Software Engineer – Frontend CHALLENGE

2020

shippit

Congratulations, we would like to invite you to complete our **Frontend Software Engineer** coding challenge! This should take 2-4 hours and we give candidate 3 days to complete it and send it back.

GETTING STARTED

1. Getting the right output is important, but more important is clean code and how well designed your code is. We use Geektrust for our tests so you should **absolutely** take a look at their help page on what we look for in your code, and how to get started with the coding challenge.
2. **Optional:** You could deploy your cloud to a public cloud instance and send us the link so that we can see your final UI.
3. Please add a readme with how to get your code working and how to test your code too.

We would like to thank our friends at Geektrust for allowing us to use this challenge.

PROBLEM CONTEXT

Our problem is set in the planet of Lengaburu, the distant galaxy of Tara B. After the recent war with neighbouring planet Falicornia, King Shan has exiled the Queen of Falicornia for 15 years.

Queen Al Falcone is now in hiding. But if King Shan can find ehr before the years are up, she will be exiled for another 15 years!

AVAILABLE
VEHICLES

SPACE POD
units = 2 / max_distance = 200 megamiles
speed = 2 megamiles/hour

SPACE ROCKET
units = 1 / max_distance = 300 megamiles
speed = 4 megamiles/hour

SPACE SHUTTLE
units = 1 / max_distance = 400 megamiles
speed = 5 megamiles/hour

SPACE SHIP
units = 2 / max_distance = 600 megamiles
speed = 10 megamiles/hour

POTENTIAL
HIDEOUTS

DONLON
Distance - 100 megamiles

ENCHAI
Distance - 200 megamiles

JEBING
Distance - 300 megamiles

SAPIR
Distance - 400 megamiles

LERBIN
Distance - 500 megamiles

PINGASOR
Distance - 600 megamiles

The planets Al Falcone might be hiding in & the space vehicles available at King Shan's disposal

PROBLEM 1: FINDING FALCONE

King Shan has received intelligence that Al Falcone is in hiding in one of these 6 planets - DonLon, Enchai, Jebing, Sapir, Lerbin & Pingasor. However, he has limited resources at his disposal and can send his army to only 4 of these planets.

Your coding problem is to help King Shan find Al Falcone.

WHAT YOU NEED TO DO

You need to build a UI (mockups available at the end of this PDF) through which King Shan can:

- Select 4 planets to search
- Select which space vehicles to send to these planets
- See how much time it will take for the vehicles to reach their targets
- Show final result of success or failure

WHAT WE GIVE YOU

- A planets API that list out the planets, and how far they are from Lengaburu
  https://5f5ff7f790cf8d00165573ed.mockapi.io/planets
- A vehicles API that lists the types of space vehicle at your disposal, how many of each type you have, the maximum distance a vehicle can go (range), and their speed
  https://5f5ff7f790cf8d00165573ed.mockapi.io/vehicles
- A FindFalcone API that returns whether you were successful in your search or not (we randomly assign a planet to Al Falcone)
  https://5f5ff7f790cf8d00165573ed.mockapi.io/find

PLANETS API

https://5f5ff7f790cf8d00165573ed.mockapi.io/planets

Request type: GET

- There are 6 planets but King Shan can send vehicles to search in only 4 at a time
- All are at varying distances from Lengaburu

Sample response


```
[
  {
    "name": "Donlon",
    "distance": 100
  },
  {
    "name": "Enchai",
    "distance": 200
  },
  {
    "name": "Jebing",
    "distance": 300
  },
  {
    "name": "Sapir",
    "distance": 400
  },
  {
    "name": "Lerbin",
    "distance": 500
  },
  {
    "name": "Pingasor",
    "distance": 600
  }
]
```

VEHICLES API

https://5f5ff7f790cf8d00165573ed.mockapi.io/vehicles

Request type: GET

- There are 4 types of vehicles
- The units of each vehicle type vary (eg: there are 2 space pods but only 1 space rocket)
- All have different ranges (maximum distance it can travel). If the range for a vehicle is lesser than the distance to the planet, it cannot be chosen for going to the planet
- All have a different speed. Based on the distance to the planet and the speed of the vehicle, time taken for the complete search should be shown

- All are at varying distances from Lengaburu

Sample response


```
[
  {
    "name": "Space pod",
    "total_no": 2,
    "max_distance": 200,
    "speed": 2
  },
  {
    "name": "Space rocket",
    "total_no": 1,
    "max_distance": 300,
    "speed": 4
  },
  {
    "name": "Space shuttle",
    "total_no": 1,
    "max_distance": 400,
    "speed": 5
  },
  {
    "name": "Space ship",
    "total_no": 2,
    "max_distance": 600,
    "speed": 10
  }
]
```

FINDING FALCONE API (token)

1. You first need to get a token
   https://5f5ff7f790cf8d00165573ed.mockapi.io/token
   NOTE: The token is always the same in this mock API

Request type: POST

Headers
Accept: application/json

Request body: empty

Sample response


```
{
  "token": "PlmVXHswGEQxKJIpWnKCBtNMepseniTM"
}
```

FINDING FALCONE API (request)

1. The final result is a game of luck. We will randomly assign a planet to AI Falcone (from the 6 available planets) and if the planet is in the list of 4 selected by the user, you get a success message.
   https://5f5ff7f790cf8d00165573ed.mockapi.io/find
   NOTE: This is just a mock API to test your code, it will alway return the same result

Request type: POST

Headers

Accept: application/json
Content-Type: application/json

Request body: The request body is a json object which consists of a **token, planet_names** and **vehicle_names.** Value of the token is obtained from the previous API call (/token).

planet_names is a JSON Array which consists of teh planet names you selected from the UI/ vehicle_names is also a JSON Array which consists of the vehicle names you have selected from the UI.

Sample request body

```
{
  "token": "zWSOZUcQJOPUhweUgYklARgNbuNVCyin",
  "planet_names": [
    "Donlon",
    "Enchai",
    "Pingasor",
    "Sapir"
  ],
  "vehicle_names": [
    "Space pod",
    "Space rocket",
    "Space rocket",
    "Space rocket"
  ]
}
```

FINDING FALCONE API (responses)

Sample success response

```
{
 "planet_name": "Jebing",
 "status": "success"
}
```

Sample failure response

```
{
  "status": "false"
}
```

Sample error response

```
{
  "error": "Token not initialized. Please get a new token with the
/token API"
}
```

WHAT WE LOOK FOR IN YOUR CODE

Ready to find Falcone? Remember that it is not only about getting the UI done but how you do it that matters more. We look for how modular your code is, how readable, extensible, how simple is the logic, do you have tests, how is your error handling, dependency management, how do you handle navigation, templates etc.

You can use plain javascript but extra points will be given for using a client side framework such as Angular, Backbone or React.

