

# The Great Filter

The Ultimate Tech Talent  
Recruitment Tool



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# 1. Project Overview

## Introduction

The Great Filter is an innovative mobile app dedicated to optimizing the recruitment process. The app is designed to efficiently connect opportunities with the most fitting candidates, by implementing advanced filtering mechanisms and profile improvement suggestions, reducing “noise” and speeding up the recruitment process for both Job Seekers and Recruiters.

<u>Project Category</u>	<u>Technologies</u>	<u>Hardware</u>	<u>Business Sector</u>
Mobile Application Development	Kotlin Android Studio Firebase GITHUB	PC Android Emulator	Employment and Recruiting.

## User Categories

Users will be categorized into two distinct user groups:

- Job Seeker
- Candidate Seeker

Each group will benefit from a tailored experience to enhance their respective journeys.

**Job Seekers** will be greeted with an exclusively curated list of relevant job positions based on their position preferences. This personalized approach ensures that displayed job opportunities align with their skills and requirements, making the job search more efficient and rewarding.

**Candidate Seekers** will have a focused view of potential candidates whose profiles align seamlessly with their specific job requirements. This targeted approach streamlines the hiring process, saving time and resources.

## **2. Enhanced 'Out of Filter' User Metrics**

To further improve user experience, the app will introduce insightful metrics, summarizing:

- Salary Range Expansion:
- Years Experience Reduction
- Minimum Education Level
- Work in Office Days
- Location Radius
- Weekends Available
- Monday to Friday
- Interview Rounds

## **3. Application Road Map**

The development plan involves releasing the app in 3 iterations, each with gradual enhancements:

- Milestone 1: Basic Filtering and Matching for Job Seekers and Job Opportunities, laying the foundation for a streamlined recruitment experience.
- Milestone 2: Advanced filtering capabilities for both Job Seekers and Candidate Seekers, along with the introduction of 'Out of Filter' metrics to provide users with valuable insights on potential loss of opportunity.
- Milestone 3: Empower Candidate Seekers with the ability to create and manage multiple job opportunities through an Admin Profile, offering enhanced flexibility and control over the recruitment process.

This evolutionary approach ensures a progressive growth of the app functionality, with each release delivering a more refined and effective solution to meet the dynamic needs of the recruitment landscape.

## 4. Research Analysis Modelling and Planning (RAMP)

### 1. Requirements Analysis

#### Technology

- Development Environment

Android Studio. (Google, 2024)

- Database and Authentication

Firebase. (Google, 2024)

- Version Control

GitHub. (GitHub, 2024)

#### Reference Documentation

- Android Studio Official Documentation. (Android, 2024)
- Kotlin Official Documentation. (Kotlin, 2024)
- Jetpack Compose. (Material.io, 2024)

#### Tutorials

- WIT-HDIP-comp-sci-2022-mobile-app-dev/topic-08. (Drohan, 2023)
- WIT-HDIP-comp-sci-2022-mobile-app-dev/topic-12. (Drohan, 2023)
- Tinder Clone in Android Studio with Firebase. (Bunch, 2021)
- Udemy: Build a Tinder Clone in Android Jetpack Compose and Firebase. (Stephan, 2023)

## 2. Feature analysis

<u>Recruiter</u>	<u>Job Seeker</u>
<u>Login Page</u> Allow users to login to the app by inputting username and password credentials via Firebase Authentication	<u>Login Page</u> Allow users to login to the app by inputting username and password credentials via Firebase Authentication
<u>Signup Page</u> Allow users to sign up to the app with Username and Password via Firebase Authentication	<u>Signup Page</u> Allow users to sign up to the app with Username and Password via Firebase Authentication
<u>Profile &amp; Preferences Build Page</u> Build a Job Position profile to refine the candidates filter that match desired position requirements.	<u>Profile &amp; Preferences Build Page</u> Build a Candidate profile to refine minimum characteristics that would suit desired position requirements.
<u>Candidate Matching Page</u> Matching Screen showing a list of potential matching profiles of suitable position candidates.	<u>Position Matching Page</u> Matching Screen showing a list of potential matching profiles of jobs that suit minimum criteria.
<u>Messaging</u> Messaging page to chat with matching candidates.	<u>Messaging</u> Messaging page to chat with matching position recruiters.
<u>Analytics</u> 'Out of Filter' metrics that will summarize potential candidates if certain metrics were expanded.	<u>Analytics</u> 'Out of Filter' metrics that will summarize potential jobs if certain metrics were expanded.

### 3. Market analysis

Based on Market research many experts are still in consensus that it is very much a job seekers market.

- (Martyn, 2023)
- (McDowell, 2023)
- (Morel, 2021)

This is leading to many job postings going unfilled. Despite this, companies are either unwilling to or unfamiliar with posting positions that are attractive to applicants, 50% - 60% of job listings do not post salaries. (Palmer, 2023)

Despite an Aerotek survey showing that almost all job seekers find salary an important motivator, and if a Job posting does not display a salary, then potential candidates are quite likely to skip it.

*“Aerotek’s survey does show that more than 86% of respondents said that pay was an important motivator in their job search”.* (Becker, 2023)

Top 10 things job seekers are looking for	15 qualities employers look for in candidates
<ol style="list-style-type: none"><li>1. Better Pay</li><li>2. Growth Opportunities</li><li>3. Work-from-Home Option</li><li>4. Work-Life Balance</li><li>5. Health Insurance</li><li>6. Company Culture</li><li>7. Flexible Hours</li><li>8. Job Security</li><li>9. Professional Development</li><li>10. Retirement Benefits</li></ol> <p>(Co-pilot, 2024)</p>	<ol style="list-style-type: none"><li>1. Ambition.</li><li>2. Communication.</li><li>3. Confidence.</li><li>4. Critical thinking.</li><li>5. Dependability.</li><li>6. Determination.</li><li>7. Eagerness to learn.</li><li>8. Flexibility.</li><li>9. Honesty.</li><li>10. Loyalty.</li><li>11. Positivity.</li><li>12. Problem-solving.</li><li>13. Self-reliance.</li><li>14. Teamwork.</li><li>15. Work ethic.</li></ol> <p>(Herrity, 2023)</p>

## **5 Things Candidates Want From the Hiring Process in 2024** (AccruePartners, 2023)

### **1. Short Job Applications**

According to a recent survey from greenhouse.com, 70% of Job seekers won't submit a job application if it takes more than 15 minutes to complete. Jobseekers are expecting radio silence from a job application, so they are discouraged from putting in too much time and effort (Alobeid, 2022)

### **2. Accurate View of Job Position**

Almost half of employees will leave their newly acquired position if the company or position does not align with the job posting/ promises from the recruitment process. This can include hours of work, benefits or Job role. (Alobeid, 2022)

### **3. Clear Timelines & Expectations**

According to peoplemanagement.co.uk, 78% of job seekers said they'd consider dropping out or would drop out of a complex or long hiring process. Job Seekers would like a clear indication of how long the hiring process should take and how many interviews are required to secure the position. (Bolden-Barrett, 2019)

### **4. Visibility Into Progress**

Candidates would like to view or be informed as to what stage they are at in the recruitment process, being left waiting between interviews can lead candidates to lose interest in the position they applied for, leading them to look elsewhere and over 70% of candidates expressed they would like interview feedback (Brown, 2022)

### **5. Flexible Communications**

Candidates need to be able to contact or be contacted on their terms and what's convenient to them, easy flexible communication is key to keeping a candidate engaged throughout the hiring process. (Boskamp, 2023)



## 4. Competitor Analysis

Search Categories	Preferences	Indeed	Glassdoor	LinkedIn
Job title	Software Engineer	Displays a Mix of Software Engineer Positions and Other non-related positions	Did not display any positions relative to profile preferences.	Displays Positions Relative to Preferences
Minimum Salary Filter	€500000	Displays a Mix of Salaries above and below Minimum Salary	Not Available	Displays positions that do not have a salary range
Experience Level	3 Years	Inconsistent Experience Level / Years of experience	Inconsistent Experience Level / Years of experience	Inconsistent Experience Level / Years of experience
First Page Potential Match Positions	80%	20%	0%	40%

### Indeed

My Profile shows a Software Developer position, but it also shows Early Years job positions and all the suggestions shown are less than the Minimum €50,000 base salary set out in my Job preferences.

*See appendix Indeed*

### Glassdoor

My Glassdoor profile displays no job positions even remotely close to my job preferences and does not give the ability to filter out any job suggestions.

Glassdoor, although good for reviews, seems to be more of a data harvesting Web App rather than a dedicated job search application.

*See appendix Glassdoor*

### LinkedIn

LinkedIn displayed positions best based on profile preferences and skills. However, it displays positions that do not have a salary range with no way to filter that out. It also displays contradictory experience levels.

*See appendix LinkedIn*

## 5. Repo analysis

### Repo 1

This Repo is based on a Tinder Clone.

<https://github.com/LukeKotlin/tinder-clone-kotlin> (Kotlin, 2020)

UI models can be used as a basis for the App functionality and modify the data models to represent the suitable candidates.

Forking this repo may not be a wise choice as it is over 4 years old and dependencies and compatibility may be an issue.

