AKDENİZ UNIVERSITY

COMPUTER ENGINEERING

optime

SENIOR PROJECT

REPORT 2

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1.   INTRODUCTION

In the final project of the bachelor's coursework, it is decided to do an application which is about time scheduler for projects and personal affair. Currently, people use project management systems like 'Trello', 'Asana' to organize their business and some applications as Google Calendar to manage their activities. There are many applications that will be used to manage time. However, it has yet to develop a personal assistant aspect to gather all systems. Although clients have used time to-do applications to plan their time, they have used with no real consistent approach. Development of a time management project will improve optimization of time. In addition to management of project, application will be used to plan free times.

I want to clarify why I choose to develop a time management project. Nowadays, it is hard to schedule a project or a day. There are a lot of applications, however; none of them are not be able to organize the daily planning according to the time by minimizing the waste of time. The popularity of project management applications grows every second. It fascinated me. Then I thought that why those applications do not organize the time. The use of those kind of applications are growing popular.

1.1 Description

Optime will be a mobile application that is aimed to arrange the time thriftily so as to achieve success in one's own life. In project management part, application which is named "optime" supplies some opportunities to reach information that belonging to the project as documentation which includes reports, provide to create task and share it with other users or team members, assign task to anyone else, shuffle tasks depend on their deadline and priority. In daily life, people may forget their plans, works, meets, or some obligations to do once in a while. Optime is an assistant application to prevent some unexpected results that comprised from the giving something amiss.

There are different meanings of a painting according to beholder's perspective. Somebody looks at this painting from a distance, and they like it or not. It is the missing the small details that given the meaning to whole then only then. However, the others see it and get closer to it, Thus, they can investigate all part of the painting, analyze and make it more meaningful. Like that painting, our life has a meaning with small details. Optime helps you for catch the small point of life besides obligations. If we mention about the obligation, an old and high blood pressure patient person has to take his drug neatly, but he may slip his mind, so it can end up badly. By means of Optime, when the time of drug comes, user keep informed by notifications and alarms. On the other hand, these small details which make our life more meaningful we mentioned can be reading a book. User wants to read a book 2000 pages and continue to read regularly. Optime be helpful to organize it, reading is regulated according to day by day or pages. This choice belongs to user on two type of using application. Optime gives an opportunity to categorize as both long-term and short-term plans like those.

Other feature of Optime that it can be chosen as personal or business part by user. Personal part reminds generally social activity, not so important plans, special date like birthdays, etc. Business part of it is about work. It can be a meet, a congress, a deadline, an important knowledge to add, etc. Of course, both of them can be arranged according to user's desire and Optime send user to notifications and reminds by alarm regularly.

The most effective thing is the color. Because of color, Optime gives user to a facility to remark plans according to the order of significance. For example, an old person's taking drug is more important and one has to do it first of all. Its color is red, the most important things are remarked red. On the other hand, reading an essay for presentation is important but not so much urgent. So, it is remarked with color yellow. The other color is white. White is general. It can be a vocabulary's meaning which makes him wonder. User searches it whenever he wants. If person has a time pressure and he cannot determine which one is the most important, colors that chosen by the user helps him. At the same time, encolouring the plans that renders the application more attractive and more entertaining.

Optime reminds the habitual progress, which is not done for a long time, like as to make exercise. A fat and reluctant to lose weight person does exercise rarely after some time. Our application sends a notification after a while to him. Optime, which is arranged according to user request, reminds subjects, plans, habits, etc. in this manner via notification.

In addition to these, user can mark plans by done or not done. It makes easier the determining the time to end of user's daily duties discriminatingly and because of Optime, user can achieve success in his own life by following his goals step by step carefully.

The most important feature of Optime is that it makes the general productivity analysis of user and shows it as a table timely. And it causes to increase the application's general usage and its user group. It is sure that it increases the discipline and this qualification isolates the Optime from other application in this direction.

Optime belongs to user completely and be arranged according to user's desire. Personal or business part features help his abstaining from mess. For example, daily plans are not viewed in the time of business part of application. Also, user can arrange the time intervals every feature of Optime.

Also, it is able to make private a work schedule for users. For instance to that, Optime can be a guide for a student who prepares for an exam. This schedule arranges the time period of a working plan by determining break also which user requests. Working 40 minutes and giving a break 10 minutes, and after again working 40 minutes that can be an example for the work schedule on our application. Like the others, this is also reminded by notifications and alarm. In addition to these features, keywords can be searched on the seek bar, and so user rules over the all knowledge from past to present easily.