CHECK LIST - SUBMITTING CODE

1. Please compress the file before upload. We accept .zip, .rar, .gz and .gzip
2. Name of the file should be FEproblem1
3. Please upload only source files and do not include any libraries or executables or node_modules folder

SAMPLE MOCKUP

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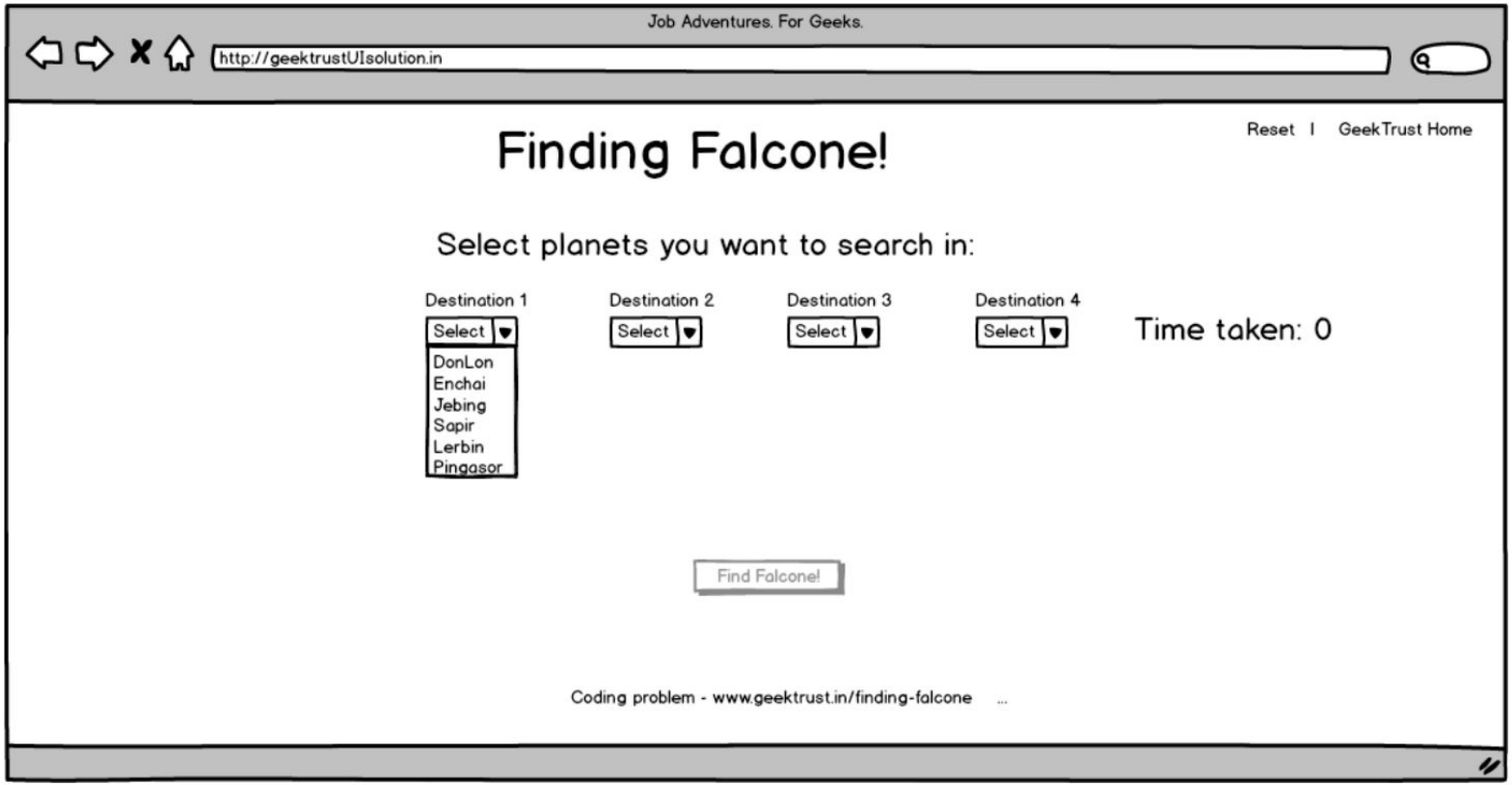
SAMPLE MOCKUP

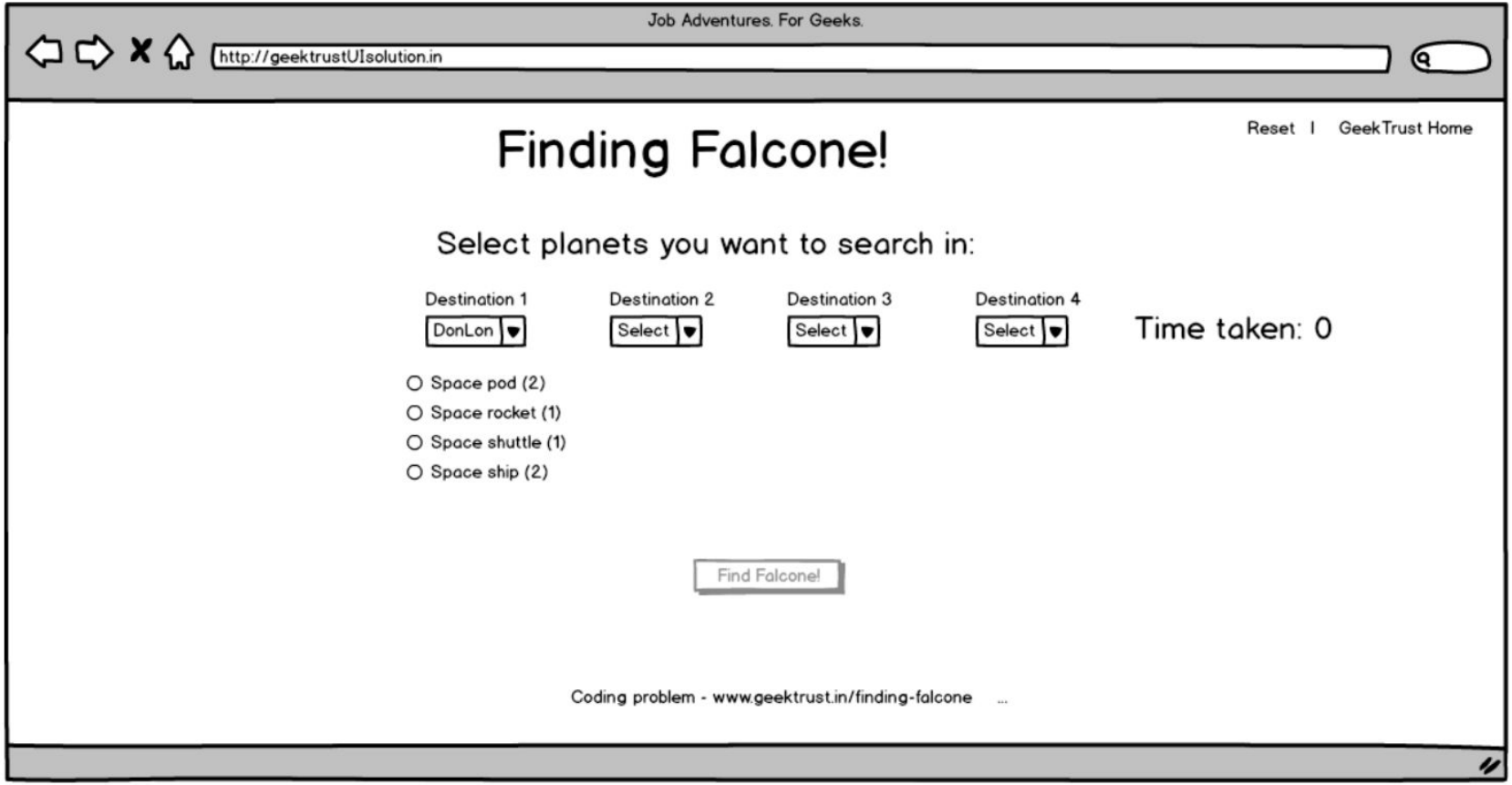
As the heading suggests, this is only a sample mockup so that you have an indication of what is expected from you.

