

Practice Interview

Objective

The partner assignment aims to provide participants with the opportunity to practice coding in an interview context. You will analyze your partner's Assignment 1. Moreover, code reviews are common practice in a software development team. This assignment should give you a taste of the code review process.

Group Size

Each group should have 2 people. You will be assigned a partner

Part 1:

You and your partner must share each other's Assignment 1 submission.

Part 2:

Create a Jupyter Notebook, create 6 of the following headings, and complete the following for your partner's assignment 1:

- Paraphrase the problem in your own words.

In []: *# Your answer here*

Find the missing integers greater than 0 in the given input

- Create 1 new example that demonstrates you understand the problem.
Trace/walkthrough 1 example that your partner made and explain it.

In [12]: *# Your answer here*

```
print(missing_num([3, 0, 1])) # Output should be 2
print(missing_num([2,4])) # Output should be 1,2,3
print(missing_num([0,1,2])) # Output should be -1
```

2
0
3

- Copy the solution your partner wrote.

```
In [1]: # Your answer here
from typing import List
def missing_num(nums: List[int]) -> int:
    nums.sort()
    n = len(nums)
    if nums[0] != 0:
        return 0
    if nums[-1] != n:
        return n
    for i in range(1, len(nums)):
        if nums[i] != i:
            return i

    return 0
```

- Explain why their solution works in your own words.

```
In [ ]: # Your answer here

# It doesnt work, if for example number 3 when I added all the values to the list,
# Additionally, I add a list without 0 it correctly adds 0 but doesnt go futher to
# n values should have been set to the highest values so if they have sorted the li
```

- Explain the problem's time and space complexity in your own words.

```
In [ ]: # Your answer here

Since it will need to sort the list first it will have time complexity of  $O(n\log(n))$ 
So overall it will have time complexity of  $O(n)$ 
And space complexity of going through the whole list would be  $O(n)$ .
```

- Critique your partner's solution, including explanation, and if there is anything that should be adjusted.

```
In [ ]: # Your answer here

I already mentioned the issues above. I would like to add if they had find the high
```

Part 3:

Please write a 200 word reflection documenting your process from assignment 1, and your presentation and review experience with your partner at the bottom of the Jupyter Notebook under a new heading "Reflection." Again, export this Notebook as pdf.

Reflection

```
In [ ]: # Your answer here
# Presenting my work to my partner was an insightful experience. It provided an opp
# Overall, the assignment, presentation, and review process were enriching experien
```

Evaluation Criteria

We are looking for the similar points as Assignment 1

- Problem is accurately stated
- New example is correct and easily understandable
- Correctness, time, and space complexity of the coding solution
- Clarity in explaining why the solution works, its time and space complexity
- Quality of critique of your partner's assignment, if necessary

Submission Information

🔔 **Please review our [Assignment Submission Guide](#)** 🔔 for detailed instructions on how to format, branch, and submit your work. Following these guidelines is crucial for your submissions to be evaluated correctly.

Submission Parameters:

- Submission Due Date: HH:MM AM/PM - DD/MM/YYYY
- The branch name for your repo should be: `assignment-2`
- What to submit for this assignment:
 - This Jupyter Notebook (assignment_2.ipynb) should be populated and should be the only change in your pull request.
- What the pull request link should look like for this assignment:
 - `https://github.com/<your_github_username>/algorithms_and_data_structures/`
 - Open a private window in your browser. Copy and paste the link to your pull request into the address bar. Make sure you can see your pull request properly. This helps the technical facilitator and learning support staff review your submission easily.

Checklist:

- ☐ Created a branch with the correct naming convention.
- ☐ Ensured that the repository is public.
- ☐ Reviewed the PR description guidelines and adhered to them.
- ☐ Verify that the link is accessible in a private browser window.

If you encounter any difficulties or have questions, please don't hesitate to reach out to our team via our Slack at [#cohort-3-help](#). Our Technical Facilitators and Learning Support staff are here to help you navigate any challenges.