Technical Test

This exercise is to create a random poem generator using the following grammatical rules:

```
POEM: <LINE> <LINE> <LINE> <LINE> <LINE>

LINE: <NOUN>|<PREPOSITION>|<PRONOUN> $LINEBREAK

ADJECTIVE: black|white|dark|light|bright|murky|muddy|clear <NOUN>|<ADJECTIVE>|$END
NOUN:
heart|sun|moon|thunder|fire|time|wind|sea|river|flavor|wave|willow|rain|tree|flower|
field|meadow|pasture|harvest|water|father|mother|brother|sister
<VERB>|<PREPOSITION>|$END

PRONOUN: my|your|his|her <NOUN>|<ADJECTIVE>

VERB: runs|walks|stands|climbs|crawls|flows|flies|transcends|ascends|descends|sinks
<PREPOSITION>|<PRONOUN>|$END

PREPOSITION:
above|across|against|along|among|around|before|behind|beneath|beside|between|beyond|
during|inside|onto|outside|under|underneath|upon|with|without|through
<NOUN>|<PRONOUN>|<ADJECTIVE>
```

- To the left of the colon is the name of the rule
- To the right of the colon is the rule definition which can consist of words, keywords and references to other rules.
- A reference to another rule is marked with angle brackets, for example `<NOUN>`. Rules can reference themselves, making them recursive.
- Keywords are marked with $. There are two keywords: `LINEBREAK` and `END`. `LINEBREAK` adds a line break to the output, `END` marks that the end of a line has been reached. This means that a line can only end with an adjective, a noun or a verb.
- A grouping of elements separated by | means that one of those elements should be selected at random.
- Anything else that is plain text can be considered a word, for example `murky` or `heart`.

For example, the rule `PRONOUN` is defined as `my|your|his|her <NOUN>|<ADJECTIVE>` which means that one of the words `my`, `your`, `his` or `her` should be selected at random followed by either a `NOUN` or an `ADJECTIVE`, also selected at random.

Write a program in Java or Scala which parses the grammatical rules from a text file, then uses the parsed data to generate a random poem. Here is an example of what the output might look like:

```
my sun among her white meadow
moon upon my light
moon
your rain climbs
her murky bright clear willow
```