T.C.

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Software Engineering (English)

Graduation Thesis

**“ForLib – Social Library Platform”**

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**PREFACE**

I, Berkay Öner, hereby declare that the work is not presented, taken, copied, shared in any other places or platforms. The work is completely original and made from scratch.

I will explain my graduation project as detailed as I can in this thesis and show the pictures of some of the codes and screens in my both C# Windows application and ASP.NET website application. My topics are going to be the ideas, problems that I had and technical explainations.

Thank you for letting us learn the subjects of our future job by giving us this project, letting us research, try and learn new features. I hope I can satisfy your expectations.

Berkay Öner

Place: Uskudar University

Date: 02.06.2024

**PART 1: PROJECT DESCRIPTION**

**1.1 PROJECT OVERVIEW**

This project is a social library platform. There are platforms and websites that allows users to buy physical books or write and share free books but there is no platform that allows users to write and sell books in realtime. Our projects allows the users to write-read-sell-share books and have their own social profiles.

This graduation project includes 2 software projects inside. One is a C# Windows Form Application (main project) that allows the users to access this platform and make all the processes. The other one is a ASP.NET web site project that allows the users to download the application and also find the contact informations.

**PART 2: THE PURPOSE OF THE PROJECT**

**2.1 THE USER BUSINESS OR BACKGROUND OF THE PROJECT EFFORT**

There is no platform or project that allows the users to freely write and share books and earn money at the same time. There is a lack of projects that has been developed by these features and may bring a easy and many income for stakeholders.

**2.2 GOALS OF THE PROJECT**

We want to allow the users to have their own social profiles, be in contact, follow and like each others posts, freely write-read-share-sell-buy books online.

**2.3 MEASUREMENT**

This project will allow the users to be in contact with each other. So this is going to make the users be more connected to the applicaion and have the project, long time users. Also writing and reading book is people’s one of the most common hobbies and this allows the organization to have a high scale of user limit. Selling books by the users and getting a small amount of tax allows the user to earn money and be satisfied, also organization to earn much money with the easiest way.

**PART 3: THE SCOPE OF THE WORK**

**3.1 CURRENT SITUATION**

There will be 2 projects as C# Windows form application as the main system and an ASP.NET website that allows the users to download the form application. Developing of these 2 projects needs developer workers at the beginning. After the developing is done, systems are going to be working fully automated but it will be still developed, changed over the time and will need realtime admin workers that who supervises the users for preventing their abusal commitings.

**3.2 COMPETING PRODUCTS**

There are many publishing house websites that allows the customers to buy physical books that has been written by authors and sent to publishing houses. The most popular company in Turkey for this example is “D&R”. But these companies and websites doesn’t allow the users to write or share books by themselves. Also there is a cyber social platform called “Wattpad” that allows the users to write and share their books completely online. Wattpad is the most popular example of this kind but it doesn’t allow the users to sell or buy books.

We are going to allow the users to be able to use these both features.

**PART 4: PRODUCT SCENARIOS**

**4.1 PRODUCT SCENARIO LIST**

* **If there is a error in developement of the softwares:**
  + There will be enough time defined for the developement of the project.
* **If a worker has a problem about job and can’t continue:**
  + There should always be a backup worker that who can keep the project going on in this field. This will be solved in employment.
* **How does the organization earn money from the project:**
  + There should always be workers that who’s responsible from agreements with banks for in-product money depositing-withdrawals.
* **If a user tries to abuse any feature in any free-share page by sharing/writing absurd things:**
  + There should be always supervisor workers who’s responsible from administering users in realtime.
* **If there is a problem in the software after the update:**
  + There shouldn’t be any scenario like that. That casuses organization to loose money and customers. So every update has to be tested before the transitions. If there is still a problem, that means the responsible worker is not doing his job done. So the responsible worker has to be charged and fired because of this irresponsible act.

**4.2 INDIVIDUAL PRODUCT SCENARIOS**

* **Developers**
  + Developers will use Agile-Scrum methodology [explained in continue] for developing the project so every team will have their own leaders (for front-end, back-end developers for both windows form application and website, web desingers, etc). Leaders will explain the **weekly** goals to workers. Also leaders will have meetings with eachother and also managers (windows form application, website). Managers will most have meeting for agreements and customer needs and transfer these to leaders. Managers will be supervised by the director and directors will be working with CEO.
* **Application Workers**
  + Workers are responsible of supervising the user post in anytime for preventing any abuse.
* **Payement Workers**
  + Who’s are responsible from agreements with banks and transfer systems.