Running this project alongside development may be helpful in giving insights.

### Repo 2

This Repo is also based on a Tinder Clone.

<https://github.com/CatalinStefan/tinder-clone-compose> (CatalinStefan, 2023)

This is a repo based on the tutorial I followed which I used to follow and code as I went watching the tutorial as it contained the base functionality, I needed to build my app.

I ran these side by side and used the structure to trouble shoot. And copied in some code just a trouble shooting measure to ensure no typos and only when my code didn't work. I would say 90% of my code was typed and modified by myself and code used from repo was the swipe card Swipe functionality.

## 6. Modelling

### Personas

The Great Filter App initially will only have 2 types of users Job Seekers and Candidate Seekers (Recruiters)

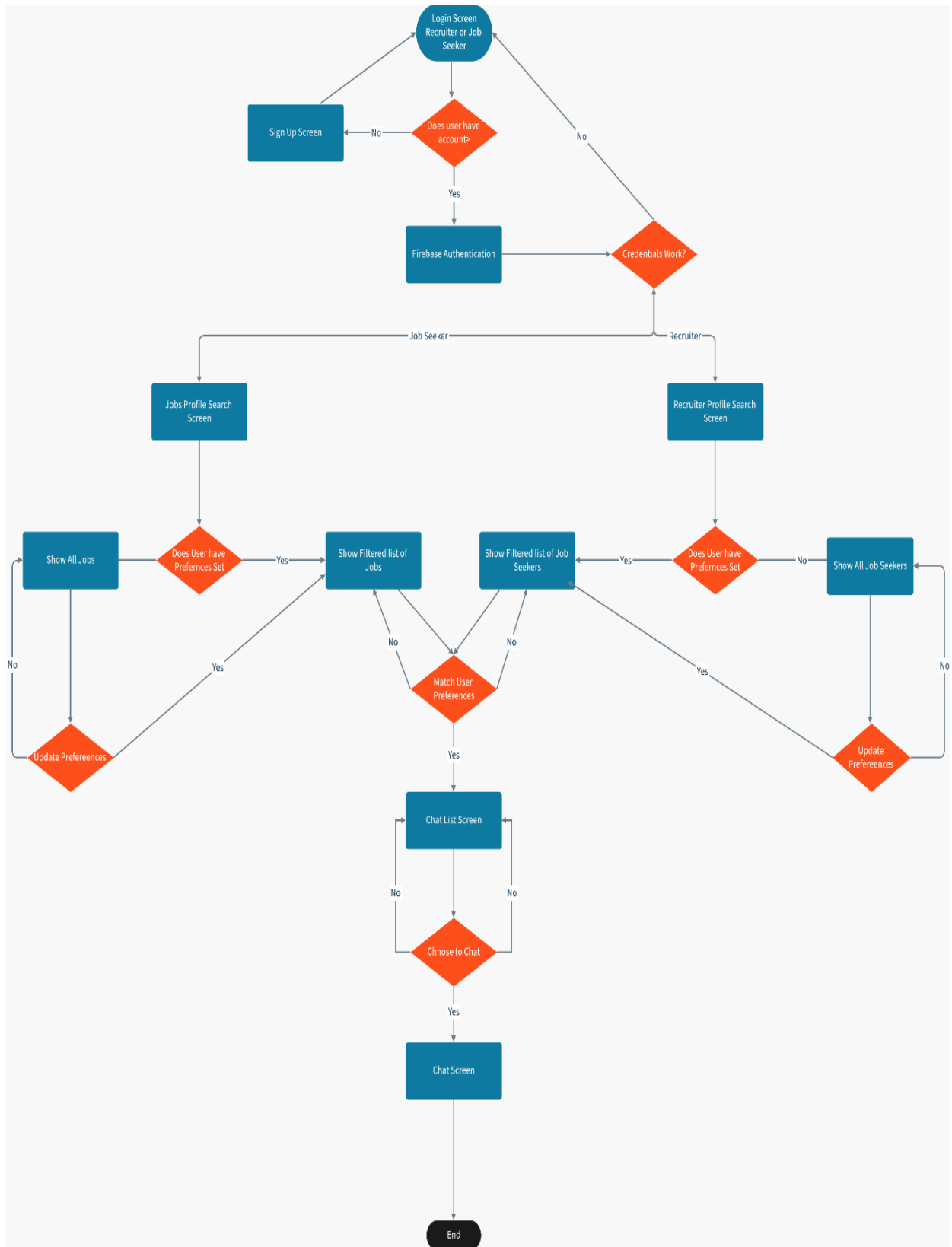
<u>Job Seeker</u>		
<u>Persona Details</u>	<u>Traditional Recruitment Tools</u>	<u>Proposed Solutions</u>
<u>Paul is a frontend software engineer.</u>  Has 1 years' experience in web development  A minimum salary expectation of €32,000  Is looking for at least 2 days working from home or a position with 25kms of his house	<u>Paul would be presented with:</u>  Entry level jobs that will not display a salary.  Do not have an exact location.  Will have to look for 'Hybrid' jobs not knowing how many days a week this means.	<u>Show positions that:</u>  Have a minimum salary of €32,000.  Require less than 2 years' experience.  Only require Job Seeker to be in office max 3 days per week  Show Exact Location
<u>Steve is a Full stack software engineer.</u>  Has 9 years' experience in Front and back-end software engineering  A minimum salary expectation of €82,000  Is looking for a fully remote position or a position within 5kms of his house.	<u>Steve will be presented with a list of jobs that:</u>  Are below his experience level.  Do not meet his salary requirement.  Show jobs that are Hybrid or In Office  Will not show exact location	<u>Show positions that:</u>  Have a minimum salary of €82,000.  Are remote positions or with 5kms.  Positions that fit level of experience.

<b><u>Candidate Seeker</u></b>		
<b><u>Persona Details</u></b>	<b><u>Traditional Recruitment Tools</u></b>	<b><u>Proposed Solutions</u></b>
<u>Requirements:</u> Level 8 Degree minimum 3 years' experience. HTML, CSS, JavaScript, Angular/React/VUE, GIT Salary range €40,000 Must be in office 3 days per week.	<u>Recruiter will be presented with a list of candidates that:</u> Do not have a level 8 Degree. Do not have experience required. Low interest due to salary range.	<u>Show candidates that:</u> Have at minimum level 8. Have at least 3 years' experience. Are willing to work at salary range or display metrics on how many candidates they would match with if minimum salary was raised
<u>Requirements:</u> minimum 4 years' experience. JAVA, AWS Salary range €60,000 Must be in office 2 days per week. Weekends may be required. 3 round interviews	<u>Recruiter will be presented with a list of candidates that:</u> Do not have experience required. Do not have the minimum languages required. Are not willing to do 3 interviews and will lose candidates	<u>Show candidates that:</u> Have at least 4 years' experience. Have all languages required. Are willing/expecting to do 3 rounds of interviews. Are willing to work weekends. Are willing to be in the office 2 days a week.

