



*A website for all your interview question needs.*

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# What is Gateway?

- A user-friendly website
- Helps answer most common interview questions within a company
- Variety of questions based on:
  - Role
  - Level
  - Type (System Design, Behavioral, Technical, etc.)
- Information provided by users

# Cost Estimation: \$3396

Hardware = \$36

- Primarily server cost (cut down with AWS)
- \$1-3 per month, dependent on server traffic

Software = \$0

- Not using paid software products

Personnel = \$3360

- Starting rate is \$60 per hour
- Average workday is 8 hours
- 7 team members

# Effort Estimation I (FP Method)

	Function Category	Count	Complexity			Count × Complexity
			Simple	Average	Complex	
1	Number of user input	8	3	4	6	24
2	Number of user output	4	4	5	7	16
3	Number of user queries	2	3	4	6	6
4	Number of data files and relational tables	2	7	10	15	14
5	Number of external interfaces	1	5	7	10	5
GFP						55

## Effort Estimation II

$$PCA = 0.65 + 0.01(23) = 0.65 + 0.23 = \underline{0.88}$$

$$FP = GFP \times PCA = 55 \times 0.88 = \underline{48.4 \text{ FP}}$$

$$E = FP / \text{productivity} = 48.4 / 60 \approx 0.8067 \approx \underline{1 \text{ person-week}}$$

Team size = 7, so the project duration would be:

$$D = E / \text{team size} = 7 \text{ days} / 7 \text{ people} = \underline{1 \text{ day}}$$

- Somewhat inaccurate
- Will most likely take longer due to inexperience & other responsibilities

# Project Scheduling & Timeline

- Mon - Fri, 8 hours per day
- ~7 team members for MVP prototype
- Completion within a week (prototype)
- Multiple parts completed via parallelism
  - Ex. front-end, back-end, and database setup can be completed synchronously
- Dec. 5 → begin development of prototype
- Dec. 5th - 6th → work on implementation (individual)
- Dec. 7th → merge parts together
- Dec. 8th → bug/issue testing + fixes
- Dec. 9th → delivery of prototype (live demo)

# Functional Requirements

1. The user shall be able to log in and log out
2. The user shall be able to search questions by company
3. The user shall be able to filter questions by interview type, role, and level
4. The user shall be able to add comments to an interview question through a thread if logged in
5. The user shall be able to upvote and downvote questions if logged in

# Non-Functional Requirements (shortened)

1. **Usability** - The UI design should be user-friendly, providing easy access to all features of the website.
2. **Performance** - The website should respond in a timely manner when provided with a stable high-speed internet connection.
3. **Space** - The website's data should be stored efficiently so as to not take up an excessive amount of storage space.
4. **Dependability** - The website should be available nearly 24/7 with downtime no longer than fifteen minutes in any one day.
5. **Security** - Users should only be able to create and interact with questions if logged in.
6. **Ethical** - Questions with higher upvote scores should be shown first to filter out heavily downvoted questions, which may be inaccurate or harmful.
7. **Safety/security** - Users should feel confident that they can post interview questions without being traced and stay anonymous if desired.