Optime is a mobile application that is so private and a quick that user can always achieve and use this technological agenda at anytime and anywhere easily in today's world. In brief, Optime gives an opportunity to its users not to missing the little details that makes one's life more easier, more efficient, more productive, so to have a more meaningful life, thus; user can achieve the success in his life step by step.

In briefly, task management software has become wildly popular nowadays, that means there are plenty of options to choose from. Whether to looking for a simple way to organize tasks or a powerful enterprise-grade system, there is a task management tool everywhere. However, most of them are just for project management. Optime is an online schedule management application for android and web based. In more detail users can create tasks with assigning due time. Application's main features will be planning tasks as well as planning a project. User will also identify priority of the task and the plan of the day will be changed depending on it. To detail a task user can add images that increase the visual quality. They also be free to create a repeated task which means it can be located in a plan every day. Briefly, optime is an application to help organizing time optimally. On the other hand, users can organize their business as project management. Business professionals rely on a project management software to help them oversee multiple endeavors. Companies can conveniently mitigate risk by identifying failing aspects of a project using time tracking that estimate time of completion for each stage of project. This part is used to project planning, scheduling and management. It provides managers to control developers, to control project costs and budgeting, to check quality of development, documentation, resource planning, time tracking, and many more. It is also used for collaboration between team members. This management application provides users to schedule their personal time and manage business projects with two parts which is named "optime". There are many fundamental properties of the application, but the most important feature is the optimize time in the course of schedule.

1.2 Audience

Who is the general audience the application to reach? This application can be used both as personal and as teamwork. By means of the application, everybody can easily program their daily routines, so they can save the time and do their works efficiently. At the same time, it generally appeals to people of all ages. On the

other hand, it removes the negations of teamwork. During the teamwork, some hardships may arise in the matter of to be controlled of tasks, the productivity of the workers, and the completion period of the project. The teamwork comprises of every member's devotion himself, so to reach a conclusion is harder than personal one. For this reason, if the part of the project's administration be addressed, users of occupational group in the teamwork reach the condition of audience.

But this application's using as personal has opportunity to give completely service to everybody in detail. Thanks to this, the private schedules, be guided with general information and international reality, transform to personal application which has the feature of add, delete or fix the program according to users' desire. This has also led people to be alert in doing their responsibilities in the best conditions and the most suitable time.

User centric application makes users' life more pleasurable and ordinate. At the same time, it provides an opportunity to observing widely what has completed in a long time. At the time, it provides on opportunity to observing plans in a long time widely.

## 1.3 Similar Products and Differences
1.3.1   Trello

The first similar application is Trello which is the project management tools. It can be used to organize project, project steps and organize works. The most known feature of the application is to create tasks containing images, attachments, lists. Another property is to drag and drop tasks onto other task list.
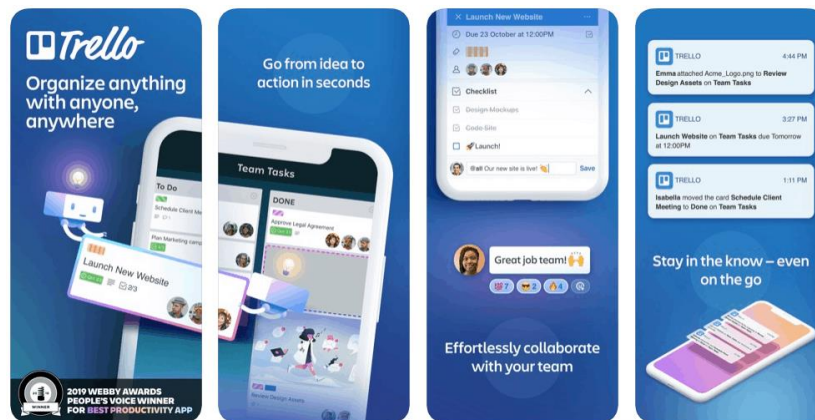