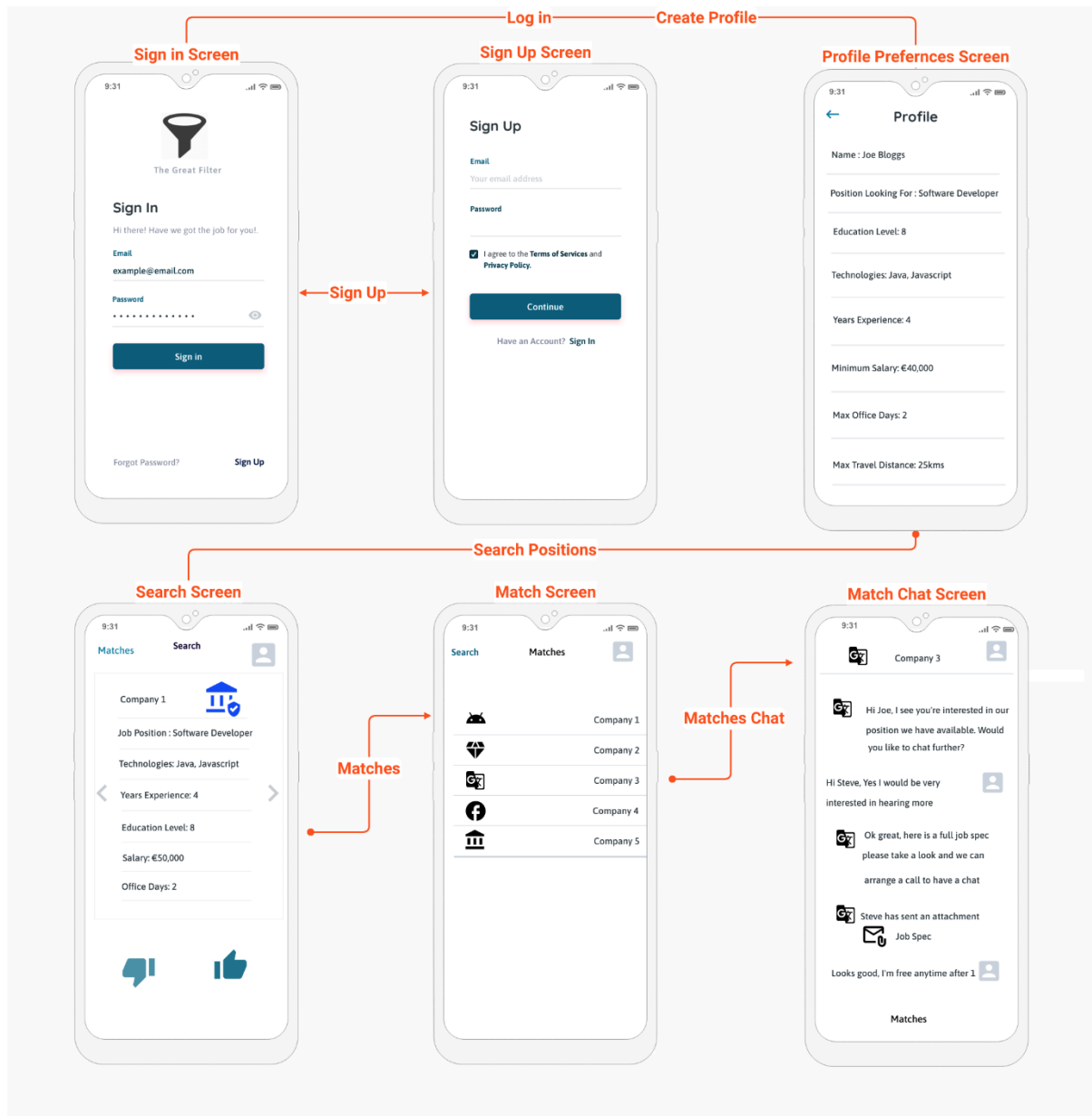
## 7. Data model

Candidate	Recruiter
<pre>{   ID,   PositionTittle,   YearsExperience,   MinEducationLevel,   MinSalary,   WorkInOfficeDays,   Location,   ProgrammingLanguages,   SpeakingLanguages,   WeekendsAvailable,   MondayToFriday,   InterviewRounds,   PersonalDescription }</pre>	<pre>{   ID,   PositionTittle,   YearsExperience,   MinEducationLevel,   MinSalary,   MaxSalary,   WorkInOfficeDays,   Location,   ProgrammingLanguages,   SpeakingLanguages,   WeekendsAvailable,   MondayToFriday,   InterviewRounds,   JobDescription }</pre>

## 8. System model



## 9. MVP Wireframe



# 10. Planning

## The Great Filter MVP 6 \* 2-week sprint plan

### Sprint 1: Jan 15 - Jan 28

- Sign in Screen.
- Sign up Screen.
- Firebase authentication.
- Placeholder Screens

### Sprint 2: Jan 29 – Feb 11

- Profile Preferences Screen.
- Search Screen.

### Sprint 3: Feb 12 – Feb 25

- Search Logic.

### Sprint 4: Feb 26 – March 10

- Match Screen.
- Match Chat Screen.

### Sprint 5: March 11 – March 24

- Analytics.
- Multi Job position list for Candidate Seekers (Nice to have).

### Sprint 6: March 24 – April 7

- Debugging if necessary.
- Complete Documentation.
- Create Demo Video.

I also used a project planning tool called Any.do although I didn't use it religiously as I found it easier to work on my own pace and did not need to collaborate.

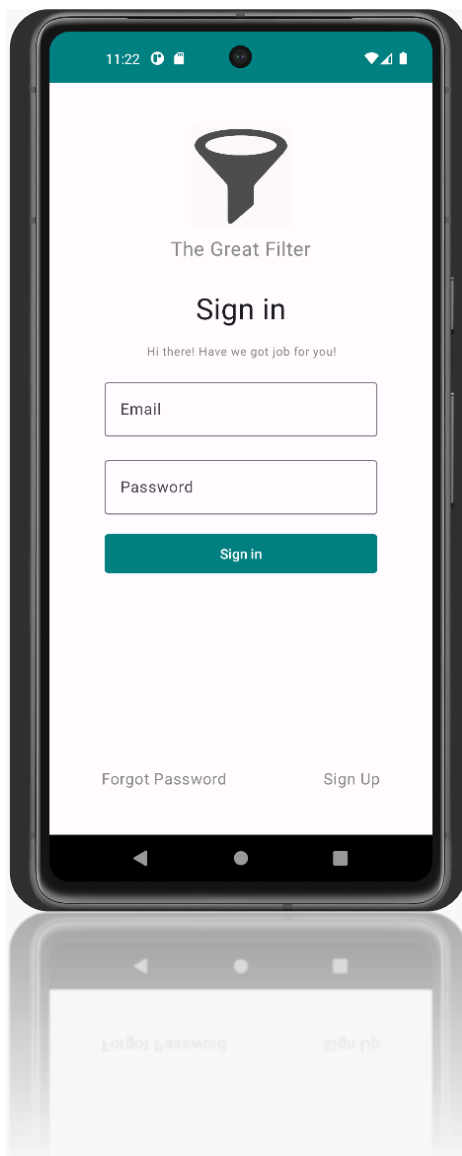
<https://beta.anydo.dev/boards/6d94e3b7-19a0-4755-aca6-b59a8cd23da7>



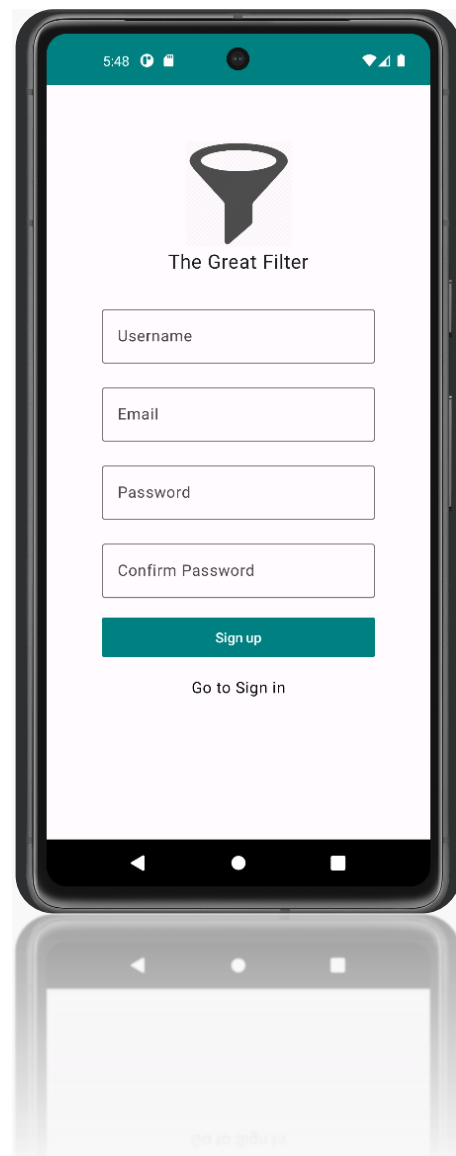
# 11. The Great Filter Progress Report

## Sprint 1 Progress

Sign in Screen



Sign up Screen



### Sign In Screen

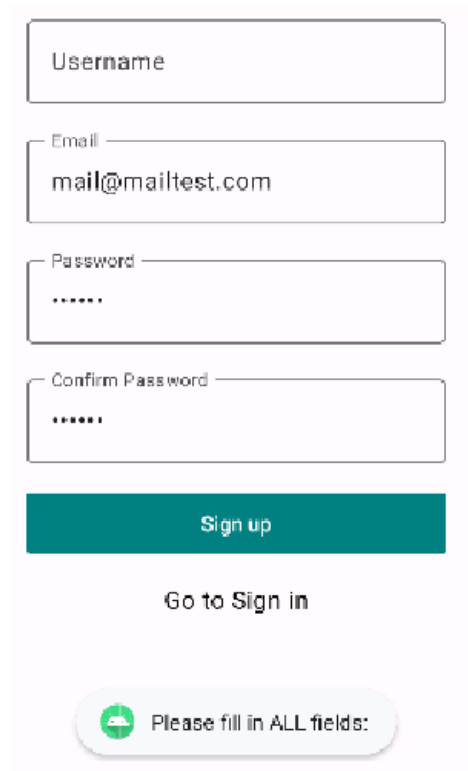
I have created a standard Sign in screen the allows users to sign in with email and password.

An error popup will come up if password is entered incorrectly:



### Sign Up Screen

I have created a standard Sign-up screen that require username, Email Password and confirm password. All Fields are mandatory, and I have included a popup notification to inform user.



The image shows a sign-up form with four input fields: Username, Email (containing 'mail@mailtest.com'), Password (masked with dots), and Confirm Password (masked with dots). Below the fields is a teal 'Sign up' button and a link 'Go to Sign in'. At the bottom, a light blue rounded rectangle contains a green bell icon and the text 'Please fill in ALL fields:'.

- Placeholder Screens

I have created placeholder screens below to allow for navigation testing that allowed me to navigate through the below pages.

- Search Screen
- Profile Screen
- Match List Screen
- Messaging Screen

- Navigation

My Navigation bar allowed to navigate between my Search Page, Chat List page and profile page.