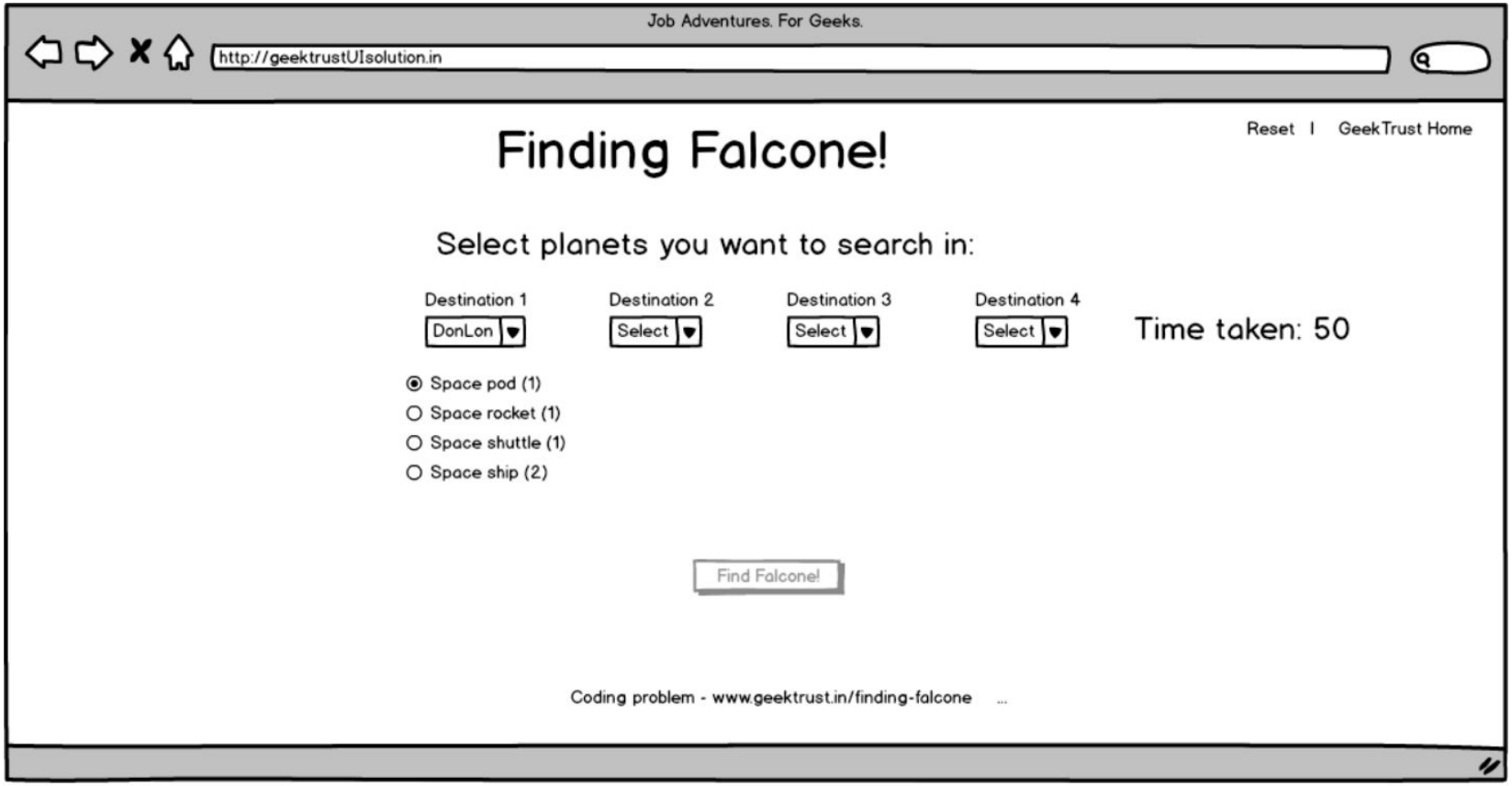
You could choose to go with a completely different user experience. But you will need to ensure:

1. All requirements mentioned in the problem are covered
2. You have a header menu bar at the top and a footer at the bottom
3. The final result should be shown on a new page and there should be navigation between at least 2 screens



extra points for implementing auto-complete in the dropdown!


Job Adventures. For Geeks.
http://geektrustUIsolution.in
Finding Falcone!
Reset I GeekTrust Home
Select planets you want to search in:
Destination 1
DonLon
Destination 2
Select
Destination 3
Select
Destination 4
Select
Time taken: 0
Space pod (2)
Space rocket (1)
Space shuttle (1)
Space ship (2)
Find Falcone!
Coding problem - www.geektrust.in/finding-falcone ...


Job Adventures. For Geeks.
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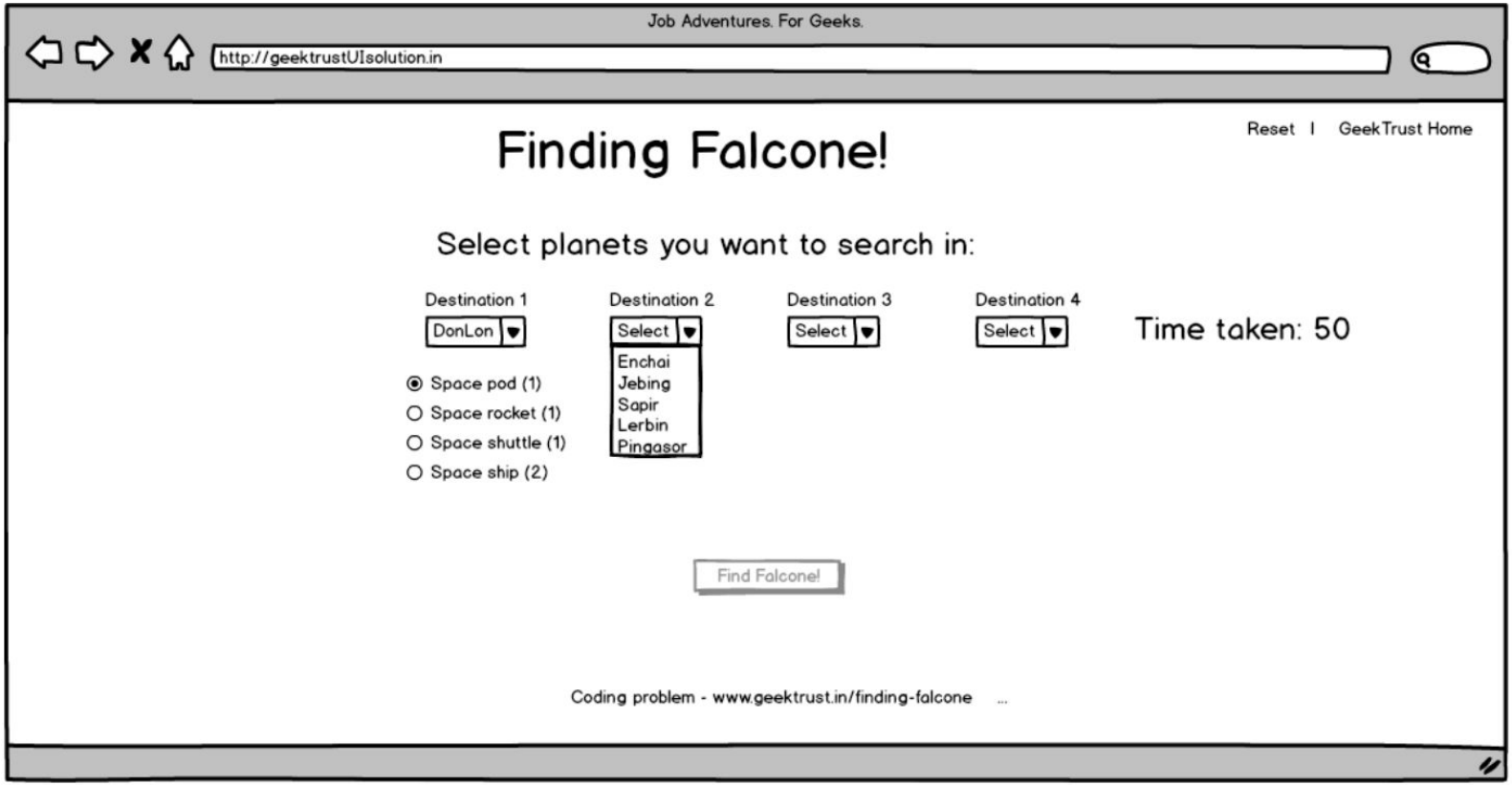
Reset I GeekTrust Home
Finding Falcone!
Select planets you want to search in:
Destination 1
DonLon
Destination 2
Select
Destination 3
Select
Destination 4
Select
Time taken: 50
Space pod (1)
Space rocket (1)
Space shuttle (1)
Space ship (2)
Find Falcone!
Coding problem - www.geektrust.in/finding-falcone ...


