Recitation 5 - Finite State Machines

Learning Objective:

1. Develop experience with Java loops.
2. Design a Finite State Machine.
3. Implement a Finite State Machine.

Email Addresses

The formal definition for email address formats are in RFC 5322 (sections 3.2.3 and 3.4.1) and RFC 5321. The format of an email address is local-part@domain, where the local-part may be up to 64 UTF-8 characters long and the domain may have a maximum of 255 UTF-8 characters. The format of an email address is,

```
local-part@domain
```

the `local-part` may be quoted or unquoted. This recitation will be concerned with the unquoted form of email addresses.

Local-part

The unquoted `local-part` of an email may have any of the following ASCII characters:

- uppercase and lowercase Latin letters `A` to `Z` and `a` to `z`
- digits `0` to `9`
- printable characters `!#$%&'*+-/=?^_`{|}~`
- dot `.`, provided that it is not the first or last character and provided also that it does not appear consecutively (e.g., `John..Doe@example.com` is not allowed).

Domain

The domain name part must follow strict rules, which must match that for names allowed for

hostnames. The domain name should be made up of list of dot-separated labels, each label being limited to a length of 63 characters and consisting of:

- Uppercase and lowercase Latin letters `A` to `Z` and `a` to `z`
- digits `0` to `9`
- Hyphen or minus `-`, provided that it is not the first or last character.

Implicit in this is that domain names cannot start or end with a dot (`.`).

Example of Valid Email Address

- `jsmith@localhost`
- `jane@example.com`
- `jane.smith@example.com`
- `jane.smith@international.example.com`
- `jane/smith@example.com`
- `jane*smith-@example.com`

Designing the Finite State Machine

The Finite State Machine (FSM) will be designed during the recitation. Your task will be to implement the FSM in the accompanying `Validator` class, specifically in the `isEmailValid` method.

Task: Implementing The Finite State Machine

Your task is to implement the FSM that is designed during recitation in the `isEmailValid` method.

Submitting Your Work

After completing the above tasks, submit your work by clicking the CodeGrade link in Blackboard.