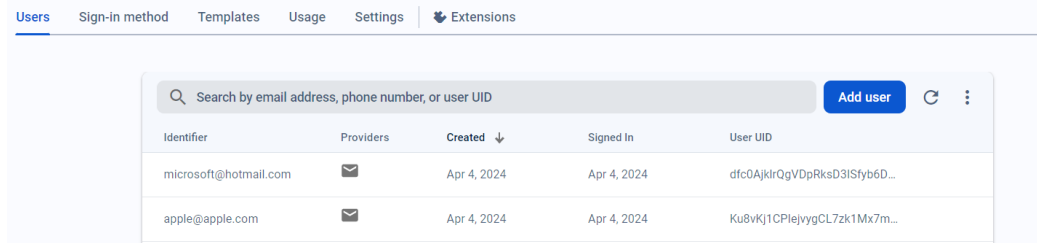


## Sprint 2 Progress

### - Firestore authentication.

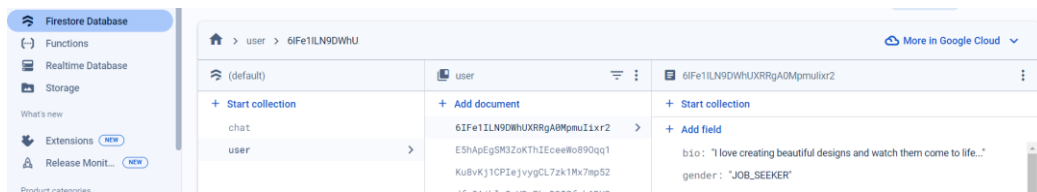
I implemented Google's Firebase Authentication to store and verify credentials.

#### Authentication



### - Firestore Database

I implemented Google's Cloud Firestore to store the applications user and chat data.



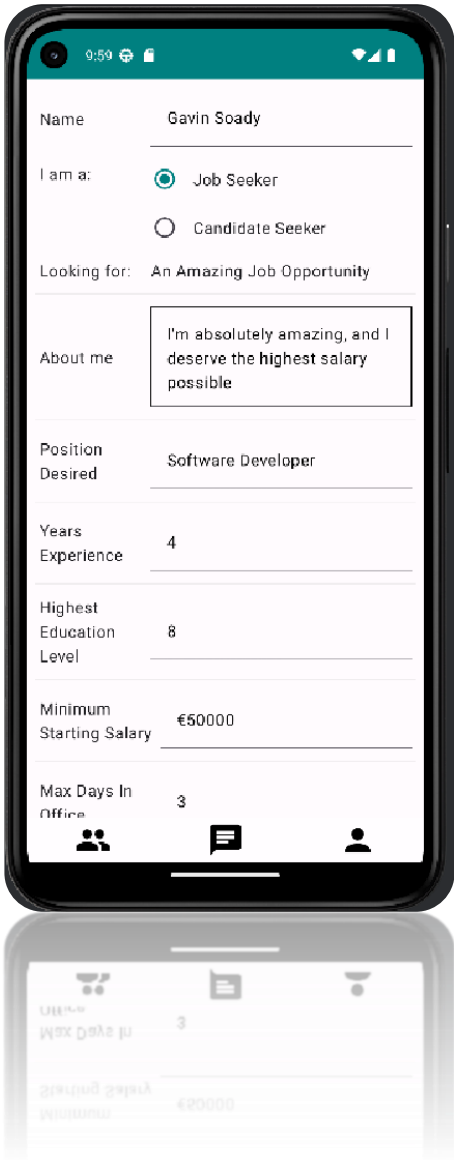
### - Profile Preferences Screen

I have built out a profile preference screen the will dynamically change the heading of each section based on selection of Job Seeker or Candidate Seeker.

<u>Job Seeker</u>	<u>Candidate Seeker</u>
About me	Job Description
Position Desired	Position Available
Years Experience	Minimum Years Experience
Highest Education Level	Minimum Education Level
Minimum Starting Salary	Starting Salary
Max days in the Office	Minimum days in the Office
Maximum Interview Rounds	Interview Rounds

These are the same fields that can be used to compare each other and create an advanced filtering mechanism, just labelled differently based on user perspective.

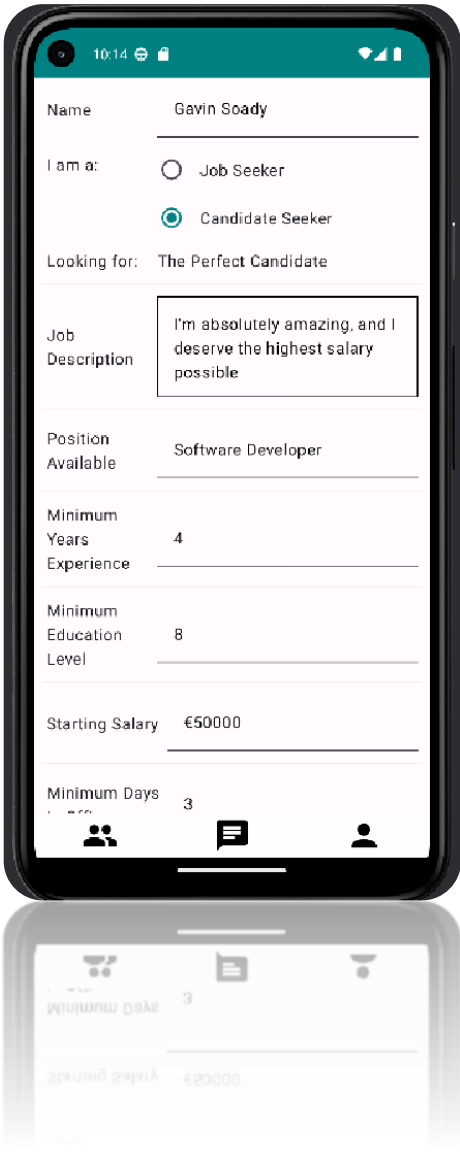
Job Seeker



The Job Seeker mobile app interface displays a form for Gavin Soady. The 'I am a:' section has 'Job Seeker' selected. The 'Looking for:' field contains 'An Amazing Job Opportunity'. The 'About me' field contains the text 'I'm absolutely amazing, and I deserve the highest salary possible'. The 'Position Desired' field contains 'Software Developer'. The 'Years Experience' field contains '4'. The 'Highest Education Level' field contains '8'. The 'Minimum Starting Salary' field contains '€50000'. The 'Max Days In Office' field contains '3'. The bottom navigation bar shows icons for home, messages, and profile.

Name	Gavin Soady
I am a:	<input checked="" type="radio"/> Job Seeker <input type="radio"/> Candidate Seeker
Looking for:	An Amazing Job Opportunity
About me	I'm absolutely amazing, and I deserve the highest salary possible
Position Desired	Software Developer
Years Experience	4
Highest Education Level	8
Minimum Starting Salary	€50000
Max Days In Office	3

Candidate Seeker



The Candidate Seeker mobile app interface displays a form for Gavin Soady. The 'I am a:' section has 'Candidate Seeker' selected. The 'Looking for:' field contains 'The Perfect Candidate'. The 'Job Description' field contains the text 'I'm absolutely amazing, and I deserve the highest salary possible'. The 'Position Available' field contains 'Software Developer'. The 'Minimum Years Experience' field contains '4'. The 'Minimum Education Level' field contains '8'. The 'Starting Salary' field contains '€50000'. The 'Minimum Days' field contains '3'. The bottom navigation bar shows icons for home, messages, and profile.

Name	Gavin Soady
I am a:	<input type="radio"/> Job Seeker <input checked="" type="radio"/> Candidate Seeker
Looking for:	The Perfect Candidate
Job Description	I'm absolutely amazing, and I deserve the highest salary possible
Position Available	Software Developer
Minimum Years Experience	4
Minimum Education Level	8
Starting Salary	€50000
Minimum Days	3

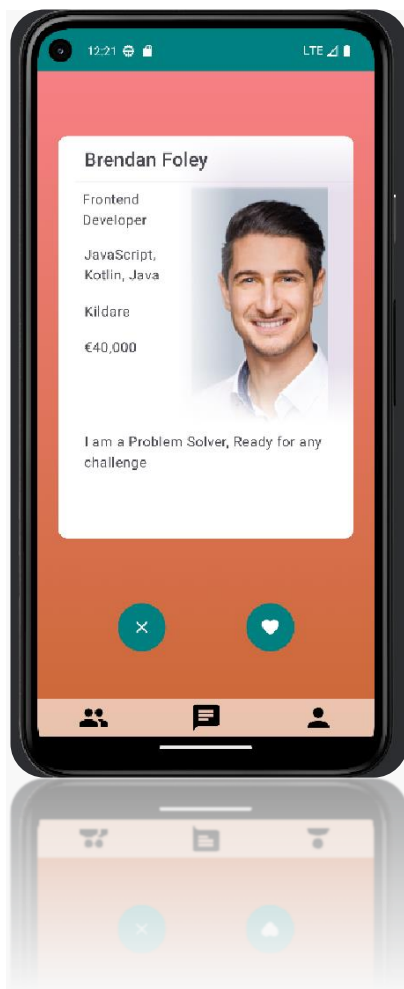
## Sprint 3 Progress

### - Search Screen.

#### Seach Screen - Candidate Seeker

Displaying a Job Seekers Profile with Name, Skills, Location, Desired Starting Salary and a little Bio and a Candidate image.

