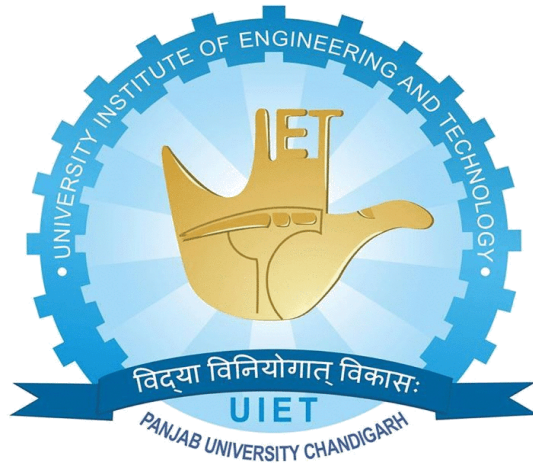


**UNIVERSITY INSTITUTE OF ENGINEERING AND TECHNOLOGY
PANJAB UNIVERSITY, CHANDIGARH**



PROJECT: JOB MATCHERS

BE CSE 7th Semester

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INTRODUCTION

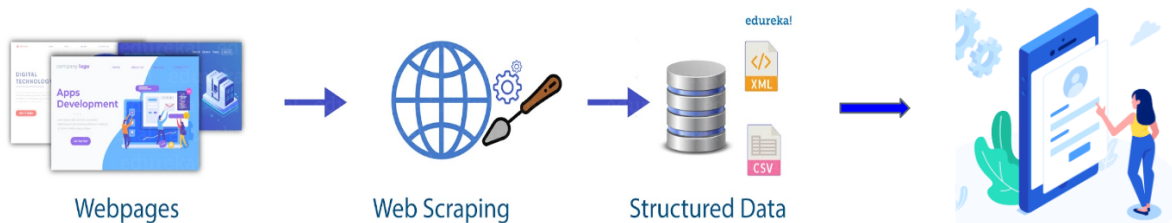
BACKGROUND

A person who is in search of a job has to visit job opening portals everyday. Things like searching through the multiple job portals and various pages of the portal for new jobs, checking the requirements of a particular job, and the range of salary can take you around 20-30 minutes if you do it manually.

With Job Matchers we want to make the task of looking for job openings easier and reliable. So that the person can focus only on those job openings which are relevant to him/her. The person will then be provided with the details of his area of interest for the job.

AIM

- In this project we aim to create a mobile app where a user can look for job openings in a particular field of his/her interest.
- The main aim is to reduce the time that gets wasted in looking on multiple pages of portals for a certain job.
- Users will simply open the app and search for a particular job role.
- Users will also be notified after a particular time if there is a new job opening.
- Another aim of the app is to remind them to apply to a job if the deadline is near.



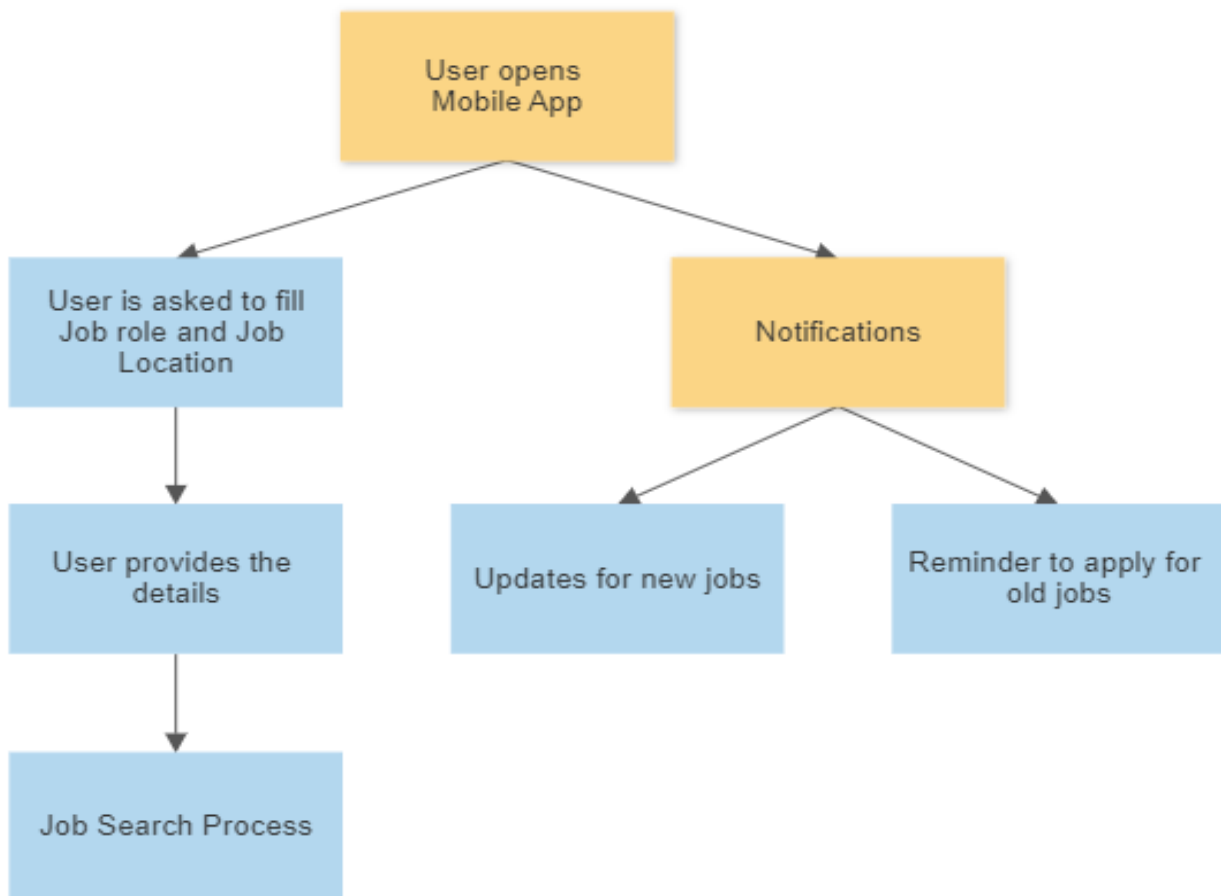
SPECIFICATION AND DESIGN

Technologies Used:

