



# **Software Architecture Structure**

## **Final Report (Job Seeking Platform)**

**Group: SE2**

**Team members:**

- Mariam Hazem Sayed
- Miryam Samir Gad
- Youstina Sameh Ycaoub
- Ahmed Mohamed Lotfy
- Mazen Amged Afifi
- Ibraam Magdy Haliem
- Mohamed Gamal Mohamed

# Job Seeking Platform Overview

This document outlines the core functionality of the Job Seeking platform.

## Roles

The platform supports two primary user roles:

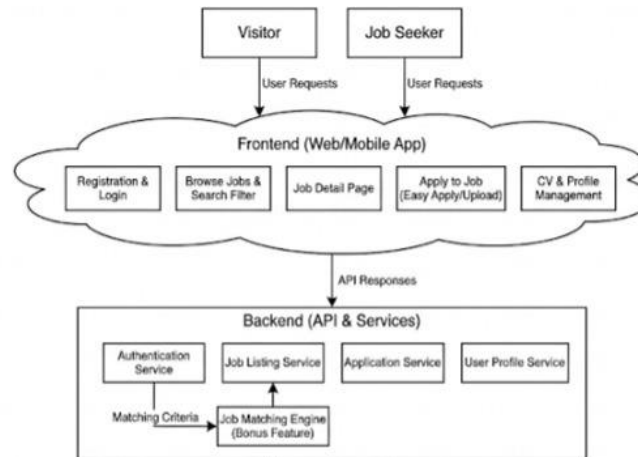
1. **Visitor:** This actor is not logged in. Visitors are able to perform actions like browsing jobs and using the search and filter functionality to explore available listings
2. **Job Seeker:** This actor is logged in. Job Seekers can access all features, including managing their profile and CV, saving jobs, viewing application status, and applying to positions

## Core Features

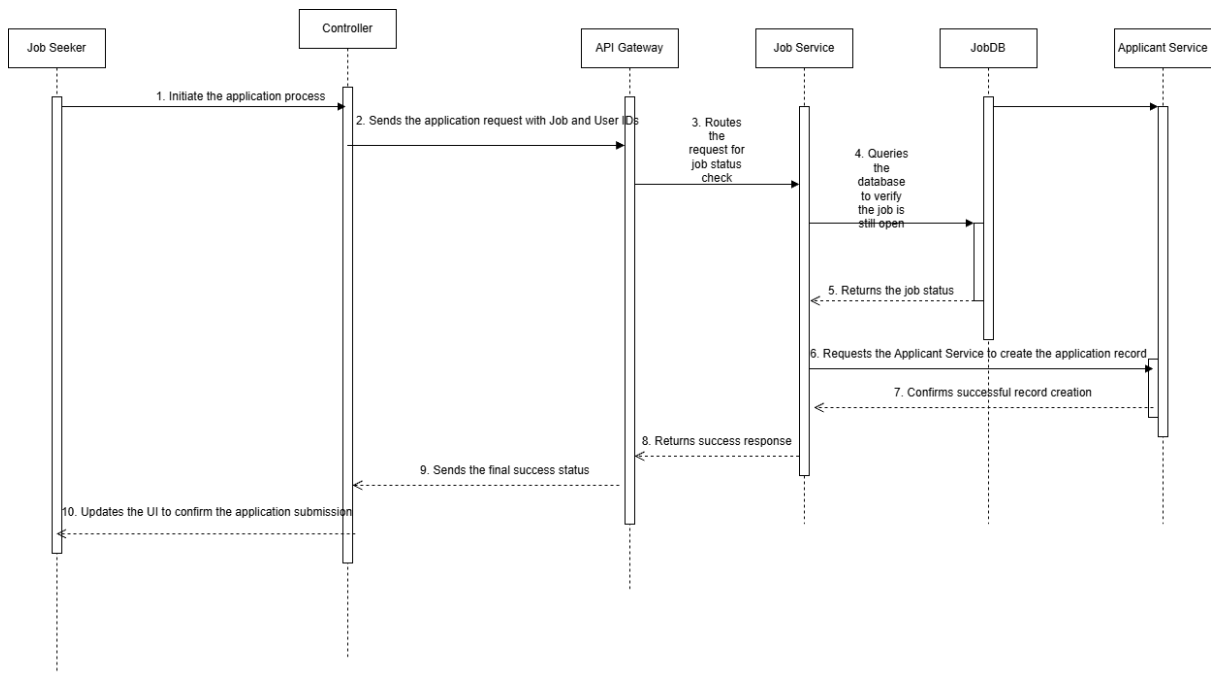
The platform's core functionalities are:

1. **Registration & Login:** Secure process for users to create accounts and access personalized features
2. **Browse Jobs:** Users can easily view job listings, displaying key information such as job title, company logo, location, salary, remote/onsite badge, and posted date
3. **Search & Filter:** Allowing Job Seekers to narrow down listings using criteria like keyword, job type, salary range, experience level, and company
4. **Job Detail Page:** A page for each listing, featuring the full description, requirements, benefits, company overview, and the essential "Easy Apply" button
5. **Apply to Job:** Offers two application methods: Easy Apply using a stored CV, or upload new CV with an optional cover letter, followed by an "Application Sent" confirmation
6. **CV & Profile Management:** Job Seekers can upload, preview, replace, and delete one primary CV (PDF). They can also manage their profile, including name, photo, location, skills (tag input), work experience (simple list), and education. A table showing applied jobs + date applied + status (Applied / Viewed) is also available

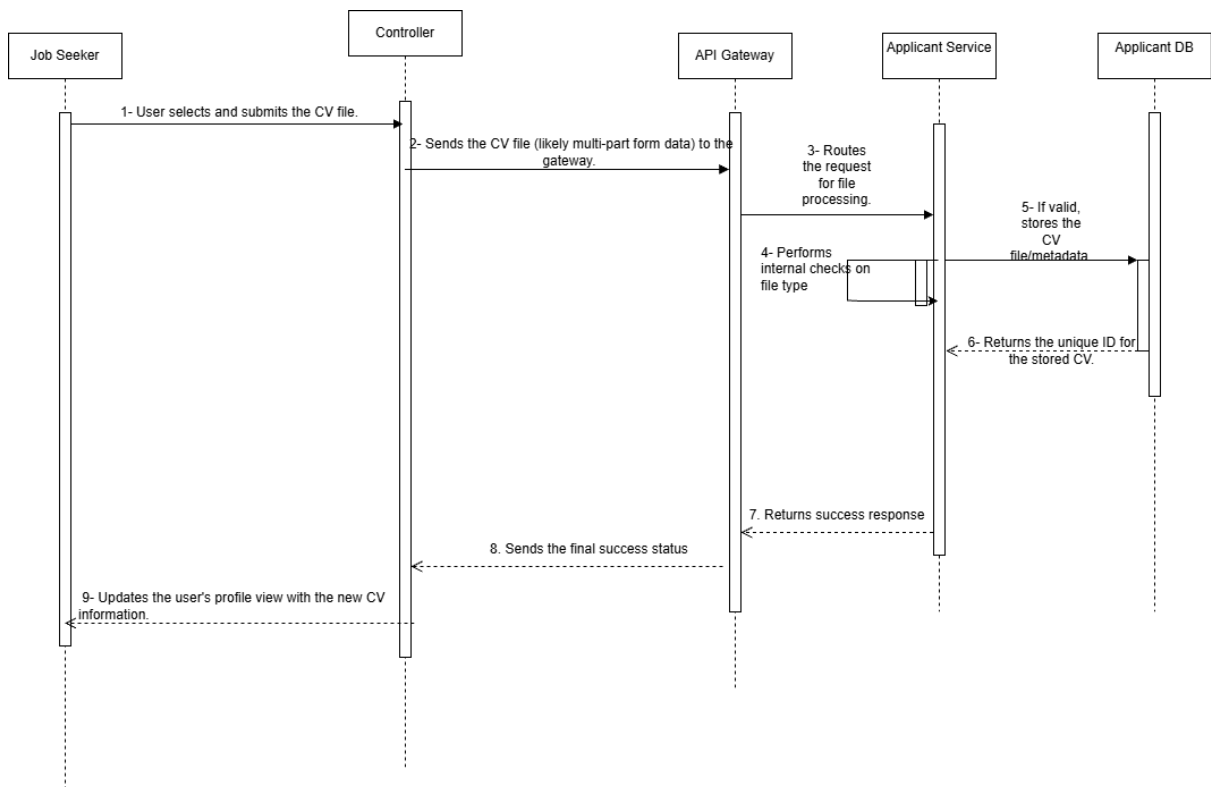
# Architecture Overview Diagram



# Sequence Diagram 1



# Sequence Diagram 2




## Database Schema


| Reviews     |        |    |
|-------------|--------|----|
| review_id   | int    | pk |
| job_id      | int    |    |
| reviewer_id | int    |    |
| rating      | int    |    |
| comment     | string |    |

| Saved_Jobs |     |    |
|------------|-----|----|
| save_id    | int | pk |
| job_id     | int |    |
| seeker_id  | int |    |

| Users         |        |    |
|---------------|--------|----|
| user_id       | int    | pk |
| username      | string |    |
| email         | string |    |
| password_hash | string |    |
| role          | string |    |
| cv_file       | string |    |

| Jobs         |        |    |
|--------------|--------|----|
| job_id       | int    | pk |
| employer_id  | int    |    |
| title        | string |    |
| description  | string |    |
| location     | string |    |
| salary_range | string |    |