**PART 5: STAKEHOLDERS**

**5.1 THE CLIENT**

Clients are all of the users in the application. Product will be free to access. Clients are the users in the project who’s are writing-sharing-reading-selling books.

**5.2 THE CUSTOMER**

Product wont have extra eye-catching advertisements. Clients are going to use the product completely freely and will have the chance to sell their writen books. Organization will earn money from the tax that has been taken from each sell.

**5.3 THE WORKER**

The workers who’s are responsible from developement and supervising of the product after the release.

**5.4 THE INVESTER**

Inversters are the people who had agreement for describing their expectations in the product and paid an amount of money for the speed up of product developement. These people expect a money comeback. Agreements will be made at the beginning, before the payements.

**PART 6: EXPECTATIONS**

**6.1 THE ADVERTISING**

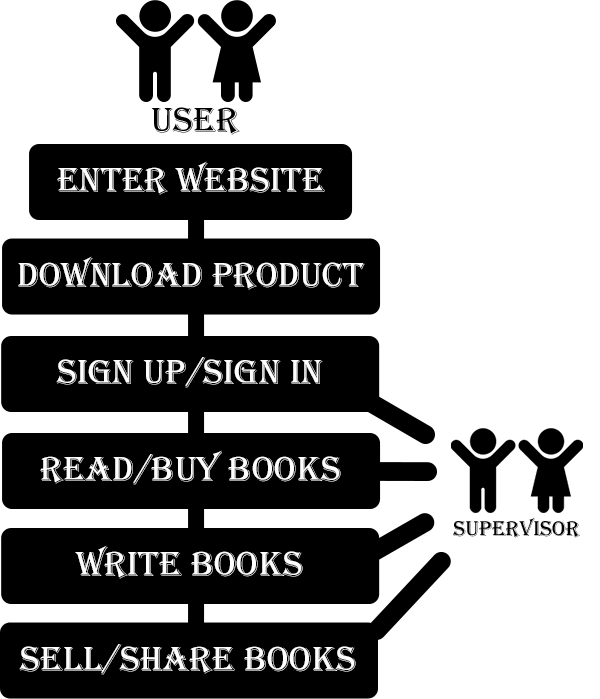
Clients are going to be able to pay money or if they are successful at the sellings of their books, their spesific products will be fatured. If they exceed a limit of sell for the product, tax amount will be lower and seller will earn more money.

**6.2 WORKPLACE ENVIRONEMNT**

For users and workers, only a personal computer will be enough to use product and also work. Workplace has to be quiet for the quality of the meetings and understanding of the workers eachother.

**PART 7: DIAGRAMS**

For any user who’s going to download the product and use for the first time, these are the all steps that they can go through. Also includes supervisor administration:



**PART 8: FUNCTIONAL REQUIREMENTS**

1. Product needs a website that allows the clients to download the form application.
2. Form application needs a database to hold every data inside.
3. Form application should be able to create accounts and profiles in the product.
4. Form application need a homepage to direct them to interesting contents.
5. Form application need profile to view.
6. Form application need a search page for detailed search and finding of books or users.
7. Form application needs a page for seeing past read/bought books for keeping track.
8. Form application needs a personal analysis page for allowing the clients to take hints related to their online time in application.
9. Form application needs 3 pages for seeing the writen books, write book cover and write/edit pages.
10. Form application needs a page for money deposit/withdrawals.
11. Form application needs extra options for supervisor worker accounts to see for managing/editing user posts.

**PART 9: NON FUNCTIONAL REQUIREMENTS**

**9.1 SPEED AND LATENCY**

Clients should be able to jump between application pages and load them as fast as possible. Servers are going to be the core of this problem.

* Calculated server hirement cost is 2000 TL monthly per 100 active users for the best quality service.

**9.2 SEARCH ACCURACY**

Clients should be able to search books. For searching books, system should search the book by it’s name and also it’s tags. Tag algorithms must be focused for the base of the system.

* 1. **CAPACITY**

Calculated server hirement cost is 1000 TL per 100 active users for the best traffic speed and quality service.

**PART 10: DEPENDABILITY REQUIREMENTS**

**10.1 RELIABILITY**

Product or the organization doesn’t get a permanent damage on failure but this effects the customer and client morales. So product must not fail more than once per day and stay always online.

