

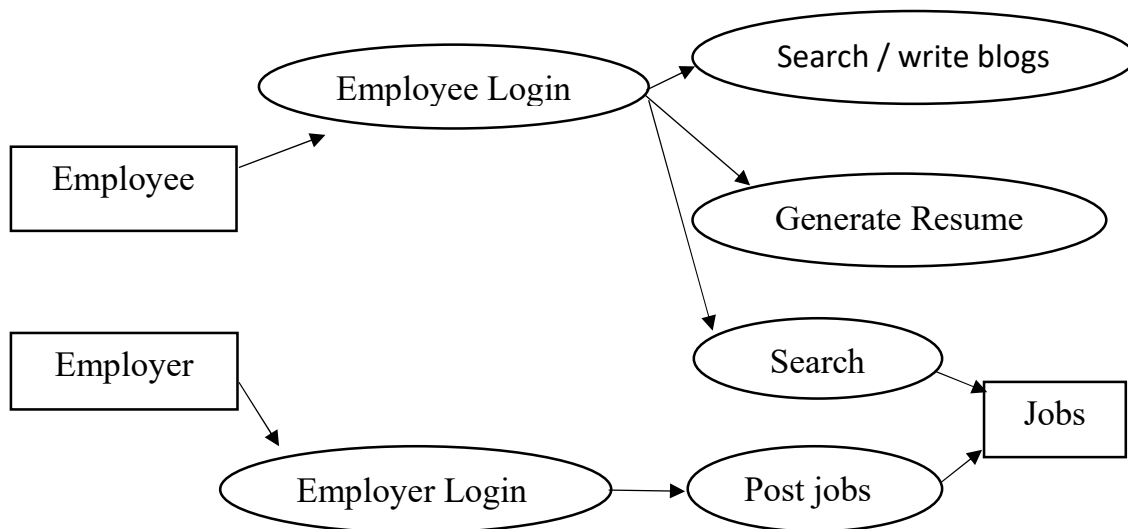
Chapter 3

System modelling

3.1 DFD level 0 & level 1

DFD 0

A data flow diagram (DFD) maps out the flow of information for any process or system. It uses defined symbols like rectangles, circles and arrows, plus short text labels, to show data inputs, outputs, storage points and the routes between each destination. They can be used to analyse an existing system or model a new one. Like all the best diagrams and charts, a DFD can often visually “say” things that would be hard to explain in words, and they work for both technical and nontechnical audiences, from developer to CEO. The DFD level 0 of this project is discussed in this chapter. DFD Level 0 is also called a Context Diagram. It’s a basic overview of the whole system or process being analysed or modelled.

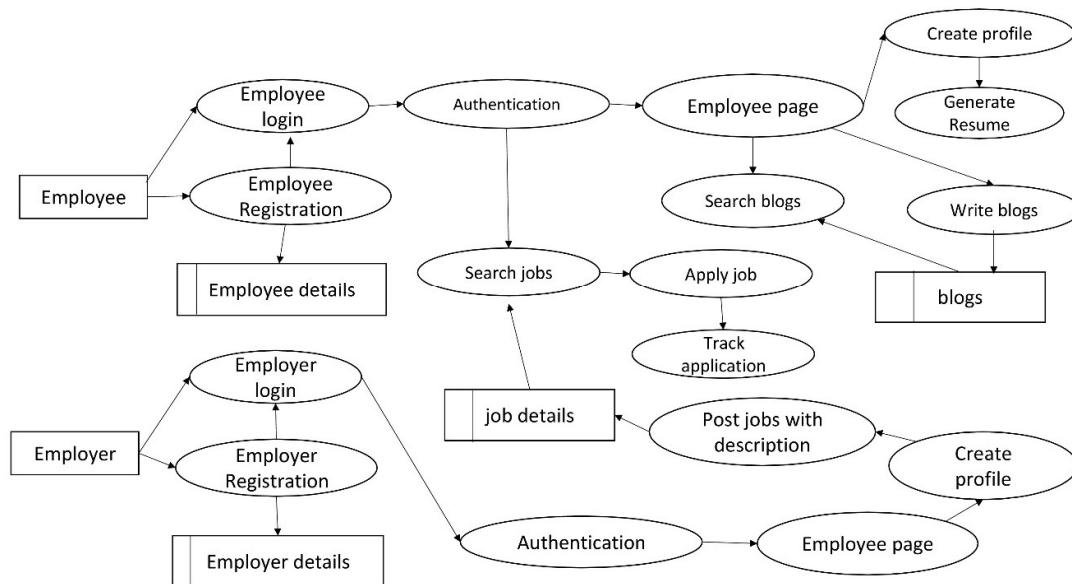


DFD Level 0

In DFD level 0 shows there is two logins. One is employee login and other is employer login. In employee login, the employee can create his profile and generate resume. Then he can search jobs. He can also search or write blogs. In employer login, the employer can post jobs with description.

DFD 1

DFD Level 1 is a general overview, but it goes into more detail than a context diagram or DFD 0. In level 1 DFD, the single process node from the context diagram is broken down into sub-processes. As these processes are added, the diagram will need additional data flows and data stores to link them together.

