Alloy Solutions Architect Work Assignment
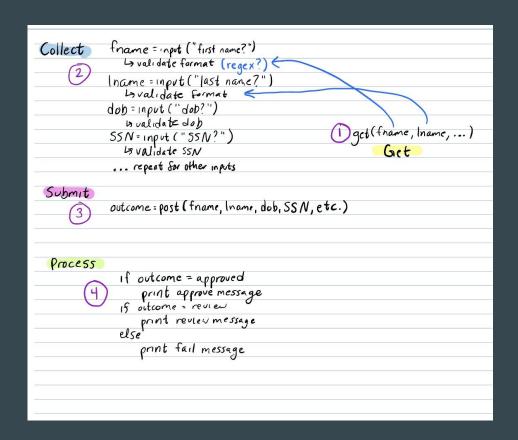
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Take Home Coding Assessment Review
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Agenda

- Resources
- Initial Scoping
- Approach
- Improvements
- Validations
- Gotchas
- Future Enhancements
- Code Review + Demo

Resources

- Java Library
- GSON Library (https://github.com/google/gson)
- ChatGPT
    - Improving code quality and readability
    - Building incremental improvements
    - Options available to parse JSON (decided on Gson) and help with formatting
    - Help with Javadoc style comments and a first draft of a ReadMe
- Alloy Documentation
    - https://developer.alloy.com/public/reference/post_evaluations

Initial Scoping

Approach

- Java's HttpClient to handle the HTTP requests and responses
- Secure Basic Auth setup
- Gson to parse and create JSON payloads
- Validate applicant input using regex
- Handle API errors

Improvements

- Started with hard-coded input values
    - → console inputs for flexibility and interactivity
- Manually checked inputs against field requirements
    - → call GET first, then build list of needed inputs
- **If, Else** statements for getting results message
    - → *switch* for readability
- Had two concurrent for loops to write to HashMap of data to POST
    - → Created Lookup Map first of GET response, then looped through needed inputs
- Restructured with functions
- Have an unchecked cast for POC
    - →used TypeToken to safely cast
- Added comments for readability

Validations

- Run test cases:
  - FirstName, Approve
  - FirstName, Review
  - FirstName, Deny
- If email doesn't match appropriate regex: re-prompt
- If SSN doesn't match appropriate regex: re-prompt

Gotchas

- **Regex:**
    - Wanted to validate with Regex from GET, but some Regex were different between GET and POST
        - Hard-coded those in
- **Address Array:**
    - Collect individual responses for Address Line 1, Address Line 2, City, State, Zip, Country, but POST wants these in an array, so had to concatenate before
- **Error reporting** :
    - Parse the body for an error block before assuming success

If Production / Future Enhancements

- Create "Applicant" class:
    - hold applicant info
    - more scalable to additional required inputs
- Increase usability/readability of regex error message
- Mapping of common regex errors automatically
    - Map "123-456-789" → "123456789"
- Add unit tests for validation of persona outcomes
- Add logging and debugging

Code Review + Demo