**10.2 AVAILABILITY**

Product will serve the customers for 24 hours per day so there will be shifts in working hours. No worker will work more than legal working hour limit.

**10.3 ROBUSTNESS OR FAULT­-TOLERANCE**

Product shall work connected to 2 servers and continue working connected to backup server in any fail case.

**10.4 SAFETY-­CRITICAL**

Only critical fail would be the hacking attemt. Every cyber security measures will be taken. If an worker doesn’t follow the working ethicals rulls, causes his computer to be hacked and allow the hacker to access more information, worker should be charged and fired at the end of the case.

**10.5 ADAPTABILITY**

Product will be working in any computer which is running Windows 8 or a higher version. Web site will allow the clients to use the application on web browser in future updates. So user will be able to use the application even on a Windows XP.

**10.6 SCALABILITY AND EXTENSIBILITY**

Product will be serving book readers and reading books is one of the most common hobies of humans. So customer range is actually the whole internet users.

**PART 11: SECURITY REQUIREMENTS**

**11.1 ACCESS/PRIVACY**

There won’t be a shared database or source code information in the product. Workers won’t be able to access the database and will be working on the test databases. So the weekly transfers are going to be made by managers. If there is a information leak, directors or the managers of the related field will be charged. So all of the informations are going to be private and kept secret.

**11.2 INTEGRITY**

System will work almost completely automatic so there won’t be any incorrect data being kept in database after all the preventations are complete.

**PART 12: USABILITY AND HUMANITY**

Product will be used by many different ages so the UI has to be easy to understand, contents must be supervised by the admins and there shouldn’t be any error in automated system. There must be age scale and language options in book settings. So user writen books will serve the right target of people. People that who can read and see are our possible customers so filters must be as detailed as the scale of our customers.

**PART 13: USER INTERFACE**

Product has to have a simple and easy-to-understand user interface. The website will be easy to understand and must be interesting for sales. So website will have many cool texts, pictures, color tones and fonts that attracts the clients.

**A screenshot of a computer

Description automatically generatedWebsite UI 1**:

**Website UI 2:**

**A screenshot of a phone

Description automatically generated**

**Website UI 3:**

**A screenshot of a person's face

Description automatically generated**

Application works with user sign in/sign up system. So a easy to understand and not eye tiring UI with a clean enterance should work for first sign in/up page. User will have 2 simple options. Sign up or login.

A screenshot of a computer

Description automatically generated

After the login, homepage will meet with the client. Homepage must look colorful, easy to use and access. People will read books in this application and books must be more than texts. Cover pictures are key for attracting people. There is a navigation bar on left to allow users to switch between main pages easily.

A screenshot of a computer

Description automatically generated

People should see eachothers and their own profile with all details about them, how much are they successful, which books did they write.

**A screenshot of a computer

Description automatically generated**

When they choose a book, clients must be able to see the interaction, book and chapter details. Also comment section would let the user to understand and guess more about the book. Clients may buy/read, like/dislike books and start reading the book from first page or any page that they want.

A screenshot of a music player

Description automatically generated

When a user needs to find a book by its name or related tags, there is a search page.

A screenshot of a computer

Description automatically generated

Or the client may write his own books will all the details.

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated

Client may simply see the books that he read before as a history page. Also a online time page is a good accessory for giving hints to clients.

**A screenshot of a computer

Description automatically generated**

**PART 14: TEST PLANS**

Testings starts from compiling. If there is no visible error in compiling and application works perfectly, testing start from the oppening of the application. Application has a sign in/up system. So tester needs a test account for that process. Every new feature or code added to the application must be tested manually or by the codes that spesifically designed for the application. Every new features must be pushed to Git branch after testings by their coders and test workers test the features once again.

**GLOSSARY**

* **C#:** It is an object-oriented programming language created by Microsoft that runs on the .NET Framework. C# has roots from the C family, and the language is close to other popular languages like C++ and Java.
* **Windows:** Microsoft Windows is a product line of proprietary graphical operating systems developed and marketed by Microsoft. Windows is the most popular desktop operating system in the world, with a 70% market share as of March 2023, according to StatCounter.
* **ASP.NET:** ASP.NET is a server-side web-application framework designed for web development to produce dynamic web pages. It was developed by Microsoft to allow programmers to build dynamic web sites, applications and services. The name stands for Active Server Pages Network Enabled Technologies.

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