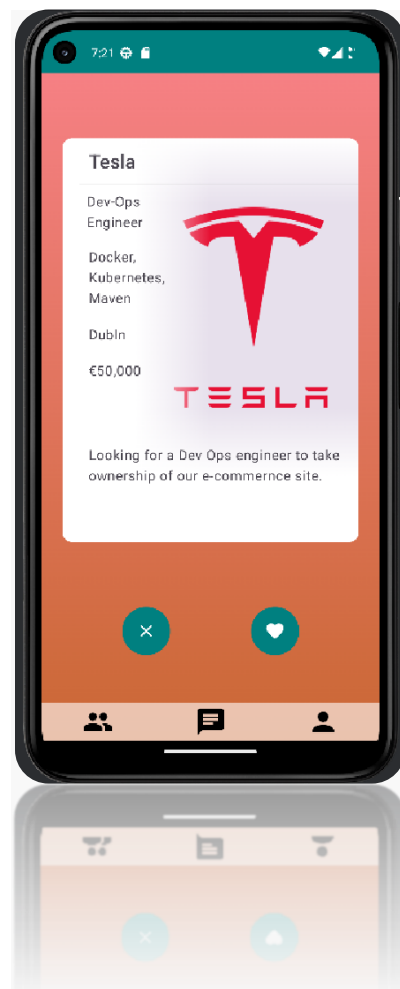
I'm still working on the exact layout, but it definitely gives an idea of what I'm trying to create.



#### Seach Screen - Job Seeker

Displaying a Job Posting with Name of the company, Skills required, Location, Starting Salary and a little Job Description and company Logo.

I would like the layouts for each type of user to differ slightly, I would like the Person Profile to be a little more C.V. Like and the Job Posting a little more. Like a job post



- Search Logic.

Milestone 1 complete, I set out to create an application that allows both Job Seekers and Candidate seekers to create a profile and match with each other with basic filtering.

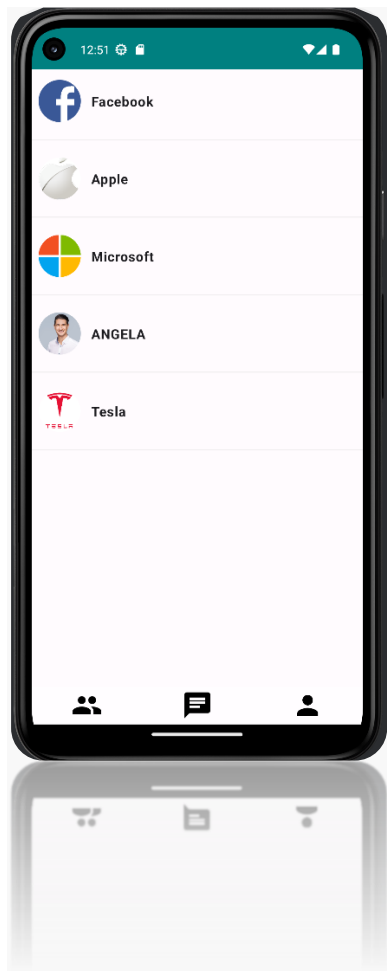
*Milestone 1: Basic Filtering and Matching for Job Seekers and Job Opportunities, laying the foundation for a streamlined recruitment experience.*

I would like to continue with the rest of the app functionality, Match List Screen and Messaging/Chat Screen before progressing on to milestone 2 and 3.

## Sprint 4 Progress

- Match List Screen

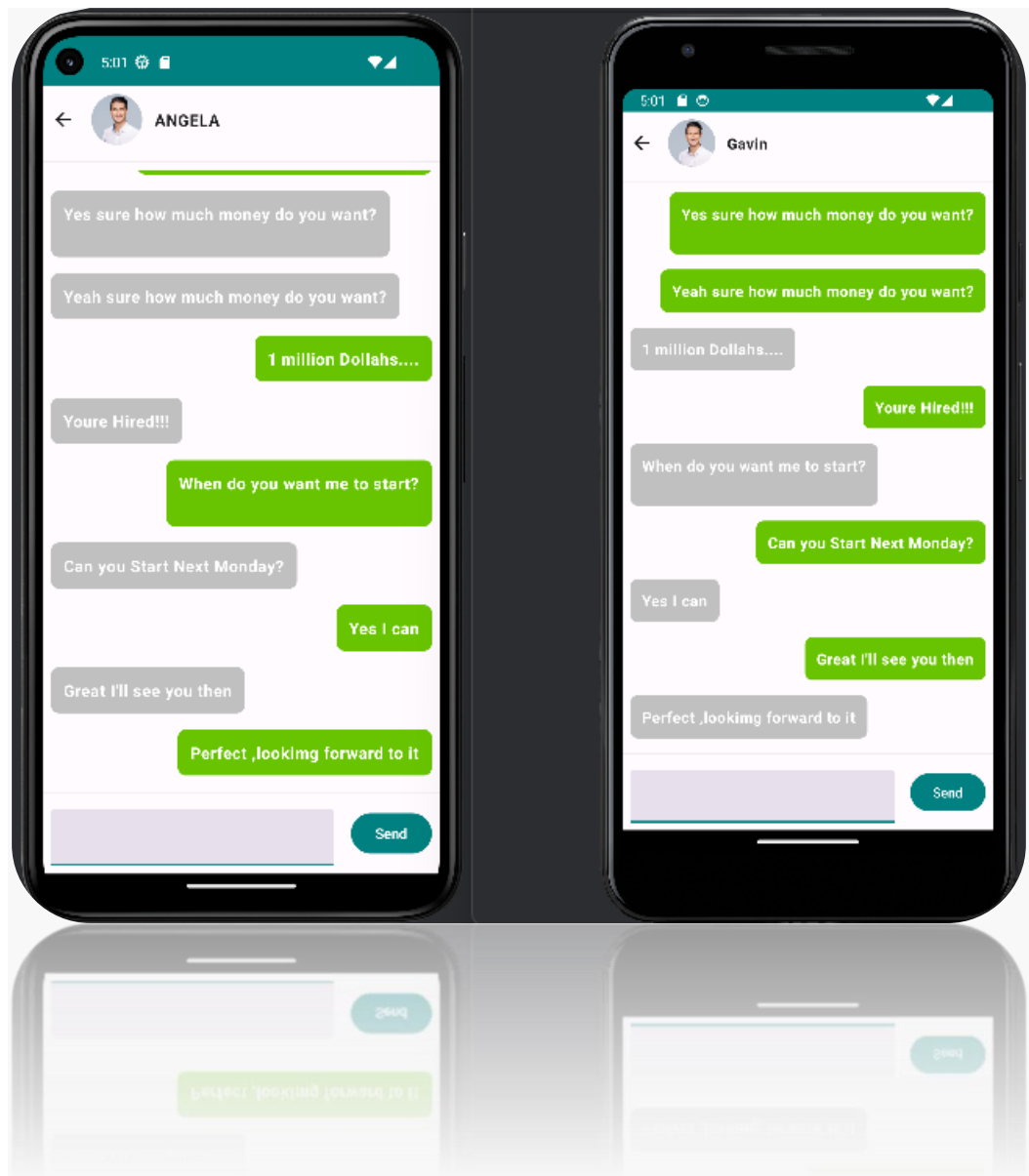
Match List Screen show a list of all matches, in this case this a Job Seeker with list of Candidate Seekers, Companies and a Recruiter – Clicking on any item in this list will open up the Match Chat Screen and allow user communicate via messenger to selected connection.



- Match Chat Screen

Screenshot of Live chat running on two separate instances of my application. Chat will update in real-time allowing two users to communicate via text.

I would like to add functionality that allows users to upload and download files to each other. i.e full Job Spec/ C.V.





## Sprint 5 Progress

- Analytics.

I did not have time to complete any analytics as set out in the planning stage, but there are so many possibilities to help both Job seekers and Candidate Seeker out when building their profile.

<u>Job Seeker</u>	
<u>Profile Section</u>	<u>Analytics</u>
About me	Highlight key words Recruiters are most likely to look out for, Soft-skills and technologies.
Minium Starting Salary	Display how many positions are available if minimum starting salary is lowered. Show how many candidates are also at that range. Display average or "Industry Standard"
Max Days in the Office	Show how many more positions are available if they are willing to work 1 more day in the office.
Available Weekends	Show how many more positions are available if they are willing to work weekends/ this could work for overtime too.
Maximum Interview Rounds	Show how many more positions are available if they are willing to increase interview rounds

<u>Candidate Seeker</u>	
<u>Profile Section</u>	<u>Analytics</u>
Job Description	Highlight key words Job Seekers with that Job Position are most likely to look out for, growth, technologies that will be used salary
Starting Salary	Display how many positions are available if starting salary is increased. Show how many candidates are also at that range. Display average or "Industry Standard" So Candidate seeker is aware if salary is below industry standard.
Max Days in the Office	Show how many more positions are available if days in the office is reduced by 1 more day.
Available Weekends	Show how many more candidates are available if weekend work is removed.
Maximum Interview Rounds	Show how many more candidates are available if they are willing to decrease interview rounds

- Multi Job position list for Candidate Seekers (Nice to have).