1.3.2   Asana

Another alike project is Asana that is the project management application which is easy to use. With Asana, everyone creates task list and share it with a team. However, there are many elements in the application which makes the application complicated. It also supplies an opportunity to create a timeline with tasks' deadlines.
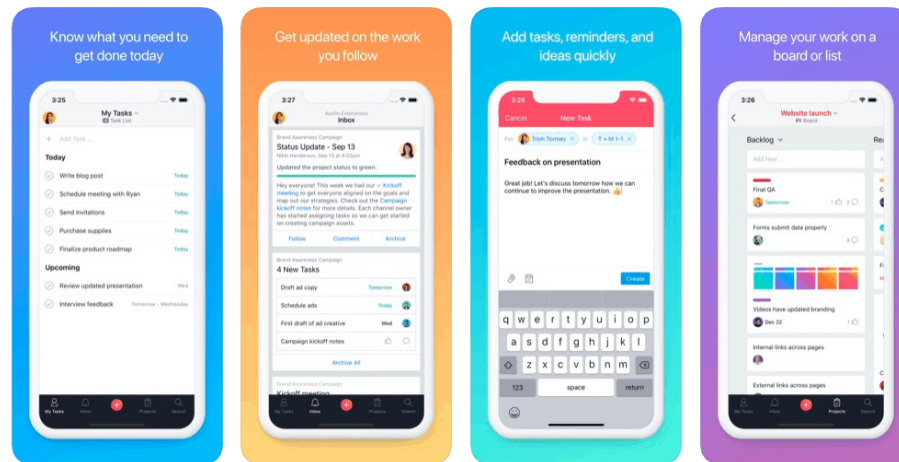
1.3.3 WunderList

Next application which is similar to optime is named Wunderlist. It is a tool that makes planning free times and managing projects easily. It organizes and shares personal to-do list easily. User can determine due dates of tasks and Wunderlist has a reminder to send notification to user.
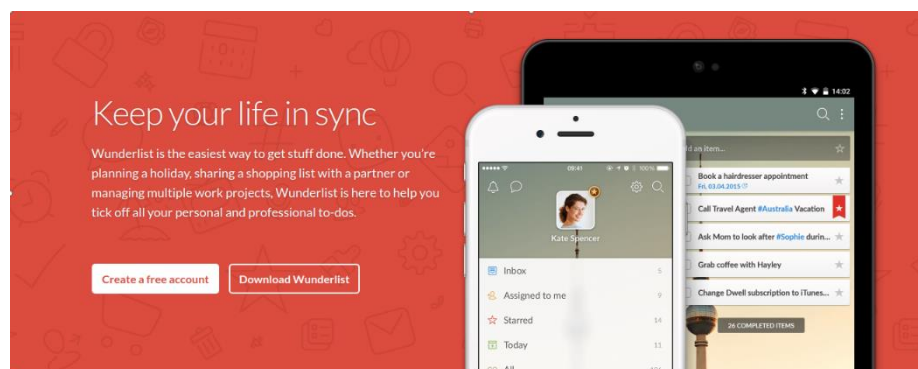
1.3.4 Google Keep

Google Keep is another application which note taking project. Users can take note easily and the application remind it later at the right time. It supports photo notes, voices and checklist. Stored things will be available in Google Drive within seconds.
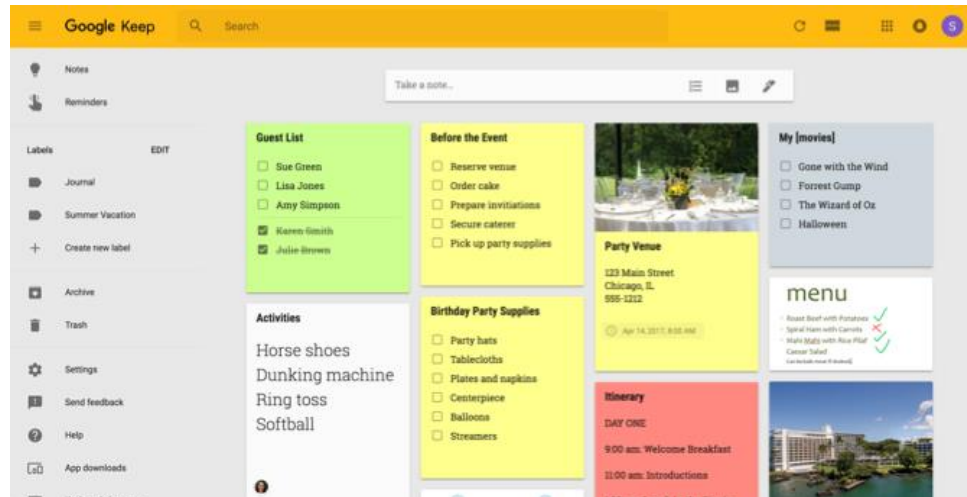
1.3.5 Optime

