
{"coord":{"lon":-0.13,"lat":51.51},"weather":  
[{"id":804,"main":"Clouds","description":"overcast  
clouds","icon":"04n"}],"base":"cmc  
stations","main":  
{"temp":286.718,"pressure":1016.41,"humidity":96,"t  
emp_min":286.718,"temp_max":286.718,"sea_level":102
```

Example of parsing: Parsed

```
▼ {  
  ▼ "coord": {  
    "lon": -0.13,  
    "lat": 51.51  
  },  
  ▼ "weather": [  
    ▼ {
```

Raw

Parsed

Why parse data?

- creates structure
- breaks down the code into smaller pieces
- makes the data readable for yourself
- useful when working with APIs where the data aren't structured in JSON format

Sample code

Link to sample code:

https://github.com/thomasthomsen16/mini_ex_all/tree/master/Parsing_sample

p5 References – parsing

sort()

```
function setup() {  
  var numbers = [2, 6, 1, 5, 14, 9, 8, 12];  
  print(numbers); // [2, 6, 1, 5, 14, 9, 8, 12]  
  var count = 5; // Less than the length of the array  
  
  numbers = sort(numbers, count);  
  print(numbers); // [1,2,5,6,14,9,8,12]  
}
```

p5 References – parsing

split()

Pat
Xio
Alex

```
var names = 'Pat,Xio,Alex';  
var splitString = split(names, ',');  
text(splitString[0], 5, 30);  
text(splitString[1], 5, 50);  
text(splitString[2], 5, 70);
```

p5 References – parsing

splitToken()

```
function setup() {  
  var myStr = 'Mango, Banana, Lime';  
  var myStrArr = splitTokens(myStr, ',');  
  
  print(myStrArr); // prints : ["Mango"," Banana"," Lime"]  
}
```

p5 References – parsing

subset()

```
function setup() {  
  var myArray = [1, 2, 3, 4, 5];  
  print(myArray); // [1, 2, 3, 4, 5]  
  
  var sub1 = subset(myArray, 0, 3);  
  var sub2 = subset(myArray, 2, 2);  
  print(sub1); // [1,2,3]  
  print(sub2); // [3,4]  
}
```

Links

- Syntaxes for parsing (p5.js reference):
 - <https://p5js.org/reference/#/p5/splitTokens>
 - <https://p5js.org/reference/#/p5/subset>
 - <https://p5js.org/reference/#/p5/split>
 - <https://p5js.org/reference/#/p5/splice>
 - <https://p5js.org/reference/#/p5/str>
 - <https://p5js.org/reference/#/p5/join>
 - <https://p5js.org/reference/#/p5/sort>
- <https://tomassetti.me/parsing-in-javascript/>
- Example of parsing:
 - Focusses on text: <https://creative-coding.decontextualize.com/text-and-type/>
 - Parsing weather data:
https://books.google.dk/books?id=iP3GCgAAQBAJ&pg=PT205&lpg=PT205&dq=p5.js+parsing&source=bl&ots=4ulM5cWwAi&sig=zOCARIAwARG-ct_zR-3ki9eAeVo&hl=da&sa=X&ved=0ahUKEwjor7Xgy4naAhVliywKHfaEANc4FBD0AQhaMAc#v=onepage&q=p5.js%20parsing&f=false