I did not have time to complete this section, but I would like to include an Admin profile that had the ability to create multiple job offerings.

Realistically a Company/ Recruiter/ Candidate seeker will most likely have multiple positions to fill are not going to create an account for each position. So, an account that can list multiple positions would just need to be a list of job positions and then function exactly the same as the rest of the application so would only need one more page which I do not think that would be that difficult to do.

It would function just like the chat page and each Job position would have a unique ID that would be used to display and access each job posting.

## **Sprint 6 Progress**

- Debugging if necessary.

I was naive to think “if necessary” and this could wait until the end, every day was more Debugging than coding, they don’t tell you that in the brochure.

One bug still outstanding is when I edit my profile image it clears off any information I do not have saved, so I will definitely have to address that.

- Complete Documentation.

It’s 20:16 on 04/04/2024 so it’s less than 4 hours until deadline and I’ll still be here right to the wire I’d say.

- Create Demo Video.

Thankfully this is not due until next week.

## 12. Use of AI in the project

I used Bing Co-Pilot to search for “Top 10 things job seekers are looking for” as I could not find my original source. Surprisingly the list returned was almost exactly the same, and in the same order just slightly different wording.

Co-pilot, B., 2024. Top 10 things job seekers are looking for. s.l.:Bing Co-Pilot AI.

I used Bing Co-Pilot to create “Dummy Data” for profiles within my app. I fed in the Data Model for both Job Seekers and Candidate Seekers and it returned “Dummy Data” I used to create profiles within my app for testing and demonstration purposes. This was extremely useful as I could generate “Dummy Data” to fill the app with “User Profiles” and change my data model without the painstaking effort to create multiple profiles each time I updated the Job Seeker or Candidate Seeker model.

This produced exactly what I was looking for:

### Table of example of Job Seeker Data Model

Table											
ID	Position Title	Exp	Education Level	Salary	In-Office	Location	Programming Languages	Speaking Languages	Weekends	Mon-Fri	Rounds
1001	Full Stack Dev	3	Bachelor's Degree	\$60,000	1	SF, CA	JS, Python, HTML/CSS	English	No	Std workdays	2
1002	Backend Dev	5	Master's Degree	\$80,000	5	Remote	Java, Kotlin, SQL	English, Spanish	Yes	Flexible	3
1003	Mobile App Dev	2	Bachelor's Degree	\$55,000	3	NYC, NY	Swift, Kotlin, React Native	English	Yes	Std workdays	1

### Table of example of Candidate Seeker Data Model

Table											
ID	Position Title	Exp	Education Level	Salary	In-Office	Location	Languages	Weekends	Mon-Fri	Rounds	Description
1001	Full Stack Dev	3	Bachelor's Degree	\$60,000	Yes	SF, CA	JS, Python, HTML/CSS	No	Std workdays	2	Build web apps. Collaborate with teams.
1002	Backend Dev	5	Master's Degree	\$80,000	No	Remote	Java, Kotlin, SQL	Yes	Flexible	3	Design APIs. Optimize queries.
1003	Mobile App Dev	2	Bachelor's Degree	\$55,000	Yes	NYC, NY	Swift, Kotlin, React Native	Yes	Std workdays	1	Craft mobile apps.

### Job Seeker Example in JSON Format

```
[
  {
    "ID": 1001,
    "PositionTitle": "Full Stack Developer",
    "YearsExperience": 3,
    "MinEducationLevel": "Bachelor's Degree",
    "MinSalary": "$60,000",
    "WorkInOfficeDays": 5,
    "Location": "San Francisco, CA",
    "ProgrammingLanguages": ["JavaScript", "Python", "HTML/CSS"],
    "SpeakingLanguages": ["English"],
    "WeekendsAvailable": false,
    "MondayToFriday": "Standard workdays",
    "InterviewRounds": 2
  }
]
```

### Candidate Seeker Example in JSON Format

```
[
  {
    "ID": 1001,
    "PositionTitle": "Full Stack Developer",
    "YearsExperience": 3,
    "MinEducationLevel": "Bachelor's Degree",
    "MinSalary": "$60,000",
    "MaxSalary": "$80,000",
    "WorkInOfficeDays": 1,
    "Location": "San Francisco, CA",
    "ProgrammingLanguages": ["JavaScript", "Python", "HTML/CSS"],
    "SpeakingLanguages": ["English"],
    "WeekendsAvailable": false,
    "MondayToFriday": "Standard workdays",
    "InterviewRounds": 2,
    "JobDescription": "Build end-to-end web applications using Python and Django framework. Collaborate with cross-functional teams."
  }
]
```

## 13. What I Learned

There is never enough time – Act as if you have half the time available and plan according to that as it will almost always take you longer than you believe it will.

Create an MVP first then add extra features afterwards – I spent too much time on tiny little details that could have been spent on features. ‘Gold plating’ can be done just before production when all the features speak for themselves.

Under promise and over deliver on goals and expectations, if you get things finished earlier than the deadline you can always go back and add features afterwards and by then you will be able to manage your time and expectations better as you will be more familiar with project and how it works.

Do not update dependencies unless absolutely necessary- No matter how much Android studio flashes at you about exciting updates available - Stick with whatever dependencies are there from the beginning on the project, one update can completely knock out the whole project and unless you’re very experienced in development you could be hours or days trying to resolve the issue.

Commit often and push twice daily – backing up your work is key to your piece of mind and sanity – My laptop died- Fried by electrical surge halfway through the project if I had not pushed to a backup, I probably would have not finished the project.

‘--warning-mode all’ is your friend, it will help determine if errors come from scripts or Plugins – This helped trouble shoot where all the warning were coming from and helped be get back on track quicker if I only I knew this for the first half of the project too.

Try to understand Why rather than What – Copy and paste or typing along to a tutorial can be great to help you getting your code work, but it’s far better to try to understand why you are using the code you are using and if it is the best approach.

Break the code and see what happens – purposefully change the code and see what happens, especially with fronted code so you can understand what is actually happening.

## 14. What I achieved

I actually really enjoyed the coding element of this project. I love a challenge and I love puzzles and I think Software Development is like solving a puzzle that you have conceptualised in your own mind. You know roughly how you want it to look at the end, how it should work and then the challenge is find and build the pieces you need to put it all together, and like a puzzle it starts off slow and becomes more and more exciting as you see your concept come to life.

I have found all my life I have always come up with good ideas, either building on or adding to others work or something totally unique but I have never had the skills or discipline to put it into practice and make it a reality, until now.

I believe after doing this project I could certainly attempt and most likely create an MVP on almost any App idea that comes to mind.

I have the foundations to create a Sign up page and Sign in page, Authentication, DB integration and Storage. And once these are in place any other functionality can be built around that.

I would have thought I would be happy to hand in my assignment and switch off and forget about the project but I'm excited to continue on developing out my project and adding functionality to it and using to practice and develop my skills.

As long as this course is normally for students it has been an extra 2 years for me and I am delighted I persevered and progressed through to this point where I am now, it has given me a new desire to progress and dare I type it out loud, go further to compete a Master in the computer science field, I'm leaning towards AI and robotics, if you can't beat them, program them.

## 15. Problems Encountered & Challenges Overcome

Android Studio does not work optimally on 8GB of Ram and i5 processor – When my laptop died, I had to set up android studio on a backup laptop, it was torture, unbelievably slow and I had to restart my project and laptop every couple of hours to get Android Studio working at an acceptable rate – I had to buy a new laptop, Ryzen 7, 16gb Ram and I could run 3 separate instances of android studio with emulators with zero issue – if MAD is on the curriculum next year I would suggest something more powerful than a 8gb I5 Laptop/PC.

### Progress Speed Bump 1

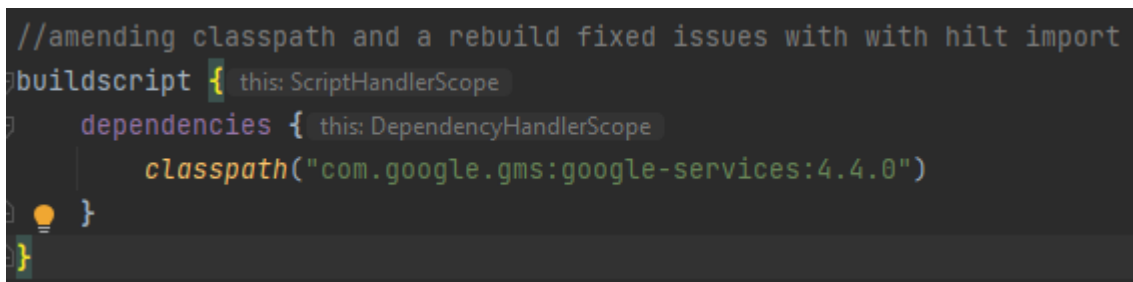
App would not build dues to class path error.