Job Adventures. For Geeks.
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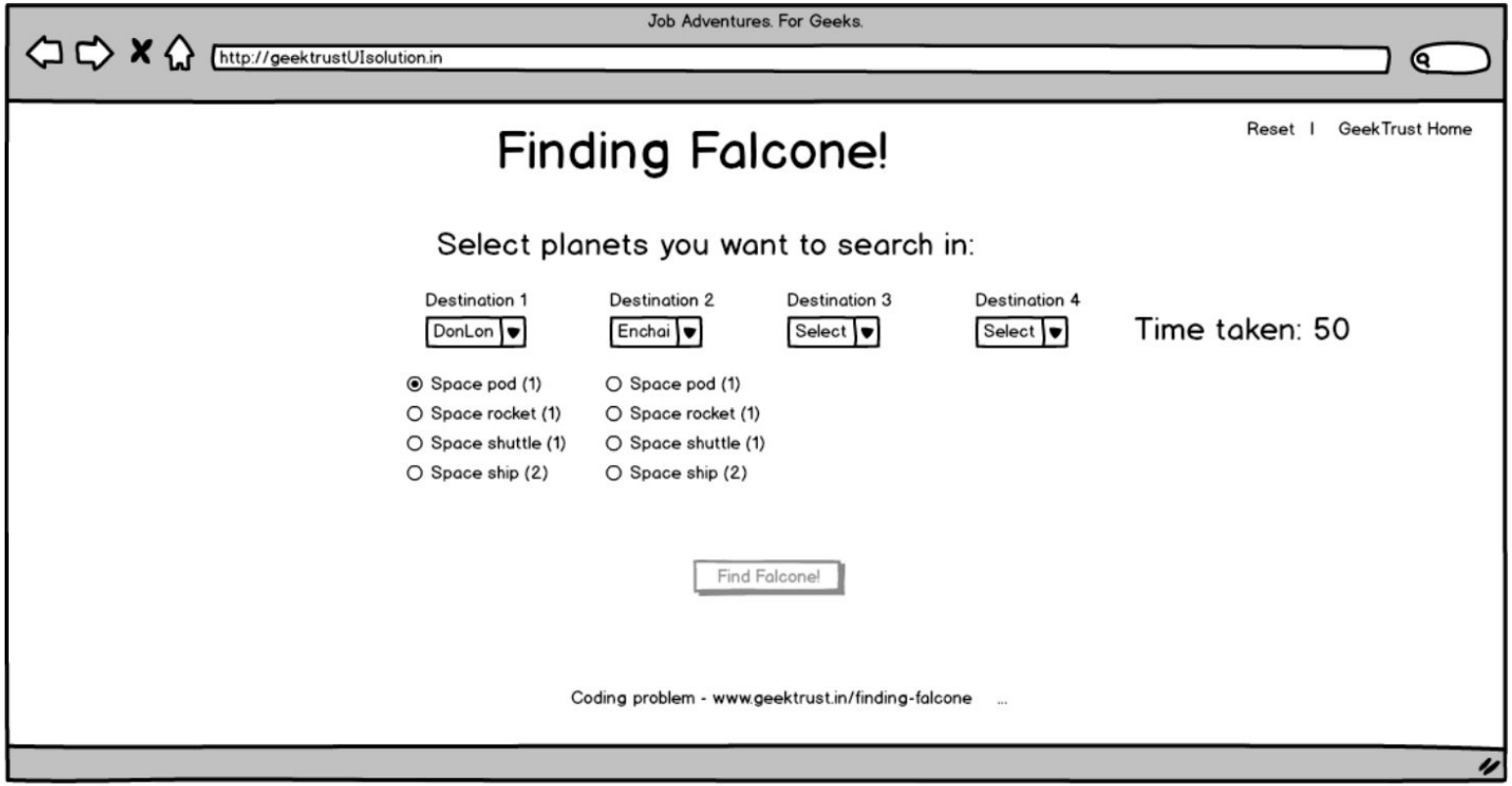
Reset I GeekTrust Home
Finding Falcone!
Select planets you want to search in:
Destination 1
DonLon
Destination 2
Select
Destination 3
Select
Destination 4
Select
Time taken: 50
Enchai
Jebing
Sapir
Lerbin
Pingasor
Space pod (1)
Space rocket (1)
Space shuttle (1)
Space ship (2)
Find Falcone!
Coding problem - www.geektrust.in/finding-falcone ...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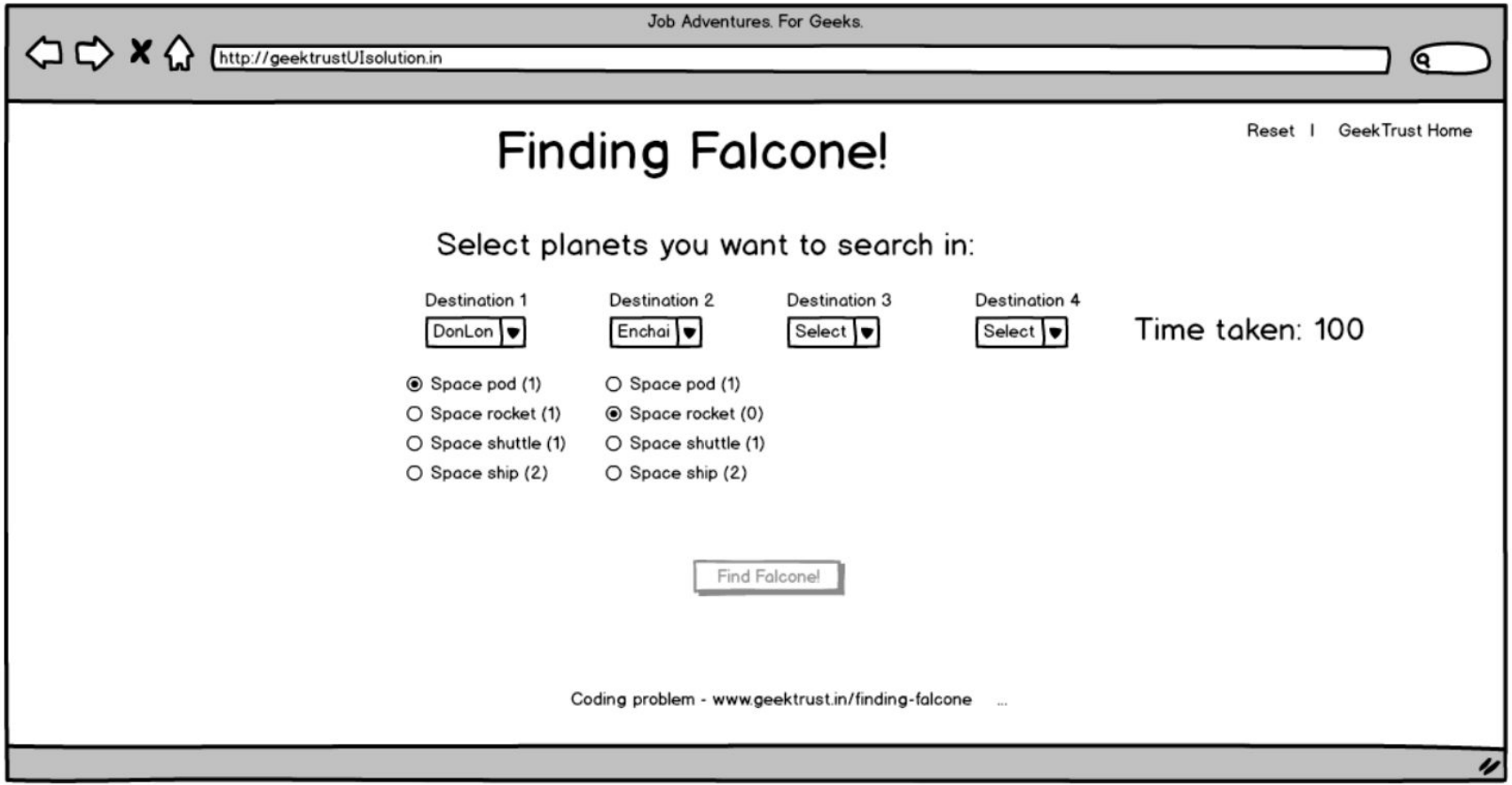
Destination 3
Select
Destination 4
Select
Time taken: 50
Space pod (1)
Space rocket (1)
Space shuttle (1)
Space ship (2)
Space pod (1)
Space rocket (1)
Space shuttle (1)
Space ship (2)
Find Falcone!
Coding problem - www.geektrust.in/finding-falcone ...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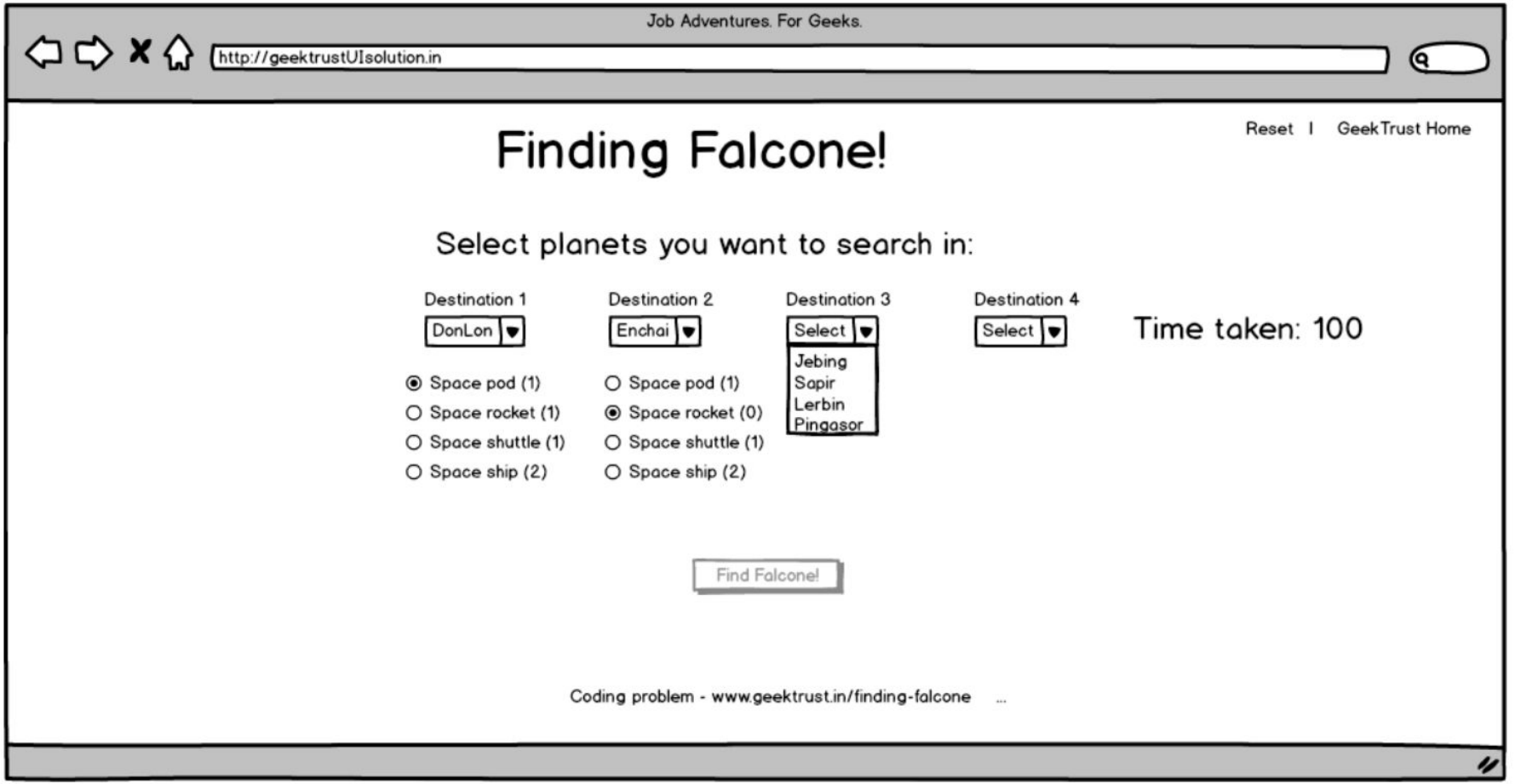
