JSON Parser

JSONParser(str) has many different parsing functions.

1. Should be able to parse:
   1. Booleans
   2. Strings
   3. Numbers
   4. Null
   5. Partitions (objects, arrays) -> which needs to parse through its contents again.
2. Has a parent function
   1. Which has helper functions
   2. Which calls parent functions again….
   3. In other words – the JSON parser can be an example of mutual recursion.
3. JSON – “Javascript Object Notation”
   1. Represents structured data based on JS Syntax as a string.
   2. Useful when communicating between front/back or to external APIs.
   3. JS native JSON object contains methods itself for serializing/deserializing JSON data.
   4. Many languages also have such functionality.
   5. Object string keys in JSON strings are always wrapped in double quotes
   6. And so the JSON string itself must always be wrapped in a single quote or a back tick.
   7. Valid JSON Data types:
      1. Primitives
         1. String
         2. Boolean
         3. Number
         4. Null
      2. Composites
         1. Object
         2. Array
   8. We’ll see mutual recursion when we have to break down composite objects to parse through its contents, whatever that may be.
4. **JSON Rules:**
   1. **JSON is purely a string with a specified format.**
   2. **It must be syntactically correct JS.**
   3. **Can take the form of any valid primitive or composite data types.**
   4. **Requires double quotes are used on strings.**
   5. **JSON Property names must be inside quotes.**
5. Parsing through composite object:
   1. High level –
   2. We have an object storing bracket pairs.
   3. And we have a bracketStack array that can store the brackets as we encounter them.
   4. Chunks is also initialized to an array, and current Chunk is an empty string.
   5. For the JSON string representation of the array,
      1. We’ll ignore the first bracket and the last bracket.
      2. And we update the “current chunk” with the value within the string.
      3. We also need to check whether or not the first character is a double quote or a back space.