Optime provides to manage team projects with its intelligence user interface easily. It will be used to organize project, create teams, schedule project steps. In addition to this, project has a personal part which will be used to plan personal activities as reading a book, learning a new programming language. There are many differences from other applications. The first and most importance one is the schedule tasks. The application shuffle all the tasks automatically and it plans user's day or week programmatically. Thus, it optimizes user's time. Another significant feature is that the application contains project management part and personal management part at the same time. Thus, it aims to manage user's daily works and its job. In addition to those advantages, it divides big tasks to small tasks. It also has reminders for tasks which help users to realize time of tasks.
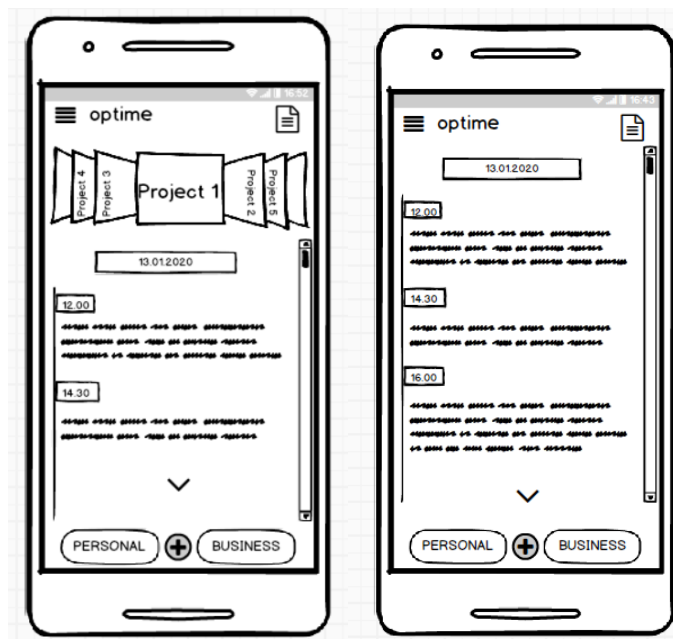
1.4 Goal of the Project

There are various goals of project,

- help users to optimize their time with minimum loss,
- provide convenience to users with scheduling daily, weekly plan,
- give opportunity to manage projects,
- make it fast to add tasks and organize them quickly,
- remind user about task deadlines,
- offer simple and clean user interface,
- synchronize teamwork with other members on the project,

1.5 Platforms to Run

Optime will be the application that aim to reach maximum number of users. For this reason, it will run on Android because Android is the most popular mobile operating system in the world, there are 2,5 billion active Android devices. On the other side, optime will be a web-based application by reason of that to reach the rest of the people who don't use Android.

2. CONSTRAINTS

2.1 Implementation constraints

- Programming language which will be used in the project is C#.
- Some UI designs are taken as an example from dribbble and pinterest.
- Test tools are used to improve the application.
- Microsoft SQL Server will be used to design database which is a relational database management system that is developed by Microsoft. It can run on the same computer or on another computer across a network. From this approach, it provides developers to run in synchronism. In addition, SQL Server keep 4.1 billion records.
- Object Oriented Programming will be pursued for optime to adaptive application.
- Some libraries will be used for development which are located in Nuget Package Manager.
- Azure DevOps will be used for version control, reporting, requirements management, project management, testing and release management.
- To build this application, there must be a platform for mobile application development. Microsoft's Xamarin technology will be used to develop which is in Visual Studio. It is possible to develop a native application with Xamarin, so it is no more necessary to learn Java for Android devices or Swift for iOS devices.
- Visual Studio 2019 that is an integrated development environment from Microsoft will be used. The reason behind is that countless documentation exists on the internet. In addition to that, websites, web services and mobile applications can be developed simultaneously with different layers. It also supports HTML, CSS, JS and C# at the same time.
- .Net Core framework will be used because it supports cross platform development. If it is decided to develop project for Linux Operating System, .Net Core will be the best option which was build by Microsoft. In addition, .Net Core is open source for data access technology.

2.2 Economic constraints

- Optime will be published in Google Play Store to be downloadable by clients that uses Android devices. It will cost $25.
- The IDE and libraries are free.
- The server will be rented that contains data. All options will be analyzed to gain better profit.
- Clients should have Android devices or computers in order to use it because optime will be implemented for Android and Web.
- Cost of usable API services will be considered if any occurs.

