



## CrossChx Code Assignment

### Double Agents

#### Background

This take-home coding assignment is used to assess the skills of candidates based on the technologies currently used at CrossChx. It is our preference to use a take-home coding exercise as it allows candidates to work in familiar conditions to ensure submissions contain their best work. Feel free to use any resources available to you, including but not limited to: online documentation, sample projects, StackOverflow, etc.

This coding assignment contains a core assignment and several stretch goals that should be attempted if time permits.

Your submission will be reviewed for:

1. Accuracy
2. Clean, elegant code
3. Clever usage of frameworks or tools
4. Adherence to best practices
5. Creative liberties taken with regards to user experience, design, architecture or tools used.
6. Simplicity of starting / running the submission

#### What We Expect From You

1. A zip file which contains the project's source code and anything which is required for it to run.
2. A README file which contains any instructions required for the reviewer to run the submission.

3. A short write up (not more than 1 page) containing:
  - a. Any lessons learned while completing the code test.
  - b. Any architectural decisions that you made.
  - c. Anything you want to highlight about your submission.

As a general rule, we expect your submission within 5 days of the assignment being delivered. Bonus points will be given for quick-turnaround.

### **Coding Assignment Instructions**

As a counter-intelligence agency, we have found the locations of 150 double-agent spies. The problem is, we need a way to visualize them on a map. Your mission (if you are willing to accept it) is to visualize this data on a map for each of the double-agents. This interface will be used by our team to assist in removing these double-agents.

Using a JVM-based language (we prefer Java / Spring Boot), build an interface to visualize the attached dataset. Each of the 150 points has been geocoded and is in the continental United States. Using a geographic visualization library, (we prefer Leaflet) draw the map of the United States with markers for each of the agents.

Here are some links which you may find useful:

1. <http://leafletjs.com/>
2. <http://projects.spring.io/spring-boot/>
3. <https://start.spring.io/>

Feel free to use any CSS or JavaScript frameworks, Spring boot extensions, plugins or other things to help you.

The structure of the CSV file is (in order)

1. Name
2. Latitude
3. Longitude

4. Age
5. Gender

### **Core Assignment**

1. Visualize the attached dataset using a map-visualization library.
2. For each double-agent, visually identify whether that double-agent is Male or Female.

### **Stretch Objective #1** \*not required

1. Provide an ability to filter out double-agents from the map given a maximum age. For example, only show me double-agents who are younger than 50 years old. This “maximum age” filter should be easily set via the user interface.

### **Stretch Objective #2** \*not required

1. Give an interactive “Search bar” that would highlight (on the map) any agents whose name matches the content of a search bar.

### **Stretch Objective #3** \*not required

1. As part of your write up, attached an architecture diagram of how you would deploy this application and it’s dependencies.

Lastly, should you have any questions about this coding assignment, please reach out directly to your recruiter.