Finding Falcone!
Reset I GeekTrust Home
Select planets you want to search in:
Destination 1
DonLon
Destination 2
Enchai
Destination 3
Select
Destination 4
Select
Time taken: 100
Space pod (1)
Space rocket (1)
Space shuttle (1)
Space ship (2)
Space pod (1)
Space rocket (0)
Space shuttle (1)
Space ship (2)
Find Falcone!
Coding problem - www.geektrust.in/finding-falcone ...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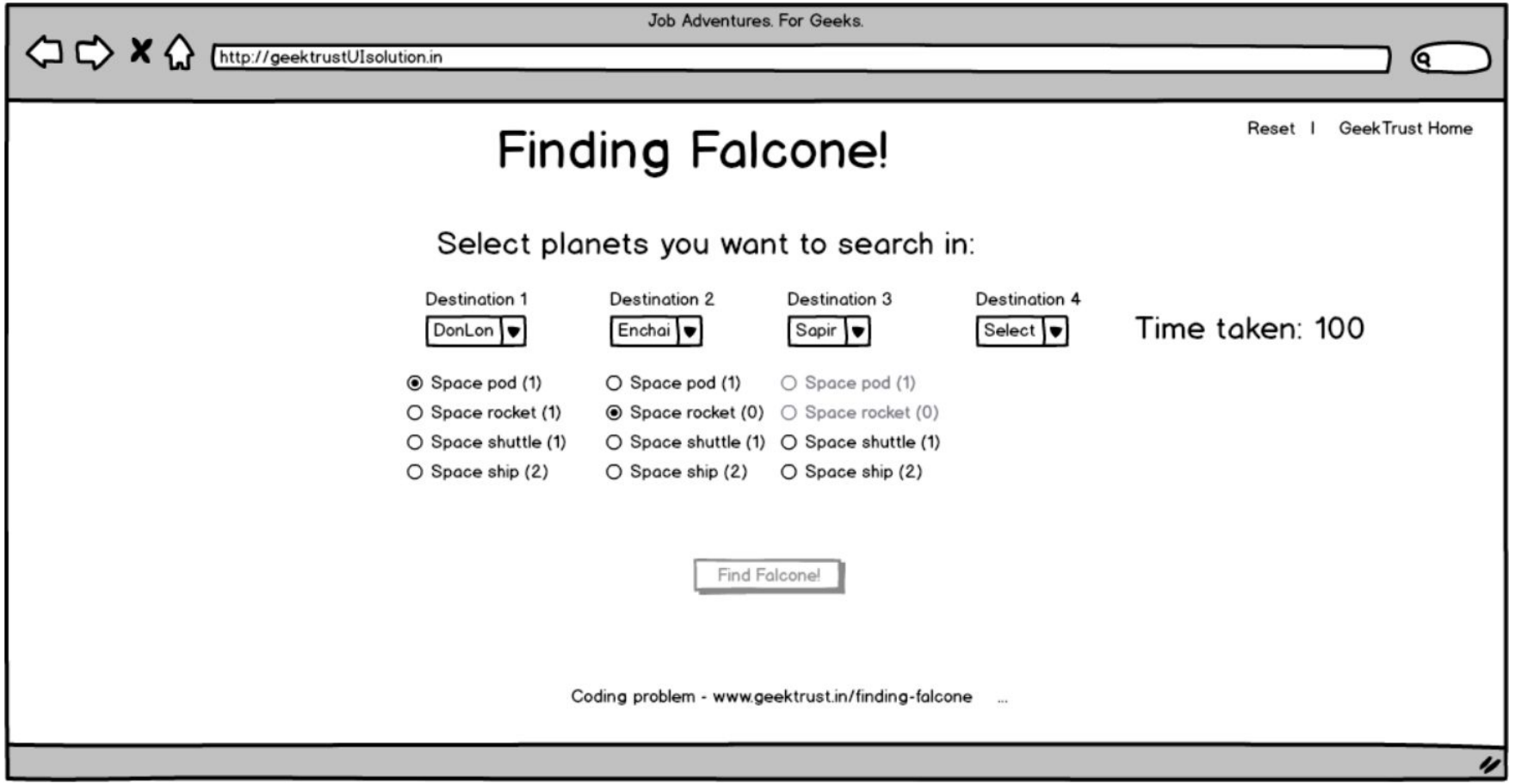
Space rocket (1)
Space shuttle (1)
Space ship (2)
Destination 2
Enchai
Space pod (1)
Space rocket (0)
Space shuttle (1)
Space ship (2)
Destination 3
Select
Jebing
Sapir
Lerbin
Pingasor
Destination 4
Select
Time taken: 100
Find Falcone!
Coding problem - www.geektrust.in/finding-falcone ...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Select planets you want to search in:
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Destination 4