## Welcome Back

Sign in to continue to your account


Email Address

 you@example.com

Password

 Enter your password 

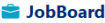
OR

 Sign in with Google



☐ Remember me [Forgot password?](#)

Sign In

Don't have an account? [Register](#)





[Browse Jobs](#) [Saved Jobs](#) [CV Manager](#)

 John Doe 

### Find Your Dream Job

Discover opportunities from companies around the world


 Job title, keywords, or company


 City, state, or remote

Search Jobs

3 Jobs Found


Browse through our latest opportunities

 Filters







Senior Frontend Developer


TechCorp



Looking for an experienced frontend developer to join our team.


Senior Level

 Cairo  Full-time  \$120k - \$160k  1 week ago







Senior Frontend Developer


TechCorp



Looking for an experienced frontend developer to join our team.

Entry Level

 San Francisco, CA  Freelance  \$120k - \$160k  3 days ago



John Doe

Senior Frontend Developer

San Francisco, CA

john.doe@example.com


+1 (555) 123-4567

johndoe.dev

About

Passionate frontend developer with 5+ years of experience building modern web applications. Specialized in React, TypeScript, and creating delightful user experiences.


Experience



Senior Frontend Developer (TechCorp)

2021 - Present

Leading frontend development for enterprise web applications.



Frontend Developer (StartupXYZ)

2019 - 2021

Built responsive web applications using React and TypeScript.