#### Issue

Google Services dependency was at a different version and prevented hilt import.

#### Resolution

Change classpath in project gradle (Project). (Vasava, 2023)

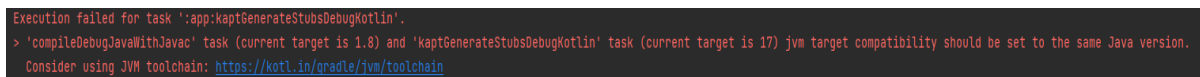


```
//amending classpath and a rebuild fixed issues with with hilt import
buildscript { this: ScriptHandlerScope
    dependencies { this: DependencyHandlerScope
        classpath("com.google.gms:google-services:4.4.0")
    }
}
```

---

### - Progress Speed Bump 2

#### Target JDK Compatibility error



```
Execution failed for task ':app:kaptGenerateStubsDebugKotlin'.
> 'compileDebugJavaWithJavac' task (current target is 1.8) and 'kaptGenerateStubsDebugKotlin' task (current target is 17) jvm target compatibility should be set to the same Java version.
Consider using JVM toolchain: https://kotlin.in/gradle/jvm/toolchain
```

### - Resolution

Resolution Found on at on stack overflow. (Duck, 2021)

This Worked But caused a new error:



```

compileOptions { this: CompileOptions
    sourceCompatibility = JavaVersion.VERSION_17
    targetCompatibility = JavaVersion.VERSION_17
}

```

Was

```
id("org.jetbrains.kotlin.android") version "1.8.10" apply false
```

Now

```
id("org.jetbrains.kotlin.android") version "1.7.20" apply false
```

Rolling back to earlier versions lost Timber compatibility.

I had Timber Compatibility built in based on:  
Mobile Application Development 08: jetpack Compose.



### Progress Speed Bump 3

Android build Fail with errors below:

```

> ! :app:mergeDebugJavaResource 5 errors
    ! :app:checkDebugDuplicateClasses
    ! Duplicate class found

```

### Issue

Duplicate Dependencies (ThomasCookLush, 2022)

```

implementation("androidx.compose.material3:material3")
//implementation("androidx.compose.material3:material3-android:1.2.1")

```

### Resolution

Comment out duplicate implementation in build.gradle.kts.

### Progress Speed Bump 4



App Crashing Every Time Profile face tries to launch.

### Issue

Gender and gender preferences are saved as "Null" as a string as opposed to null value.

bio: null

gender: "null"

(string)  

genderPreference: "null"

imageUrl: null

interviewRounds: ""

location: ""

minEducationLevel: ""

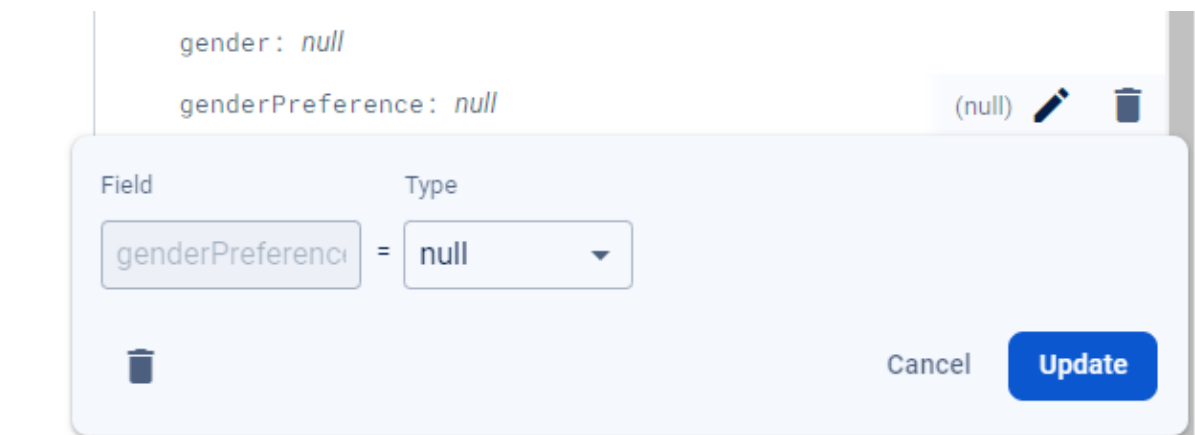
minSalary: ""

mondayToFriday: ""

name: null

### Resolution

Amended data type in Firebase for testing purposes.



This worked for that user, but issue still persisted.

I was missing a '?' after gender and gender preference.

Before:

```
gender = gender.toString() ?: userData.value?.gender,  
genderPreference = genderPreference.toString() ?: userData.value?.genderPreference
```

After:

```
gender = gender?.toString() ?: userData.value?.gender,  
genderPreference = genderPreference?.toString() ?: userData.value?.genderPreference
```

Issue resolved in data base:

+ Start collection

---

+ Add field

```
bio: null
gender: null
genderPreference: null
imageUrl: null
name: null
userId: "uZXLLh5xLwTevzTF0vEcw52AtjO2"
username: "gsoady"
```

---

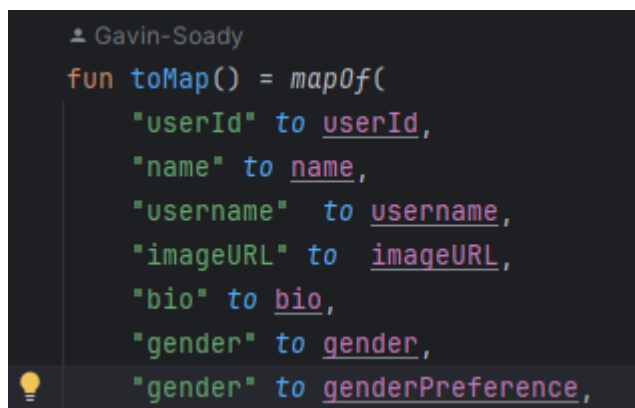
---

### Progress Speed Bump 5

Gender and Gender Preference are mapped incorrectly someone in the code.

#### Issue

In my datatypes file gender was mapped to gender and genderPreference.



```
↳ Gavin-Soady
fun toMap() = mapOf(
    "userId" to userId,
    "name" to name,
    "username" to username,
    "imageUrl" to imageUrl,
    "bio" to bio,
    "gender" to gender,
    "gender" to genderPreference,
```

#### Resolution

3 hours of debugging before I realised the issue and corrected the mapping.

```

Gavin-Soady
fun toMap() = mapOf(
    "userId" to userId,
    "name" to name,
    "username" to username,
    "imageUrl" to imageUrl,
    "bio" to bio,
    "gender" to gender,
    "genderPreference" to genderPreference,

```

## Progress Speed Bump 6

### Type Mismatch Issue

```

e: C:\Users\gsod\AndroidStudioProjects\TheGreatFilter\app\src\main\java\org\wit\thegreatfilter\ui\screens\MatchScreen.kt: (119, 44):

```

```

Type mismatch: inferred type is MatchProfile but UserData was expected

```

### Issue

UserData was not the "Correct" UserData

```

139 private fun ProfileCard(
140     modifier: Modifier,
141     matchProfile: UserData,

```

profiles.map are a List of MatchProfile and should be UserData

```

//Cards
val states = profiles.map { it to rememberSwipeableCardState() }

Box(
    Modifier
        .padding()
        .fill(maxSize())
) {
    public val profiles: List<MatchProfile>
    org.wit.thegreatfilter.utils
    MatchProfile.kt
    The_Great_Filter.app.main
    :

```

Rouge } prevented profiles from being declared and cost 2-3 hours of debugging

## Resolution

Select UserData as in relation to the App data (I Could Probably be more specific on the naming convention)

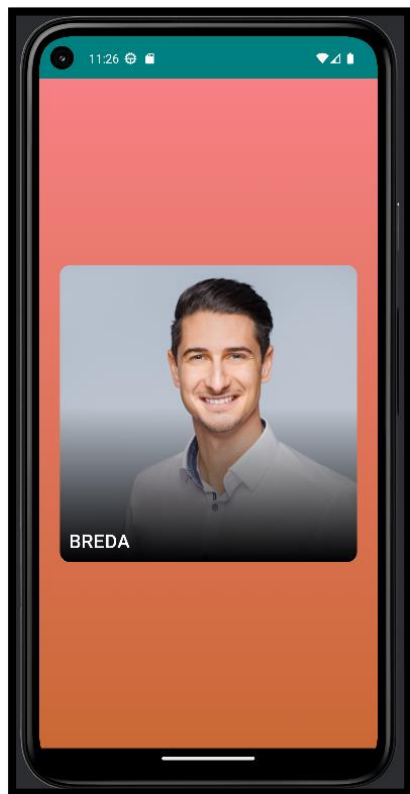
```
UserData (org.wit.thegreatfilter.data)
UserData (android.service.autofill)
UserData (com.google.firebase.firestore.core)
```

Remove rouge } to allow profiles to be declared a local variable

---

## Progress Speed Bump 7

Navigation Bar missing from screen.



