

# Alloy Solutions Architect Work Assignment

...

Take Home Coding Assessment Review  
Olivia Schriber

# 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](https://developer.alloy.com/public/reference/post_evaluations)

# Initial Scoping

## Collect

②

fname = input("first name?")

↳ validate format (regex?)

lname = input("last name?")

↳ validate format

dob = input("dob?")

↳ validate dob

SSN = input("SSN?")

↳ validate SSN

... repeat for other inputs

① get(fname, lname, ...)  
Get

## Submit

③

outcome = post(fname, lname, dob, SSN, etc.)

## Process

④

if outcome = approved  
print approve message

if outcome = review  
print review message

else  
print fail message

# 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

- Validate inputs against “Required”/“Optional” to ensure sending of Required inputs
- 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