Skills

React

TypeScript

JavaScript

Tailwind CSS

Node.js

Git

REST APIs

Responsive Design

Testing

Agile

Profile Strength

Completeness

100%

✓

 Profile photo added

✓

 Bio completed

JobBoard

🔍 Browse Jobs

🔖 Saved Jobs


📄 CV Manager

John Doe

CV Management


Manage your resumes and CVs for job applications

+ Upload New CV




4

Total CVs





47

Times Downloaded



23

Applications Sent

| CV NAME  | LAST MODIFIED | SIZE   | STATUS | ACTIONS   |
|--|---------------|--------|--------|---|
| <div> Senior Developer Resume <span>★</span></div> <div>Primary</div> | 2 days ago    | 245 KB | Active | <div><div>★</div><div>👁</div><div>📄</div><div>✏</div><div>🗑</div></div> |
| <div> Full Stack Portfolio CV</div>                                   | 1 week ago    | 312 KB | Active | <div><div>☆</div><div>👁</div><div>📄</div><div>✏</div><div>🗑</div></div> |

```
File Edit Selection View Go Run ... Q Search
JobServiceAPI.py X
C:\Uni\Year 3\Semester 1\Software Architecture Structure\Job Seeking Platform\JobServiceAPI.py > ...
1 from fastapi import FastAPI, HTTPException, Query
2 from pydantic import BaseModel
3 from typing import List, Optional
4
5 app = FastAPI(title="Job Service API", description="Microservice for managing job listings with advanced details")
6
7 # --- Data Models (Updated based on Screenshots) ---
8 class Job(BaseModel):
9     # Basic Info
10     id: int
11     title: str
12     company: str
13     company_logo: str # New: URL for the logo
14     location: str
15
16     # Card & Filter Details
17     salary_range: str
18     job_type: str # New: Full-time, Part-time, Contract
19     remote: str # New: Remote, Onsite, Hybrid
20     experience_level: str # New: Junior, Mid-Level, Senior
21     posted_date: str # New: ISO Date string (YYYY-MM-DD)
22
23     # Detailed Page Info
24     description: str
25     requirements: List[str] # New: List of bullet points
26     benefits: List[str] # New: List of bullet points
27     company_overview: str # New: Paragraph about company
28     easy_apply: bool # New: To trigger the "Easy Apply" button
29
30 # --- Mock Database (6 Jobs with full details) ---
31 jobs_db = [
32     {
33         "id": 1,
34         "title": "Backend Engineer",
35         "company": "TechCorp",
36         "location": "New York",
37         "salary_range": "$100k-$150k",
38         "job_type": "Full-time",
39         "remote": "Remote",
40         "experience_level": "Senior",
41         "posted_date": "2023-10-26",
42         "description": "We are looking for a Backend Engineer to join our team. The ideal candidate will have 5+ years of experience in Python, Django, and cloud services. Responsibilities include designing scalable systems, implementing new features, and maintaining existing code. We offer a competitive salary, flexible work hours, and a great benefits package.",
43         "requirements": ["5+ years of Python experience", "Strong knowledge of Django", "Experience with AWS or Azure", "Excellent problem-solving skills"],
44         "benefits": ["Health insurance", "401(k) plan", "Flexible work hours", "Professional development budget"],
45         "company_overview": "TechCorp is a leading technology company focused on innovative software solutions. We are committed to our employees and providing a supportive work environment.",
46         "easy_apply": True
47     },
48     {
49         "id": 2,
50         "title": "Frontend Developer",
51         "company": "WebSolutions",
52         "location": "San Francisco",
53         "salary_range": "$90k-$120k",
54         "job_type": "Full-time",
55         "remote": "Onsite",
56         "experience_level": "Mid-Level",
57         "posted_date": "2023-10-25",
58         "description": "Join our Frontend Development team to create beautiful, user-centric web applications. You will work closely with our design and product teams to bring new ideas to life. We are seeking a developer with a strong eye for detail and a passion for creating exceptional user experiences.",
59         "requirements": ["3+ years of Frontend development", "Proficiency in JavaScript, HTML, and CSS", "Experience with React or Vue.js", "Strong understanding of web standards"],
60         "benefits": ["Health insurance", "401(k) plan", "Flexible work hours", "Professional development budget"],
61         "company_overview": "WebSolutions is a dynamic company specializing in web development and digital marketing. We value our employees and strive to provide a collaborative and innovative work environment.",
62         "easy_apply": False
63     },
64     {
65         "id": 3,
66         "title": "Data Analyst",
67         "company": "DataInsights",
68         "location": "London",
69         "salary_range": "$70k-$90k",
70         "job_type": "Part-time",
71         "remote": "Remote",
72         "experience_level": "Junior",
73         "posted_date": "2023-10-24",
74         "description": "We are seeking a Data Analyst to help us understand our data and provide actionable insights. You will be responsible for collecting, cleaning, and analyzing data, as well as creating visualizations and reports. This is a great opportunity for a junior analyst to gain hands-on experience in a growing company.",
75         "requirements": ["1+ years of Data Analysis experience", "Proficiency in SQL and Excel", "Experience with data visualization tools", "Strong analytical skills"],
76         "benefits": ["Health insurance", "401(k) plan", "Flexible work hours", "Professional development budget"],
77         "company_overview": "DataInsights is a data-driven company focused on helping businesses make informed decisions. We are committed to our employees and providing a supportive work environment.",
78         "easy_apply": True
79     },
80     {
81         "id": 4,
82         "title": "Marketing Specialist",
83         "company": "MarketGrowth",
84         "location": "Austin",
85         "salary_range": "$60k-$80k",
86         "job_type": "Full-time",
87         "remote": "Onsite",
88         "experience_level": "Mid-Level",
89         "posted_date": "2023-10-23",
90         "description": "Join our Marketing team to drive growth and increase brand awareness. You will be responsible for developing and executing marketing campaigns, managing social media, and analyzing campaign performance. We are seeking a creative and results-driven professional.",
91         "requirements": ["3+ years of Marketing experience", "Proficiency in digital marketing", "Experience with social media", "Strong communication skills"],