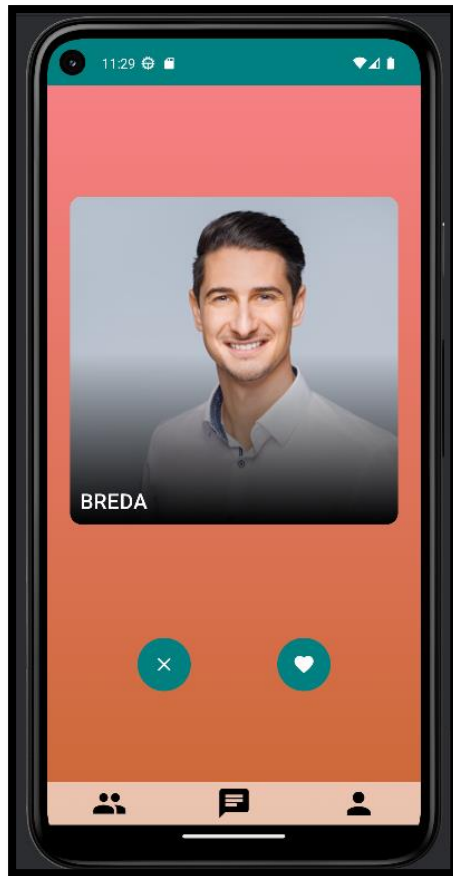
## Issue

Box was set to fillMaxSize().

```
Box(
  Modifier
    .padding(24.dp)
    .fillMaxSize()
    .aspectRatio( ratio: 1f)
```

## Resolution

Remove fillMaxSize().



## - Progress Speed Bump 8

Chat is not populating in MatchChat Screen.



## Issue

Missing "chatId" from document

```
fun populateChat(chatId: String){
    inProgressChatMessages.value = true
    currentChatMessagesListener = db.collection(COLLECTION_CHAT)
    .document().
    collection(COLLECTION_MESSAGES)
    .addSnapshotListener { value, error ->
```

### Resolution

Pass “chatId” into document.

```
fun populateChat(chatId: String){
    inProgressChatMessages.value = true
    currentChatMessagesListener = db.collection(COLLECTION_CHAT)
    .document(chatId).
    collection(COLLECTION_MESSAGES)
    .addSnapshotListener { value, error ->
```

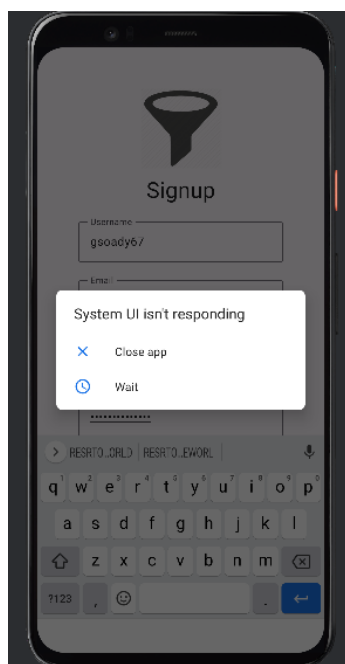
### - Progress Speed Bump 9

Laptop Motherboard was fried with a power surge testing HDMI to RJ45 converter.

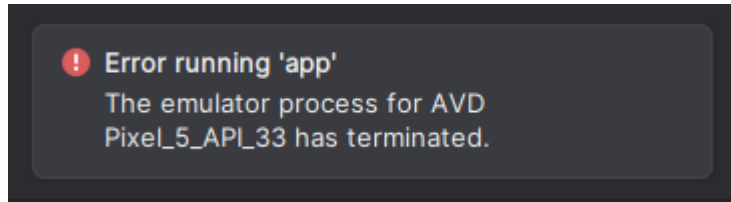
### - Resolution

New Laptop -> Download Android studio -> Pull Project Repo from Git account ->

Use Pixel 4 API 30 -> App will not Launch -> “System UI isn’t responding” error->



Investigate result at: <https://rb.gy/1p4a6a> & <https://rb.gy/1p4a6a> ->  
Update config file @  
C:\Users\localadmin\.android\avd\Pixel\_4\_API\_30.avd\config.ini-> change  
hw.gpu.enabled = no  
hw.gpu.mode = off





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# Appendix

## My Indeed profile



### Job preferences

Tell us the job details you're interested in to get better recommendations across Indeed.

Employers may see these preferences when your CV is set to searchable.

---

 **Job titles** 



Software Developer/Engineer

---

 **Job types** 

Full-time  
Permanent

---

 **Added** 

**Work schedule**

Days  
Monday to Friday  
No weekends

Shifts  
8 hour shift

Schedules  
Flexitime

---

 **Minimum base pay** 

€50,000 per year

---

## My Suggested Job Position



New

**Lead Developer**  
Kraft Agency  
Galway, County Galway  
€35,000–€47,000 a year Full-time ♥ +1  
➤ Easily apply  
◦ Take ownership of projects from concept to completion, meeting deadlines and delivering high-quality results.  
◦ Ability to work in a hybrid environment, including in-office and remote work (1-2 days per...  
Ad · Active 2 days ago

**Early Years Practitioner**  
Enquiring Minds Childcare  
Kildare, County Kildare  
€14.50–€16.50 an hour Full-time ♥  
Monday to Friday ♥ +1  
➤ Easily apply  
◦ We follow an emergent curriculum and are play based but incorporate all childcare approaches.  
◦ The position is in our preschool classroom, working along side two other teachers in a classroom with 22...  
Ad · Posted 30+ days ago

New

**Early Years Educator**  
Play and Learn Childcare & Education  
Newbridge, County Kildare  
€29,120–€36,000 a year Full-time ♥ +2  
Monday to Friday ♥ +1

**Lead Developer**  
[Kraft Agency](#)  
Galway, County Galway · Remote  
€35,000–€47,000 a year - Permanent, Full-time  
[Apply now](#)  


**Profile insights**  
Here's how the job qualifications align with your [profile](#).


Skills

? Web development ? Leadership ? E-commerce  
[+ show more](#)

Do you have experience in Web development?  
[Yes](#) [No](#)

**Job details**  
Here's how the job details align with your [profile](#).

 Pay  
€35,000–€47,000 a year

 Job type  
Permanent ✓ Full-time ✓

**Benefits**  
Pulled from the full job description

- On-site parking

45

## My Glassdoor Profile

### My information

Updating your information will offer you the most relevant content and conversations.

Employment status\*

Employed

Full name\*

Gavin Soady

Job title\*

Software Engineer

Location\*

Naas (Ireland)

Employer\*

HCL Technologies Ltd.

Primary industry

Tech

Specialisation\*



Engineering

## My suggested Job positions



For You

Search



Your Activity

 Home Instead Meath 3.7 ★



**Home Care Assistant - Full Training provided/Drivers Needed**  
Drogheda  
€13.92 - €16.00 Per hour (Employer Est.) 16d


 Nua Healthcare 2.8 ★




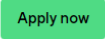
**Social Care Worker and Assistant Support Worker**  
Louth  
€29K - €36K (Glassdoor Est.) 30d+

 Aldi 3.5 ★

**Store Assistant**  
Carrigaline  
€13.85 - €16.00 Per hour (Employer Est.) 30d+

 Center Parcs 3.8 ★

**Housekeeper / Cleaner**  
Longford  
€12.90 Per hour (Employer Est.)  
 Easy Apply 4d

 Home Instead Meath 3.7 ★ 

**Home Care Assistant - Full Training provided/Drivers Needed**  
Drogheda


Full Job Description

**Care to make a difference?**


Come and join us at Home Instead – the world's largest and most trusted private home care provider. With our local office in Meath we take great pride in providing people-centred support to our staff so they can provide the best support to the most vulnerable in our community. We are currently experiencing an unprecedented demand for our service all across Meath and are hiring Health Care Assistants to work on permanent and temporary basis.

**What will you do?**

Working as part of a team of Home Carers you will be helping our clients to maintain their independence, live at home and support all aspects of their lives.

[Show more](#) 

### Average base salary estimate

 Estimate provided by employer

€14.96 /hr [est.]

€13.92

€16.00

## LinkedIn

### My Profile

← Skills

All

Industry Knowledge

Tools & Technologies

Interpersonal Skills

Software Development

Web Development

SDLC

Marketing Strategy

Project Management

C#

HTML

CSS

1 endorsement

Bootstrap

JavaScript

### My suggested Job positions.

in

Title, skill or company

City, state, or zip code

Home

My Network

Jobs

Messaging

Notifications

My jobs

Preferences

Demonstrate skills

Interview prep

Resume Builder

Job seeker guidance

Application settings

Post a free job

Recommended for you

Based on your profile and search history

HAYS

Senior Angular Developer

Hays

Dublin, County Dublin, Ireland (Hybrid)

€65K/yr - €85K/yr

Actively recruiting

Promoted • Easy Apply

Angular Developer

GemPool Recruitment

Dublin, County Dublin, Ireland (Hybrid)

Actively recruiting

Promoted • Easy Apply

IBM

Front End Developer

IBM

Mulhuddart, County Dublin, Ireland (On-site)

2 connections work here

Promoted

Show all →

47