Select
Time taken: 100
Space pod (1)
Space rocket (1)
Space shuttle (1)
Space ship (2)
Space pod (1)
Space rocket (0)
Space shuttle (1)
Space ship (2)
Space pod (1)
Space rocket (0)
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Find Falcone!
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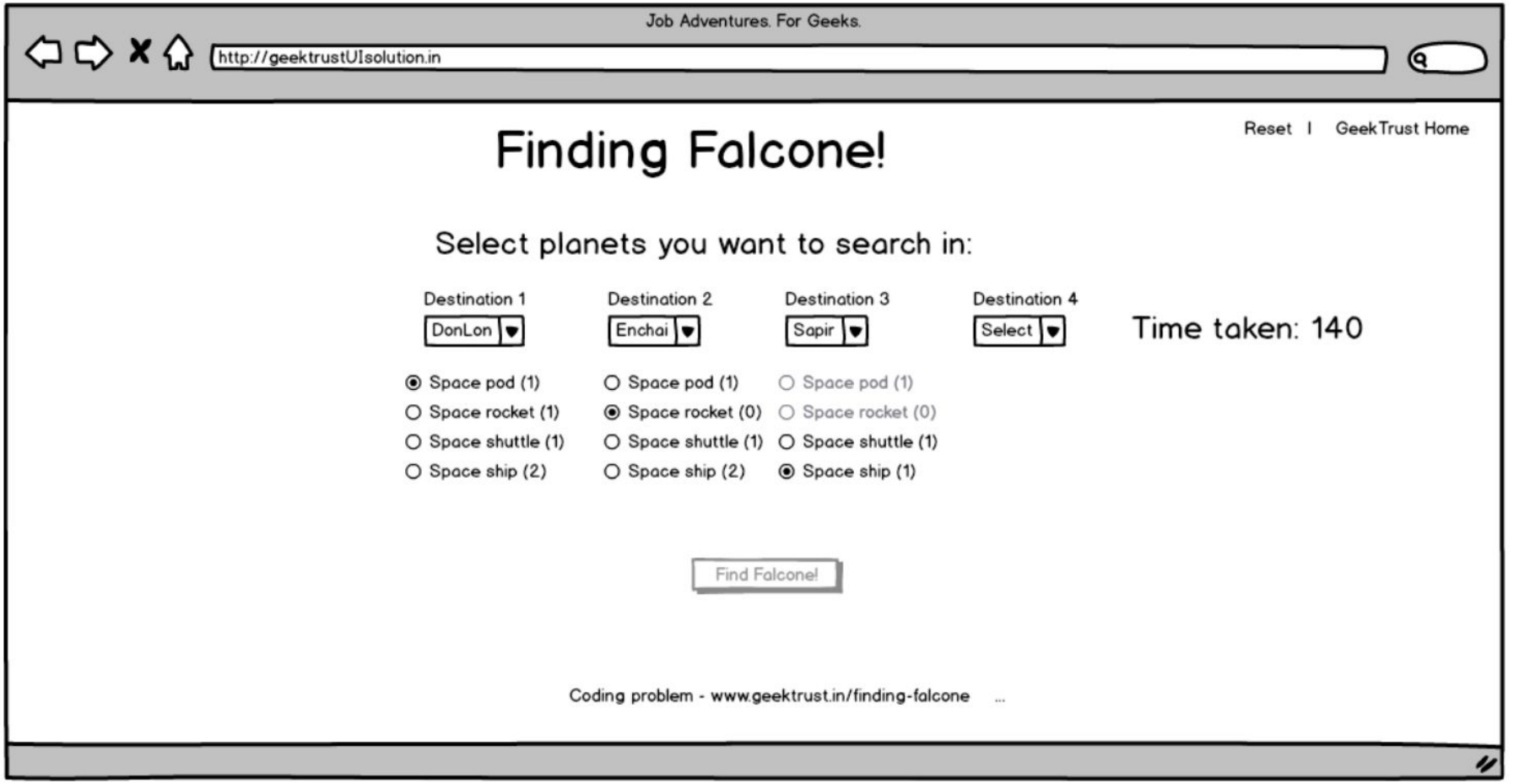
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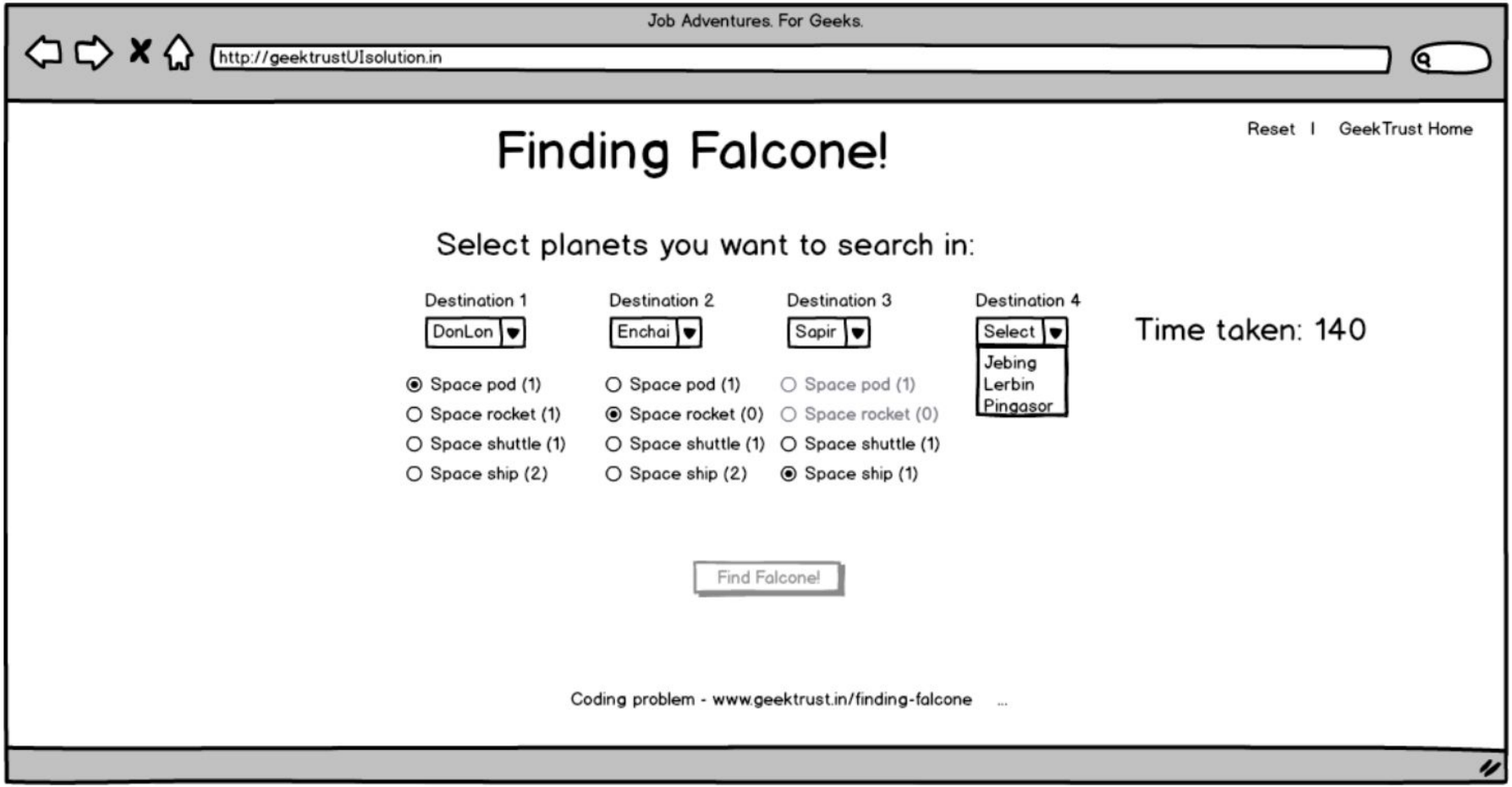
Reset I GeekTrust Home
Finding Falcone!
Select planets you want to search in:
Destination 1
DonLon
Destination 2
Enchai
Destination 3
Sapir
Destination 4
Select
Time taken: 140
Space pod (1)
Space rocket (1)
Space shuttle (1)
Space ship (2)
Space pod (1)
Space rocket (0)
Space shuttle (1)
Space ship (2)
Space pod (1)
Space rocket (0)
Space shuttle (1)
Space ship (1)
Find Falcone!
Coding problem - www.geektrust.in/finding-falcone ...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Space shuttle (1)