92         "benefits": ["Health insurance", "401(k) plan", "Flexible work hours", "Professional development budget"],
93         "company_overview": "MarketGrowth is a marketing agency focused on helping businesses achieve their goals. We are committed to our employees and providing a supportive work environment.",
94         "easy_apply": False
95     },
96     {
97         "id": 5,
98         "title": "Software Engineer",
99         "company": "CodeCraft",
100        location: "Berlin",
101        salary_range: "$80k-$100k",
102        job_type: "Full-time",
103        remote: "Remote",
104        experience_level: "Junior",
105        posted_date: "2023-10-22",
106        description: "We are looking for a Software Engineer to join our team. The ideal candidate will have a strong foundation in computer science and programming. Responsibilities include developing new software features, testing, and maintaining existing code. We offer a competitive salary, flexible work hours, and a great benefits package.",
107        requirements": ["2+ years of Software Engineering experience", "Proficiency in Java or C++", "Experience with software development lifecycle", "Strong problem-solving skills"],
108        benefits": ["Health insurance", "401(k) plan", "Flexible work hours", "Professional development budget"],
109        company_overview": "CodeCraft is a software development company focused on creating innovative solutions. We are committed to our employees and providing a supportive work environment.",
110        easy_apply": True
111    },
112    {
113        "id": 6,
114        "title": "Product Manager",
115        company": "ProductLaunch",
116        location": "Tel Aviv",
117        salary_range": "$120k-$150k",
118        job_type": "Full-time",
119        remote": "Onsite",
120        experience_level": "Senior",
121        posted_date": "2023-10-21",
122        description": "Join our Product Management team to lead the development of new products. You will be responsible for defining product vision, gathering requirements, and working closely with engineering and marketing teams. We are seeking a strategic and data-driven professional.",
123        requirements": ["5+ years of Product Management experience", "Strong understanding of market trends", "Experience with product development lifecycle", "Excellent communication skills"],
124        benefits": ["Health insurance", "401(k) plan", "Flexible work hours", "Professional development budget"],
125        company_overview": "ProductLaunch is a product-driven company focused on creating innovative solutions. We are committed to our employees and providing a supportive work environment.",
126        easy_apply": False
127    }
128 ]
129
130 # --- API Endpoints ---
131 @app.get("/")
132 def get_root():
133     return {"message": "Job Service API"}
134
135 @app.get("/jobs", response_model=List[Job])
136 def get_all_jobs():
137     """
138     Get all jobs with advanced filtering capabilities matching the search bar screenshot.
139     """
140     results = jobs_db
141
142     # 1. Keyword Search (Title or Description)
143     if keyword:
144         kw = keyword.lower()
145         results = [
146             j for j in results
147             if kw in j["title"].lower() or kw in j["description"].lower()
148         ]
149
150     # 2. Location Filter
151     if location:
152         loc = location.lower()
153         results = [
154             j for j in results
155             if loc in j["location"].lower() or loc in j["remote"].lower()
156         ]
157
158     # 3. Job Type Filter
159     if job_type:
160         results = [j for j in results if j["job_type"].lower() == job_type.lower()]
161
162     # 4. Experience Level Filter
163     if experience_level:
164         results = [j for j in results if j["experience_level"].lower() == experience_level.lower()]
165
166     return results
167
168 @app.post("/jobs")
169 def create_job(job: Job):
170     """
171     Create a new job listing.
172     """
173     # Check if job already exists
174     existing_job = next((j for j in jobs_db if j["id"] == job.id), None)
175     if existing_job:
176         raise HTTPException(status_code=400, detail="Job already exists")
177
178     # Add new job to database
179     jobs_db.append(job.dict())
180     return job
```

```
File Edit Selection View Go Run ... Q Search
JobServiceAPI.py X
C:\Uni\Year 3\Semester 1\Software Architecture Structure\Job Seeking Platform\JobServiceAPI.py > ...
137
138 @app.get("/jobs", response_model=List[Job])
139 def get_all_jobs():
140     keyword: Optional[str] = Query(None, description="Search title or description"),
141     location: Optional[str] = Query(None, description="City or 'Remote'"),
142     job_type: Optional[str] = Query(None, description="Full-time, Part-time, Contract"),
143     experience_level: Optional[str] = Query(None, description="Junior, Senior, etc."),
144     company: Optional[str] = Query(None, description="Filter by company name")
145 ):
146     """
147     Get all jobs with advanced filtering capabilities matching the search bar screenshot.
148     """
149     results = jobs_db
150
151     # 1. Keyword Search (Title or Description)
152     if keyword:
153         kw = keyword.lower()
154         results = [
155             j for j in results
156             if kw in j["title"].lower() or kw in j["description"].lower()
157         ]
158
159     # 2. Location Filter
160     if location:
161         loc = location.lower()
162         results = [
163             j for j in results
164             if loc in j["location"].lower() or loc in j["remote"].lower()
165         ]
166
167     # 3. Job Type Filter
168     if job_type:
169         results = [j for j in results if j["job_type"].lower() == job_type.lower()]
170
171     # 4. Experience Level Filter
172     if experience_level:
173         results = [j for j in results if j["experience_level"].lower() == experience_level.lower()]
174
175     return results
176
177 @app.post("/jobs")
178 def create_job(job: Job):
179     """
180     Create a new job listing.
181     """
182     # Check if job already exists
183     existing_job = next((j for j in jobs_db if j["id"] == job.id), None)
184     if existing_job:
185         raise HTTPException(status_code=400, detail="Job already exists")
186
187     # Add new job to database
188     jobs_db.append(job.dict())
189     return job
```