- Python
- Python Libraries: requests, pandas, beautiful soup, cloudscraper
- Android app Development
- JAVA
- XML

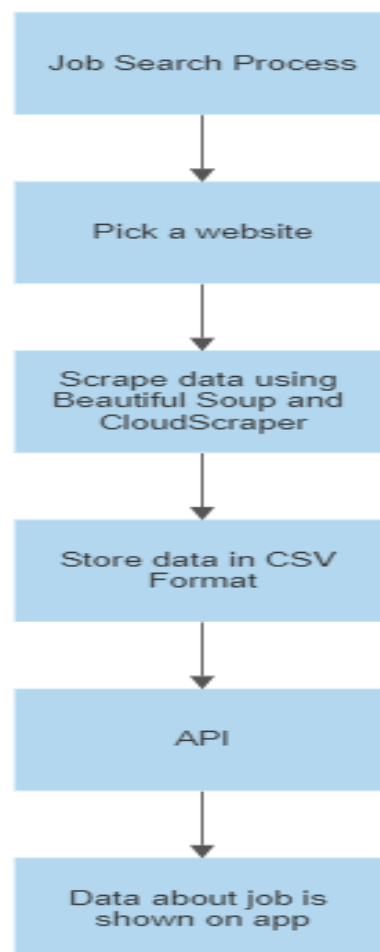
Workflow Diagrams:

Workflow of Job Matchers



- We will be using Java and XML for the android.
- For the user interface we will be using ListView and ArrayAdapter.
- Each job will contain the attributes like job title, company name , job description and url .
- By clicking each job, the new intent will be created and the job page will be open.
- Two fields will be provided for input for location and the position, so according to that particular location and position the jobs will be displayed to the user .
- At the backend the call to API will be made after regular time intervals so new jobs added to the data source will also be displayed in the app.
- The features like sending the notifications of the new job openings and also notifications regarding the deadline of the particular job will also be there.

Workflow of Job Search Process



We have used a beautiful soup library of python to scrape data. Also, indeed.com doesn't allow us to scrape data from its site so we have used cloudscraper which is used to scrape or crawl a website protected with Cloudflare.

- Firstly we import necessary libraries like requests, pandas, beautiful soup, cloudscraper.
- We create a method that takes position and location as input and returns the link to a site whose data needs to be scrapped.
- The above link has a long list of results in the form of pagination. So we store the links of pages in a list.
- Now we go to each link and try to extract information like company_name, location, position, description and link to apply for that job.
- Using the inspect option in the web browser, we find the tags and classes of above attributes and using beautiful soup we extract these data in a list.
- Then we create a dictionary of the above list and then convert it into a dataframe and then export this dataframe to csv format.

[Link To Code](#)

PROGRESS TILL DATE ALONG WITH RESULTS

- ❖ First thing that we require for our app is data which tells us about current job postings. We used the techniques of web scraping to extract data from job posting sites.

Web Scraping is an automatic method to obtain large amounts of data from websites. Most of this data is unstructured data in an HTML format which is then converted into structured data in a spreadsheet or a database so that it can be used in various applications. There are many different ways to perform web scraping to obtain data from websites. These include using online services, particular API's or even creating your code for web scraping from scratch.

- We wrote code to scrape data and here is the [link](#) to the code.
 - For scraping, we have used an inbuilt library named beautiful soup.
 - As indeed.com was not allowing users to scrape data from its site, so we have used cloud scraper which is used to scrape or crawl a website protected with Cloudflare
- We have started learning Android from scratch which includes technologies like XML, Java and we have also learned about API's .
- ❖ **Extensible Markup Language (XML)** is a markup language and file format for storing, transmitting, and reconstructing arbitrary data. It defines a set of rules for encoding documents in a format that is both human-readable and machine-readable.
- ❖ **Java**, the popular programming language, is used to develop Android applications. The good approach towards software development is the object oriented approach. Java is based on the oops concept. Android relies heavily on Java fundamentals like classes and objects and its other useful features of oops. Java has an extensive set of libraries. It is easy to take advantage of these libraries. Android SDK has many standard Java libraries included. These provide functionalities for data structure, math functions, graphics implantation, and networking functions and much more. These java libraries

help us to do everything else we could want. This way java helps develop Android applications fast and inefficient manner

FUTURE WORK PLAN

- We will continue to work on this project. Our next step is to start developing the app. As per Gantt Chart timeline we will start testing the app side by side.
- After creating the front end of the app we will add features such as notification of new job updates.
- Job Matchers future scope is to provide every user the best matching jobs related to them.
- This project can be further enhanced to create a profile of the user. The data related to his education will be gathered through his profile. Then the users will be suggested jobs based on their profiles.
- Another aim is to help users save job openings to check them later.