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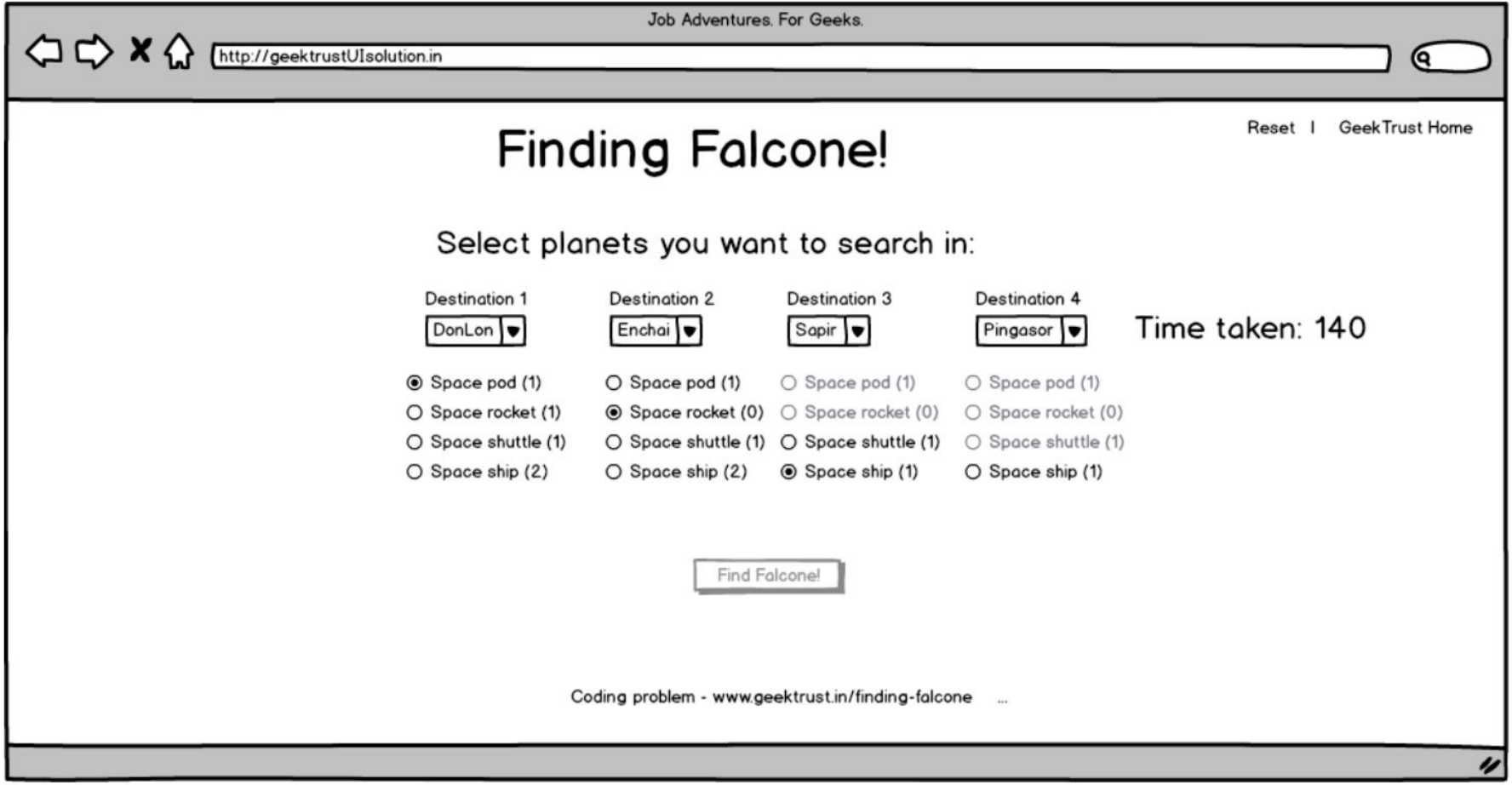
Space pod (1)
Space rocket (0)
Space shuttle (1)
Space ship (2)
Destination 3
Sapir
Space pod (1)
Space rocket (0)
Space shuttle (1)
Space ship (1)
Destination 4
Select
Jebing
Lerbin
Pingasor
Time taken: 140
Find Falcone!
Coding problem - www.geektrust.in/finding-falcone ...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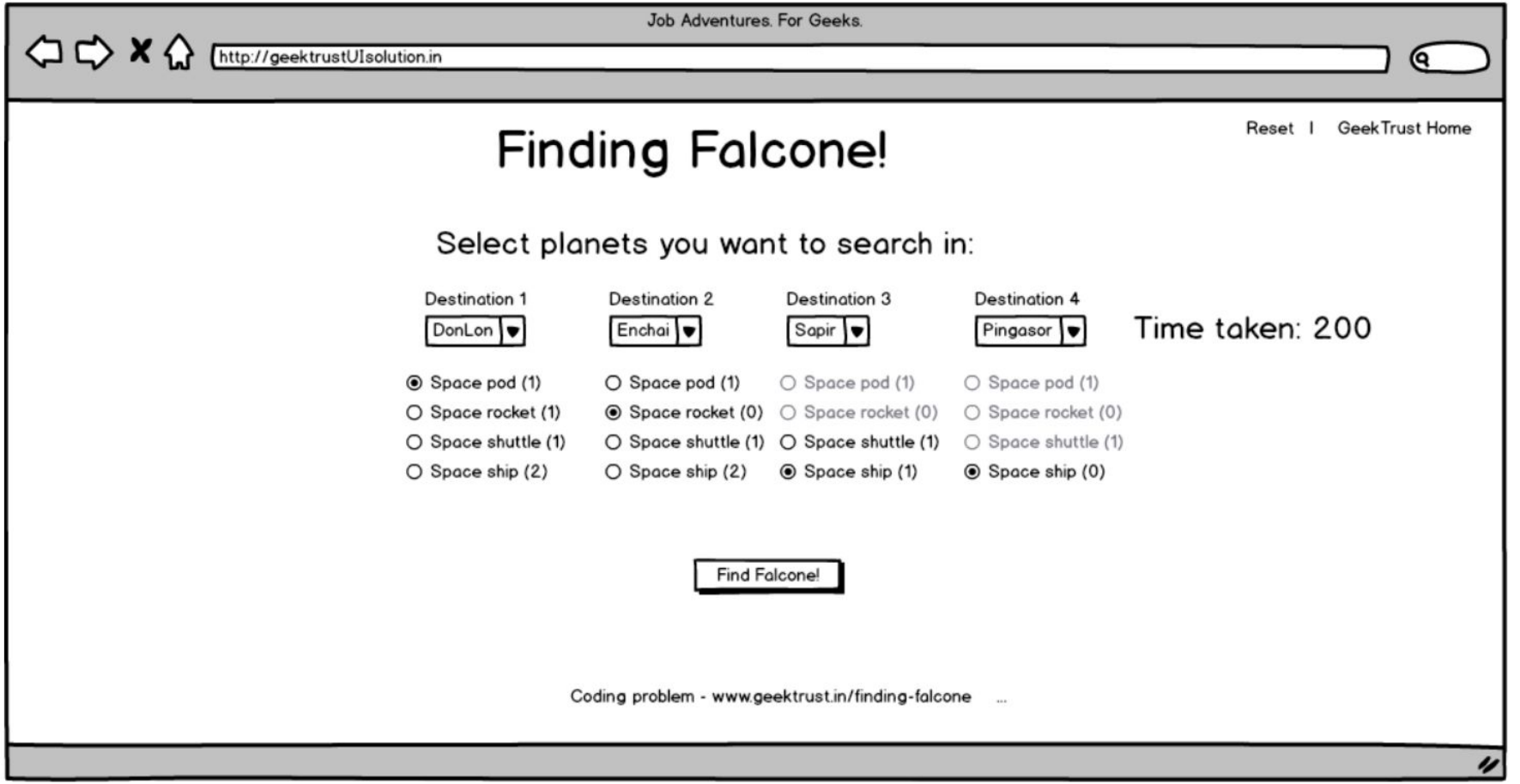
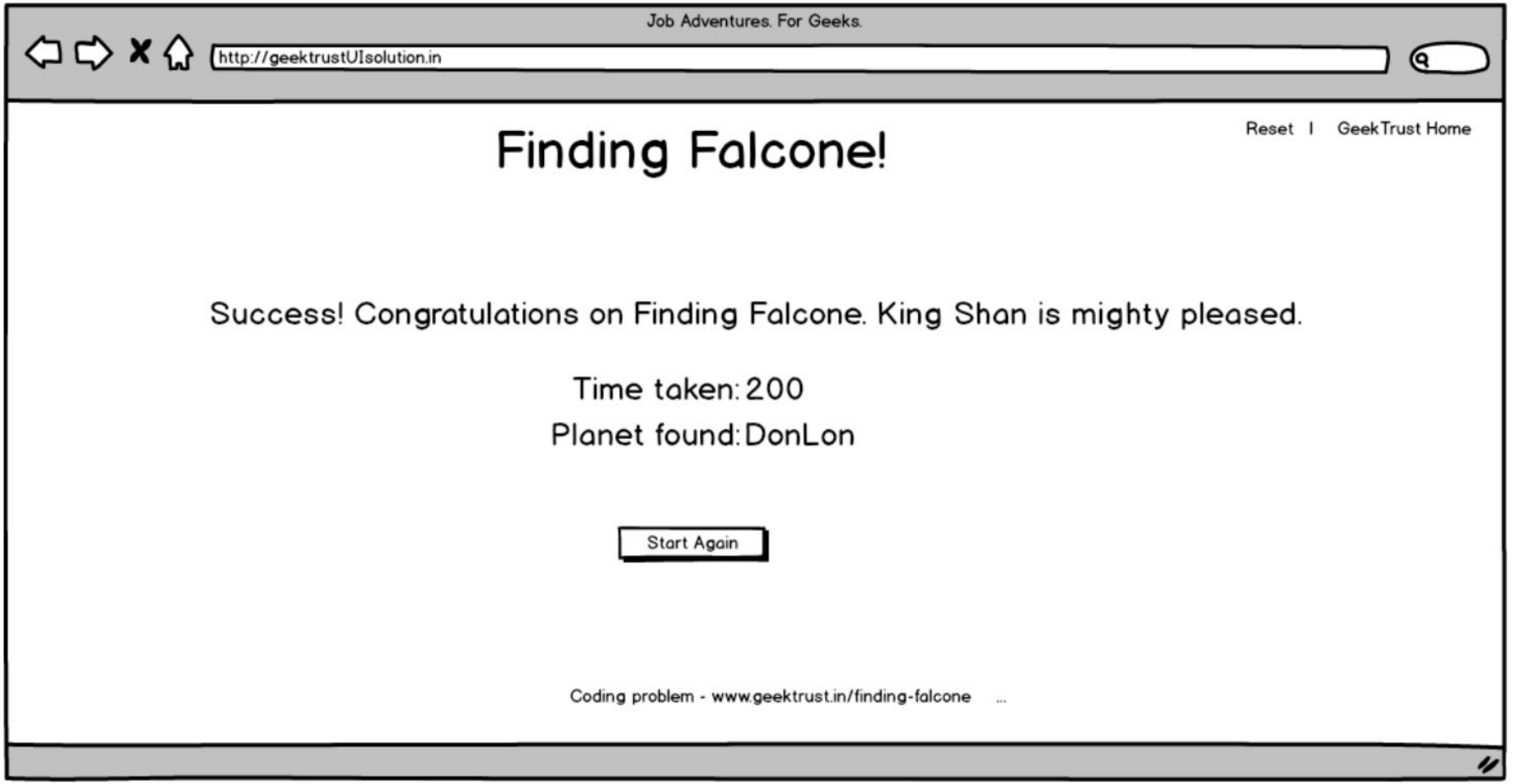
Destination 2
Enchai
Destination 3
Sapir
Destination 4
Pingasor
Time taken: 140
Space pod (1)
Space rocket (1)
Space shuttle (1)
Space ship (2)
Space pod (1)
Space rocket (0)
Space shuttle (1)
Space ship (2)
Space pod (1)
Space rocket (0)
Space shuttle (1)
Space ship (1)
Space pod (1)
Space rocket (0)
Space shuttle (1)
Space ship (1)
Find Falcone!
Coding problem - www.geektrust.in/finding-falcone ...


Job Adventures. For Geeks.
http://geektrustUIsolution.in
Reset I GeekTrust Home
Finding Falcone!
Select planets you want to search in:
Destination 1
DonLon
Destination 2
Enchai
Destination 3
Sapir
Destination 4
Pingasor
Time taken: 200
Space pod (1)
Space rocket (1)
Space shuttle (1)
Space ship (2)
Space pod (1)
Space rocket (0)
Space shuttle (1)
Space ship (2)
Space pod (1)
Space rocket (0)
Space shuttle (1)
Space ship (1)
Space pod (1)
Space rocket (0)
Space shuttle (1)
Space ship (0)
Find Falcone!
Coding problem - www.geektrust.in/finding-falcone ...


Job Adventures. For Geeks.
http://geektrustUIsolution.in
Finding Falcone!
Reset I GeekTrust Home
Success! Congratulations on Finding Falcone. King Shan is mighty pleased.
Time taken: 200
Planet found: DonLon
Start Again
Coding problem - www.geektrust.in/finding-falcone ...