2.3 Sustainability constraints

- Logs, feedbacks and comments will be collected via application to improve features of software.
- According the feedbacks and logs, system will be updated regularly.

2.4 Social constraints

- Optime will provide to share project tasks with team members. This way, the main goal that developers show others implementation progress and improve their own progress.

2.5 Language constraints

- The language of optime will be English.

2.6 Data constraints

- To test and train the application, some example data will be used for better progress.
- All data coming from the user will be protected in private database.

3. PROFESSIONAL AND ETHICAL ISSUES

3.1 Professional Issues

- Agile-Scrum development is adopted.
- The source code of optime will be shared in github.
- The project will be tested by a user weekly. This will help to find if any errors occur.

3.2 Ethical Issues

- Security is the major concern in the project. Project documents and tasks will not be shared with anybody else. Only team members can reach the project.
- Data of users will be used only improve the application. Users' personal data will not be shared with third parties.
- Minimum amount of information will be asked to client respect to privacy.
- Any advertisement will not be displayed for financial means.

4. REQUIREMENTS

4.1 Functional Requirements

In project management part, users should be able to

- reach information that belonging to the project as documentation which includes reports,
- provide to create project,

- share tasks with other users or team members,
- assign tasks to anyone else in the project team,
- shuffle tasks depending on deadlines and priorities,
- give a break between tasks according to the pleasure of user,
- take note to any task,
- give report of productivity analysis at the end of the week,
- change color of the task depending on priority.

In personal time management part, users should be able to

- divide big task to small tasks,
- define free times which is out of the working time for designing personal time,
- remind things that are not done for a long while,
- control repeating tasks,
- take note to any task,
- shuffle tasks depending on priorities,
- give a break between tasks according to the pleasure of user,
- change color of the task depending on priority,
- determine if task reduplicate.

4.2 Non-functional Requirements
4.2.1 Usability

- The system will be usable by students, businessmen, academicians, some companies, all ages and various groups of people. Because of that, it will be well organized in such a way that user errors are minimized.
- Any user can use the system after a minute of training.
- Optime will be have a user-friendly and simple user-interface for all of potential user types.

4.2.2 Reliability

- System can handle many numbers of usage at the same time.
- Optime will run without a failure. It needs to be stable.

4.2.3 Security

- The application needs to secure user information from threats.
- Private data stored in the application will be encrypted that it can not expose data in case of a cyber-attack.

4.2.4 Performance

- The system will have three main performance requirements which are response time, workload, and platform.
- Load time of the application should be low. Most of the response times will at most 0.2 seconds. Some features like upload a photo to a task may have longer response time like bigger than 5 seconds. In this situation, small feedback may be necessary. Response time can depend on users' internet connection status.

- Workload may vary to the system's server status which depend on the chosen system server and system's capability of supporting customers.
- The database should be optimized so that users can quickly and easily look for the information they can access.

4.2.5 Extensibility

- The application will be easy to maintain.
- It is available on multiple platform as mobile and web.
- To improve and modify the application, data examples will be extendable.

4.2.6 Portability
- Any device with android operating system will be able to run optime.
- It is also available on web. Users can reach it from any browser.
- The system can be updatable to add new feature changes.

4.2.7 Accessibility
- The application is designed for all kind of users who has android device or a computer. Optime has a small documentation tutorial about how to use it with visuals. Clients will be able to use application with any problem as complex information.
- Optime will be free to download by anyone in Google Play Store for mobile version.

5. MASTER FEATURE LIST

# of MF	Status	Details
MF 1	In progress	Project management and task management software interface design for web.
MF 2	In progress	Optime software interface design for mobile.
MF 3	New	Creation of database model in MSSQL Server.
MF 4	New	Multilayered architecture design of optime in Visual Studio IDE to working with different layers in the project.
MF 5	New	Connection between project on IDE and database model.
MF 6	New	Creating MVC Web Application on Visual Studio IDE.
MF 7	New	Implement Web Service to connect MVC Application with Xamarin Forms.
MF 8	New	Build Xamarin Forms to implement mobile application.
MF 9	New	Design task management algorithm to schedule daily/weekly/monthly.
MF 10	New	Implement and test notifications for task reminder on web.

MF 11	New	Code and test notifications for task reminder on mobile.
MF 12	New	Authentication system to login/register on web and mobile.
MF 13	New	Logging mechanism to find bugs.

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