

Important: - Please read this document carefully and proceed with the assignment as per your convenience.

About Leadzen

Leadzen.ai is an AI-powered funded startup that aims to automate the research and report of any organization. We provide the most comprehensive insights on any of 1000+ structured and unstructured data elements from over 200 sources. Our proprietary suite of intelligent learning-based artificial intelligence technology identifies qualified prospects & flags business risks whilst getting the most comprehensive insights on any company. Our founders come with strong domain expertise. They have successfully run and exited ventures previously. We are a funded company by some high-profile individuals, including 2 of the founders of Indian unicorn.

Our tech stack is based on Python and **React**. Our data is split between Elasticsearch, Mongo and Postgres. Deployment is on Azure using Docker. Traefik as our TLS/SSL terminator and Load balancers. Redis is our Message Queue and Caching provider. We use Async processes by default, only falling back to sync processes where we can't avoid it. We use Huggingface Transformers for all our AI processes. Random Forest is used for most simple ML tasks

Notes: - Read these points to understand more about this role at Leadzen.

In case, if you have more questions, feel free to get in touch with your POC (Point of Contact).

- We're looking for a PyTest developer to develop automated scripts for our Backend application and who would be willing to learn new things and implement them in our projects to improve quality
- This will lead your career path to becoming a Software Development Engineer - Test and Quality Assurance (SDE-T/QA).
- You will have opportunities to work on other projects involving Jenkins CI/CD, Docker, Azure, and many more to come.
- You will have mentors to guide you when required
- You are expected to finish the assignment in the best way possible, We at Leadzen check out all submissions and contacts a candidate based on these assignments.
- Please attach your updated resume with your submissions

Pre-requisites: -

- HTML, CSS, JavaScript, Python (FastAPI)
- Git, Bash, REST APIs
- Cypress.js Automation Testing (Optional, Is a plus)
- React/Typescript (Optional, Is a plus)

Assignment: -

Complete both the tasks and push the code to a github repository, and send the git repo link. Assignments not sent via github link will be ignored

TASK 1:

Automated API testing

- Use the git link (<https://github.com/malharlakdawala/fastpi-simple-test-api>) containing a sample application
- Explicitly try to cover major scenarios and build the automated test cases around them using PyTest or a tool of your choice
- You can follow the commands followed in readme file to install and run the application

NOTE: - We recommend focusing on things like handling responses and error cases, consistency/quality of user experience, relevance of API request results and thoughts on security/risk.
Good luck

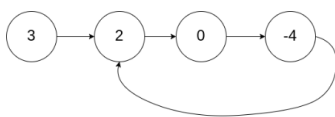
TASK 2:

Pick any 2 problems from below and solve and submit the code in separate files and folders in the git repo

Problem 1:

Identify whether the given linked list is cyclic or not?

Example 1:

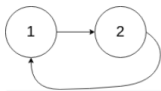


Input: head = [3,2,0,-4], pos = 1

Output: true

Explanation: There is a cycle in the linked list, where the tail connects to the 1st node (0-indexed).

Example 2:



Input: head = [1,2], pos = 0

Output: true

Explanation: There is a cycle in the linked list, where the tail connects to the 0th node.

Example 3:



Input: head = [1], pos = -1

Output: false

Explanation: There is no cycle in the linked list.

Problem 2:

Find the longest substring with repeating characters

Example 1:

```
Input: s = "abcabcbb"
Output: 3
Explanation: The answer is "abc", with the length of 3.
```

Example 2:

```
Input: s = "bbbbbb"
Output: 1
Explanation: The answer is "b", with the length of 1.
```

Example 3:

```
Input: s = "pwwkew"
Output: 3
Explanation: The answer is "wke", with the length of 3.
Notice that the answer must be a substring, "pwke" is a subsequence and not a substring.
```

Problem 3:

Find the longest palindrome from the given string. Palindrome is a word, phrase, or sequence that reads the same backwards as forwards, e.g. madam, civic, radar

Example 1:

```
Input: s = "babad"
Output: "bab"
Explanation: "aba" is also a valid answer.
```

Example 2:

```
Input: s = "cbdd"
Output: "bb"
```

Submission: -

You can submit your GIT repository link to malhar@leadzen.ai. Please submit the assignment in the form of Git repository link only.