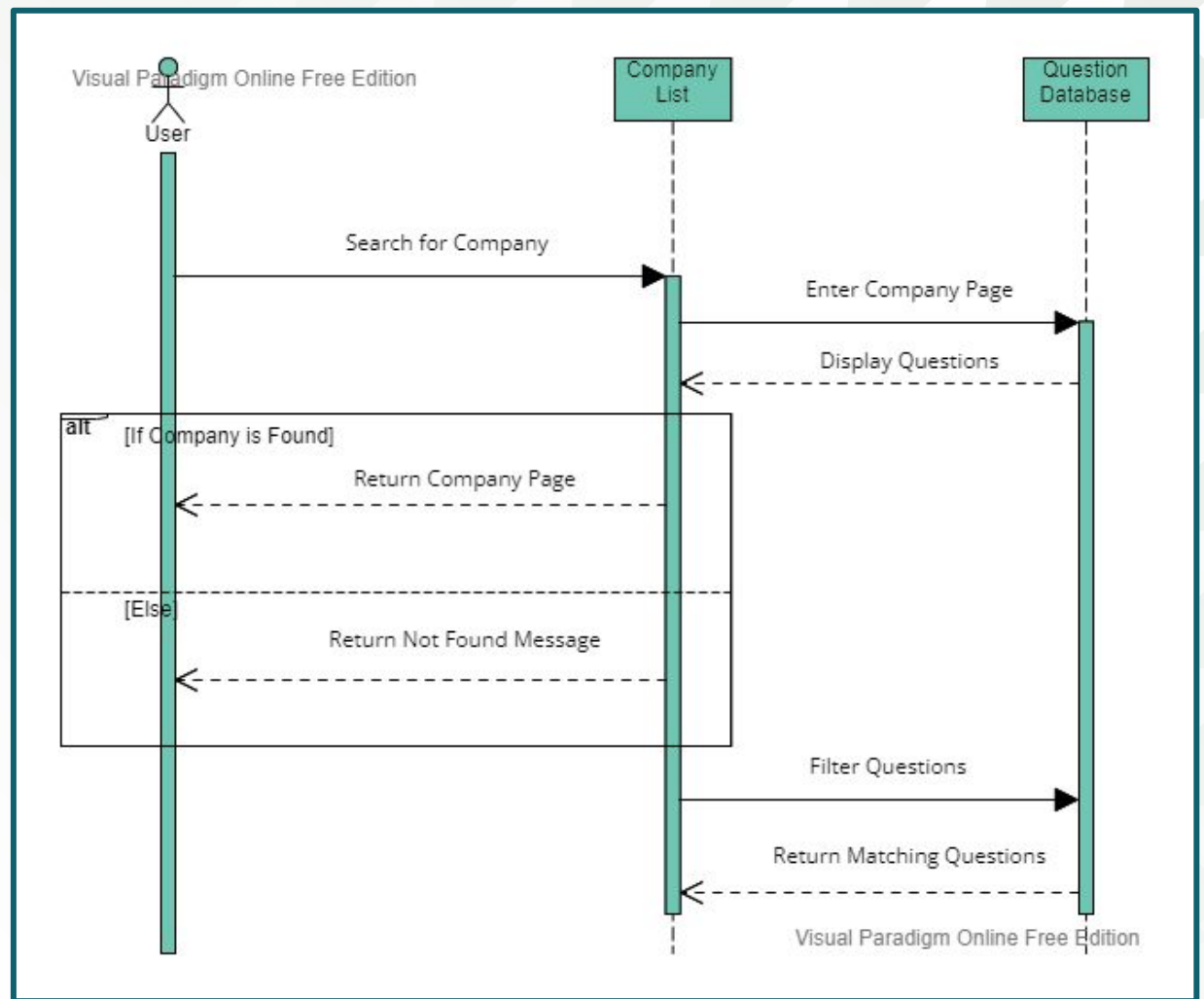


# Use Case Diagram

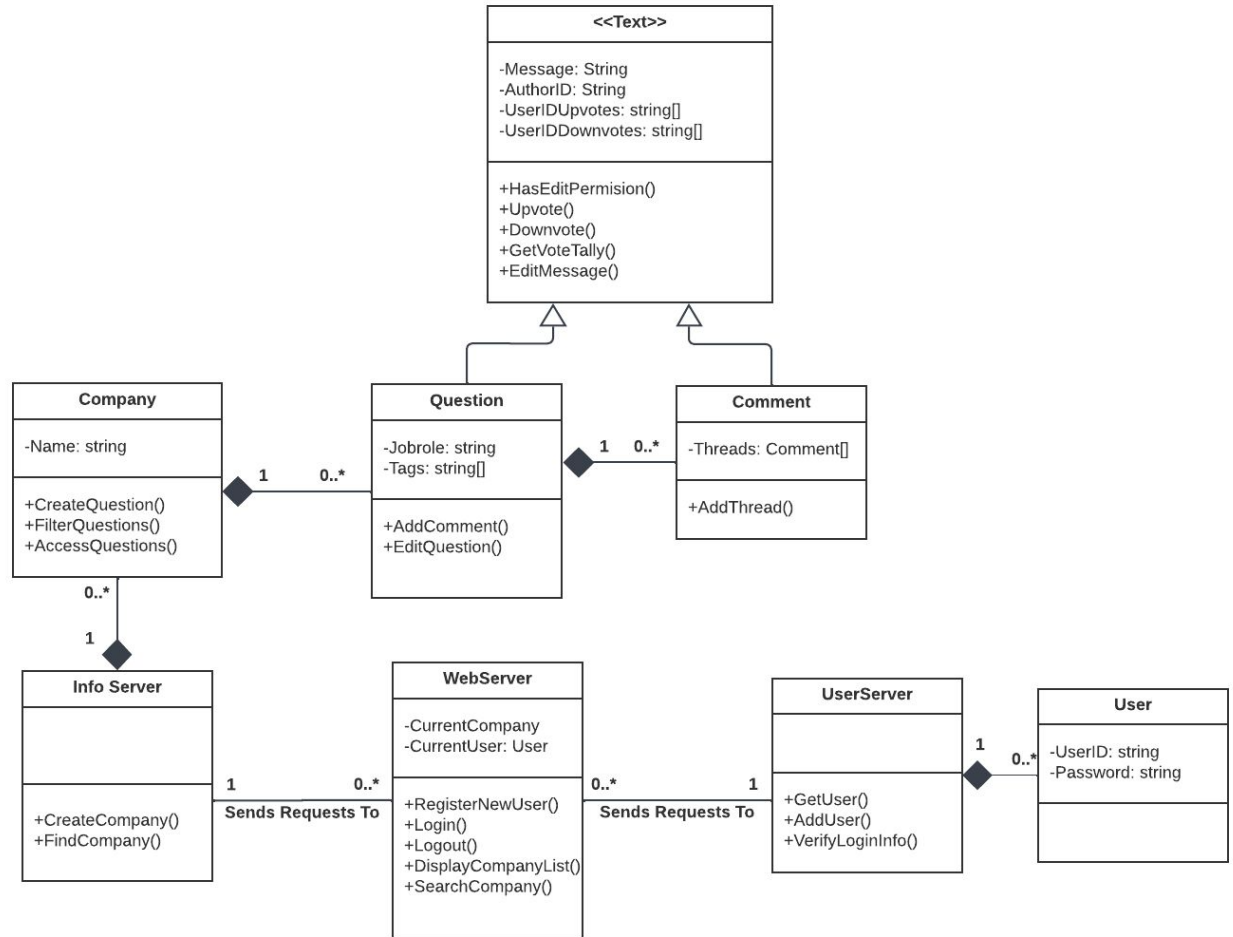


## Sequence Diagram:

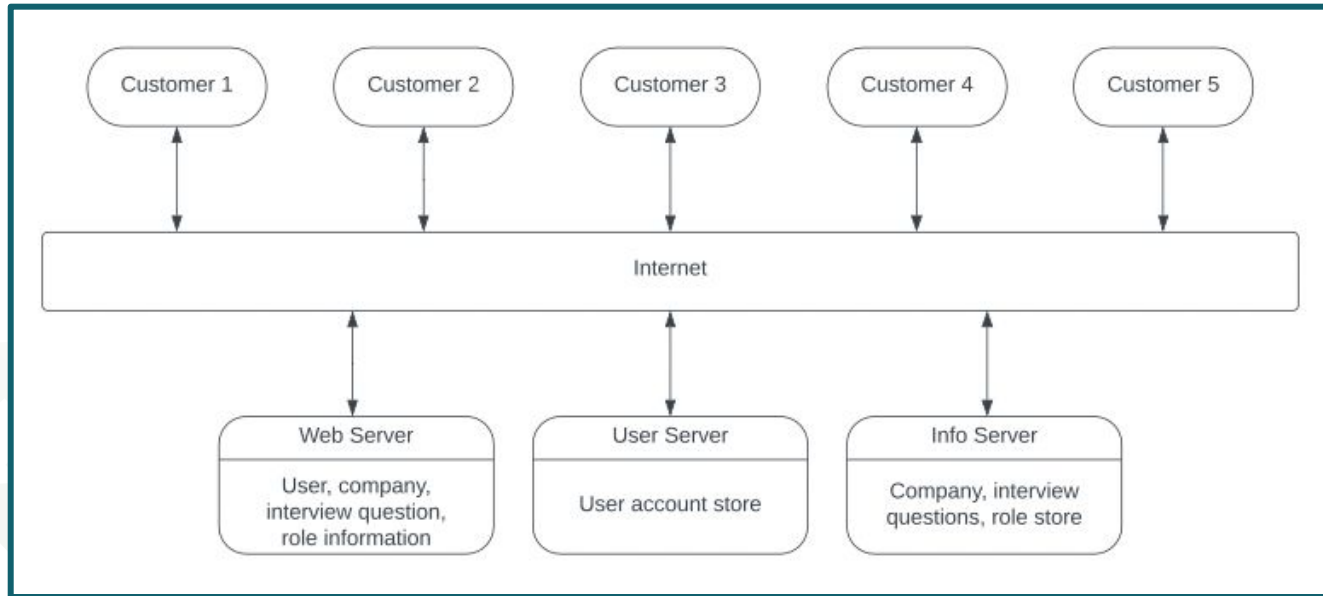
## Company Search



# Class Diagram



# Architectural Design: Client-Server Pattern



# User Interface Design

Gateway

Add IQ

Sign In

Sign Up

Company

Role

Interview Type

Company: Capital One | Role: Associate Software Engineer | Interview Type: Technical

Question: Given an array of integers and an integer target, return indices of the two numbers such that they add up to the target.

UP VOTE

DOWN VOTE

Company: USAA | Role: Software Engineer II | Interview Type: System Design

Question: How is horizontal scaling different from vertical scaling?

UP VOTE

DOWN VOTE

Company: JPMorgan Chase | Role: Analyst | Interview Type: Behavioral

Question: Tell me about a time when you had to work closely with someone whose personality was very different from yours.

UP VOTE

DOWN VOTE

Gateway

Log Out

Company

Role

Interview Type

Question

Submit

# Comparison with Similar Work:

## Glassdoor

What does *Glassdoor* do?

- Job and salary information
- Company reviews
- Interview questions

**Gateway** vs *Glassdoor*:

- Better resource for interview prep
- Less clutter, more info about specific questions
- Easier to use

# Conclusion

- Web-based interview prep service
- Total cost \$3396
- 8 hour work days, 7 team members, 4 day prototype completion time
- Functional requirements include:
  - Search by company
  - Filter questions via type, role, and level
  - Commenting to interview thread if logged in
- Better and easier to use than Glassdoor (interview prep)

# References

- [1] "Frequently Asked Questions," *Amazon Web Services (AWS)*, 2022. [Online]. Available: <https://aws.amazon.com/getting-started/projects/host-static-website/faq/>. [Accessed: 10-Nov-2022].
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- [4] "About Us," *About Us - Glassdoor About Us*, 2022. [Online]. Available: <https://www.glassdoor.com/about-us/>. [Accessed: 10-Nov-2022].