Project Report - 1

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December 2020

1 Introduction

I, Esra Kantarcı Çayır, am a lawyer who is currently studying computer science engineering. I was determined to find a problem on the legal grounds, so I can solve it in a interdisciplinary sense. This is why I came up with different problems on law related issues. This project aims to be a solution for a practical case: inheritance Distribution Share Calculation. The project will be called "ISC" in this report for the readability purposes.

In this report, I will be explaining what is the project's main requirements, tools and constraints, expected impact and novelty of the project.

2 The Project

In Turkish Civil Code, the inheritance and share rules are explicitly written. Even though there are different point of views on heritage("tereke") calculation due to different assets and contracts, there is no dispute on the calculation of the shares of the heirs'.

The heirs often need to go court for the disputes between themselves. Even though it is recommended to get consultancy from a legal professional for such conflicts to get accurate results on the heritage itself, this project will help people to evaluate their "shares" and make the complicated calculations (due to deceased heirs and wide family tree) easier, faster, and mistake-free.

The rules of share calculation will be explained in the next report. For the understanding why we need such application (and why not to do it by hand), here is an example scheme of the heir tree:

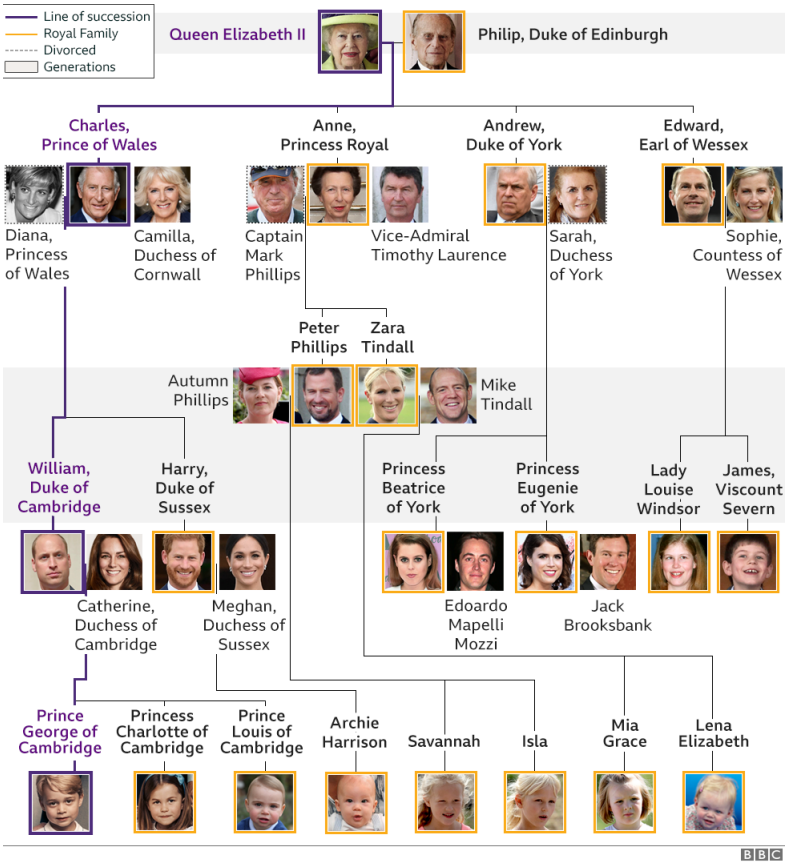

Figure 1: British Royal Family Tree

As you can see, there are and expected to be divorces and deaths before the Queen Elizabeth dies. If there was just 2-3 children, who are all alive and well, there would not be any issue. However, when the family tree is complicated and there are several deceased heirs, the calculations take time by hand.

3 Requirements and Tools

The legal constraints and the rules will be explained in the next report. In this report, the programming requirements and the tools will be listed.