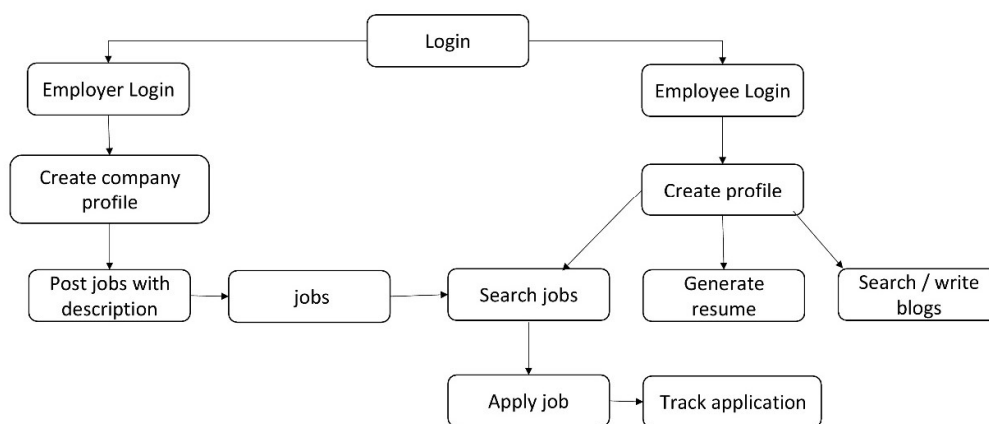


DFD level 1

In DFD level 1 shows the detailed view of employer login and employee login. In employee login, the employee should have an account or he should create an account with strong user name and password. The employee login details are stored in database. Before login, system needs to authenticate the valid user or not. In employee page has menu bar. It contains create profile, search jobs, and blogs. After creating the profile, the employee can generate his resume. The employee details are stored in database. The employee can search and apply the job. The employee can track the status of the applied job. In blogs, the employee can search or write the blog. In employer login, the employer should have an account or he should create an account with strong user name and password. The employer login details are stored in database. Before login, system needs to authenticate the valid user or not. The employer page has create profile and post jobs. The employer should his create profile before posting the job. Before posting the job, employer should provide the job description. The job details are stored in database.

3.2 System architecture

An architectural diagram is a visual representation that maps out the physical implementation for components of a software system. It shows the general structure of the software system and the associations, limitations, and boundaries between each element.



Architecture diagram

The diagram shows there is two logins. One is employee login and other is employer login. In employee login, the employee has to create his profile. After creating the profile, he has to search jobs, Search/write blogs and generate his resume. The employee can search apply the job. The employee can track the status of the applied job. In blogs, the employee can search or write the blog. In employer login, the employer should his create profile. Before posting the job, employer should provide the job description.

3.3 Hardware and Software Specifications

Hardware Specification

The following are the hardware requirement of the system that the design can be implemented upon.

Minimum Specification:

- Hard disk space of 512 Megabytes.
- Intel i3 or Ryzen 3 processor.
- RAM of 2 Gigabytes.

Recommended Specification:

- Hard disk space 1024 Megabytes or more.
- Intel i5 or Ryzen 5 processor.
- RAM of 4 Gigabytes or more.

Software Specification

The following are the software requirement of the system that the design can be implemented upon.

- Operating System Either Windows (or) Linux.
- **Frontend Languages:**

HTML:

The HTML markup language is used to create the structure of the web page.

CSS:

The CSS stylesheets are used to design the web pages

React JS:

The React JS framework is used create components needed in this project.

- **Backend languages:**

Node JS:

In backend, the NODE JS framework is used. Packages like express, axios are used to send request or response and connect the database.

Cloud Database: MongoDB Atlas

MongoDB Atlas is a cloud database used in this project.

3.4 Contribution

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Documentation

Project documentation is the process of recording the key project details and producing the documents that are required to implement it successfully. The project documentation tool should Be easily editable even by non-technical users, ideally, in real time. **Microsoft word** tool is used to edit and create the document. Its' is very comfortable to use.

Application tracking system

Job application tracking system which helps job seekers to know the application status such as whether application is forwarded to a correct employer or not.

Backend

In backend, the NODE JS framework is used. In NODE JS, the middleware functions are used to authentication the login form. Packages like express, axios are used to send request or response and connect the database.

MongoDB Atlas

MongoDB Atlas is a cloud database used in this project. The database is accessed by connection string URL.

Frontend

UI/UX

ReactJS makes it easy to create reusable UI components that can be used across the entire application. This approach saves time and improves consistency in the UI design. ReactJS has a built-in CSS-in-JS solution, but using CSS modules is a better approach for larger applications. React Router is a powerful routing library that makes it easy to navigate between different pages or views within an application. Creating the login system, Employer login page and Employee login page

Blog

Deciding on the design and layout of the blog, including font, colors, and formatting. Creating a component for each section of the blog, such as Header, Footer, BlogPost, Sidebar, etc. Implementing a commenting system that allows users to comment on blog posts.

Resume generator

Deciding on the design and layout of the resume, including font, colors, and formatting. Installing any additional packages that might need, such as react-router-dom, react-bootstrap, or react-icons. Using CSS or a CSS framework, such as Bootstrap, to create the layout and styling of the resume. Create a download button that generates a PDF of the resume based on the user's information.