The project's main structure in the logical part can be solved recursively. In fact, the problem can be divided into substructures and there will be overlapping subproblems because of the lineal kinship. Optimal substructure can also be obtained by using the optimal solutions, because of the order-rank rules.

In order to start such project, we need to:

- specify the requirements from the potential users,
- list the legal constraints of the share rules,
- get an outline description for the background logic,

After discussing with lawyer associates and potential users, the required features list is ready. According to this list, we need to provide:

- personal share rate,
- all the potential heirs' share rate on demand,
- kind of knowledge-base for the further information.

After specification of the demanded features, platform preference is quite obvious: this application should be available on mobile. Since this application's logic is pretty easy for a senior project after the base-rules are set, I thought it would be good to complicate things a little bit and learn new skills during the project. This is why I started to research about cross-platform preferences and decided to use Flutter framework on Dart, because of the advantages below:

- Native performance in iOS, Android and Web,
- Fast development,
- Simple, flexible and beautiful user interfaces,
- Clean libraries,
- Open source,
- Python script insert-able,
- Firebase applicable,
- Getting more and more preferable in mobile development, thus beneficial to my career.

3.1 Road Map

Here is the roadmap I decided to follow for development:

- List legal constraints and complete requirement specification phase
- Learn Dart language and getting familiar with Flutter
- Wireframe the pages for mobile
- Apply incremental development model
- Collect complicated use cases for testing purposes
- Deliver first version with GUI
- Get feedback from lawyers
- Deliver second version with business logic implanted
- Ensure the responsiveness of the design
- Add unit testing
- Get feedback from potential users
- Add necessary features according to feedback
- Deploy the final version on Play Store
- Deploy the final version on App Store

4 Novelty

There are several applications in Play Store regarding this calculation, however they all lack something. Most of them are share calculators using Sharia Law, which is not applicable in Turkey.

There is only "1" proper Turkish Civil Code based calculator, but according to its comments, it lacks use-cases and have issues on share calculations of deceased's wife/husband. It does not consider the adopted children's rights, two-sided relativity and testamentary issues. I am intended to add feature which shows legally reserved portion of the heir, if the rank is eligible, which is still not in the other application I stated.

Also, it does not give you full heir output on demand and does not have blog-like knowledgebase for further information. This is why it is not so practical to use. It has problems on User Interface side, too. And it can and should be improved further for the readability and usability purposes.

5 Impact

The expected impact from the application is to make heirs' life easier and shorten the process of the legal courts due to obvious conflicts because of the lack of knowledge on these shares.

Students can use the application for their lectures and examples. Lawyers can use the application to show the legal portions and heirs. Legal consultants can use the app for cross-check in wide family trees of old conflicts.

In my point of view, I am going to learn Flutter/Dart and publish an application which is accessible from all kind of platforms. I am planning to earn income from ads if the application satisfies my expectations.

6 Performance

The performance depends on these answers:

- Can I deliver the versions on Cross-Platform?
- Is it fast?
- Does it cover all kind of use cases?
- Does it meet the workload needs?
- Is the code reusable?
- Is it suitable for the further deployments?

If the answers are yes, it means we had met with the performance requirements.

7 Conclusion

As a lawyer who studies Computer Science Engineering, I am determined to use my own knowledge on both disciplines.

There are many conflicts between the relatives due to heritage and the portion/rate of the assets, and this is why they need to go court to deal with sharing issues. The calculator apps which are currently in Play Store and App Store needs to be improved.

And it is not always the case that you will accept the heritage. Sometimes, heritage can bring negative assets, this is why you need to agree on disclaimer of the inheritance on your behalf. These will be also given in the blog/knowledgebase part of the application.

The ISC Project will help people to understand their legal rights and responsibilities and will have effect to solve legal conflicts between the heir parties faster. By using this application, it is expected from the users to get information on the legal shares and and the possible legal share rates of the assets.

The sprint plans, initial logic and wireframe designs will be stated in the next report.