



GUITAR TUITION

Project Proposal



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DATE: 04/11/2020



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Problem statement, project aims and objectives

I. Problem/Project statement

The goal of the project is to teach people of all ages how to start their guitar playing journey. As a self-taught guitar player, I had a hard time trying to get started and motivated as there were not many software, applications or even videos of how to play this instrument and other instruments in general. Although now there are quite a few options to learn how to play guitar, I personally do not find them extremely efficient: they either require a subscription or they do not have the right amount of information. What I intend to do with this project is trying to create something that is easy to understand by anybody and gives you at least a good base that you will be able to use to evolve further. The software/application will offer the user a tuition-like experience through 3D objects, animations, and other elements, educating them at the same time.

II. Project aims and objectives

The aim is to create a thought through project that is well-organised, designed and that fits well the proposed idea. Not only creating a project that will benefit others but that will help expanding my current knowledge and learning new skills, such as new programming languages or new software, during the developing time. The final result should be a user-friendly and easy to use application for every age group, making use of the visual world of 3D and animations.

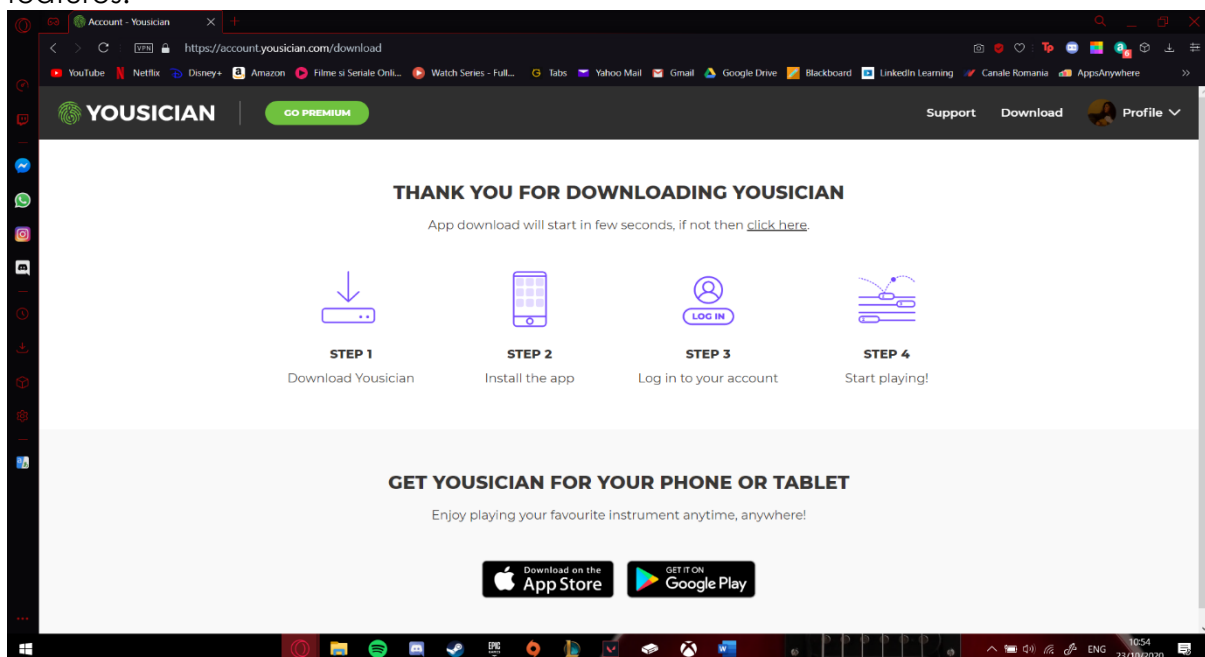
Objectives:

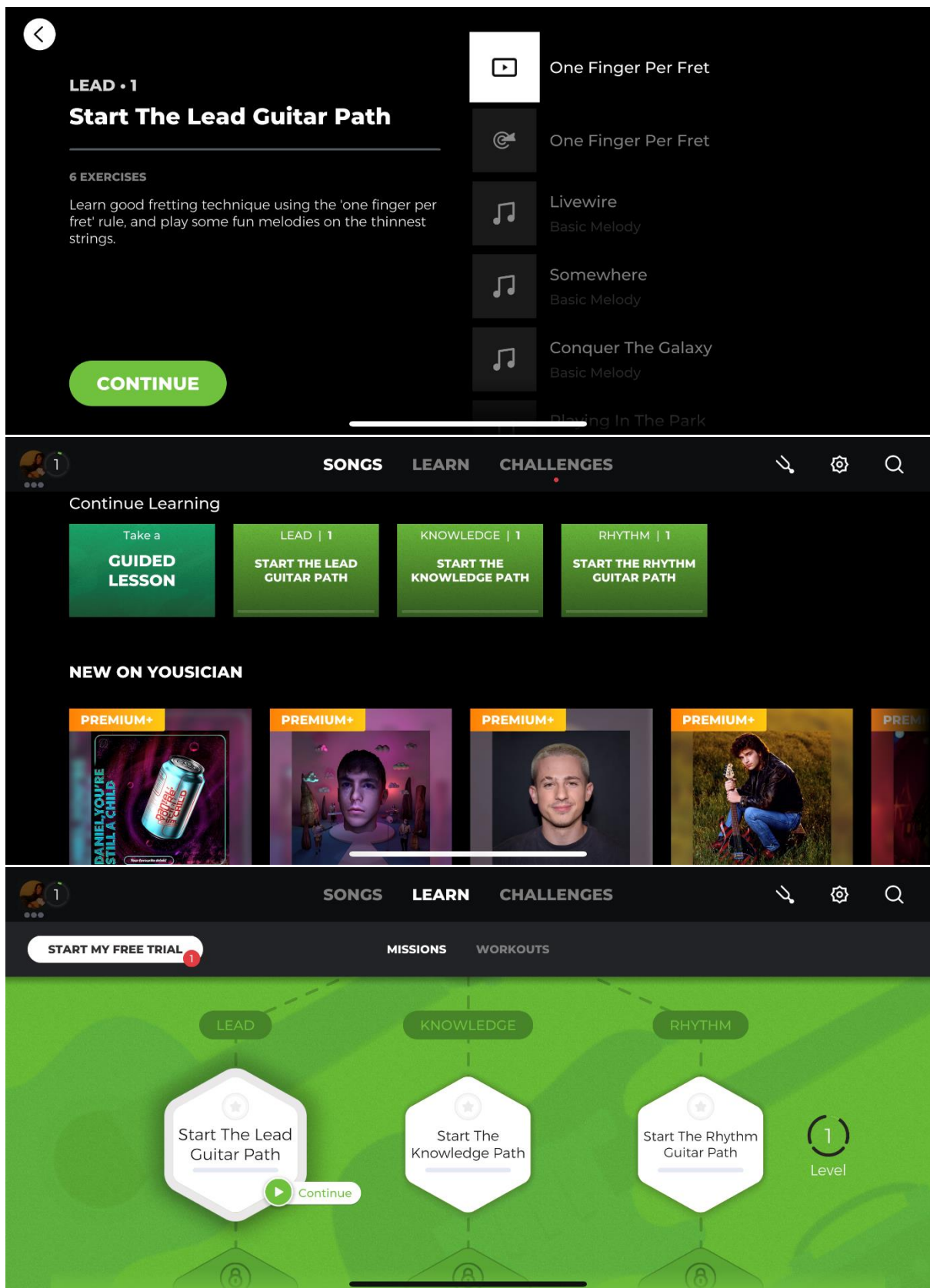
- Planning, deciding, and designing the project withing the timeline. Dividing the plan into different categories for easier time management and identifying problems.
- Researching features that guitar players found useful when learning the instrument.
- Learning C# and motion capture. I have some basic knowledge of C# that needs to be sharpened and afterwards motion capture in Motion Builder for animations and other effects.
- To test different software for the final product as the 3D Objects will be tested in Unity, 3Ds Max and Blender.
- Stick to the deadlines and the Project Planner.
- Obtain supervisor feedback on current work and use it to make changes that will benefit the final product.
- Testing different prototypes through questionnaires, asking people with or without guitar experience for their feedback.

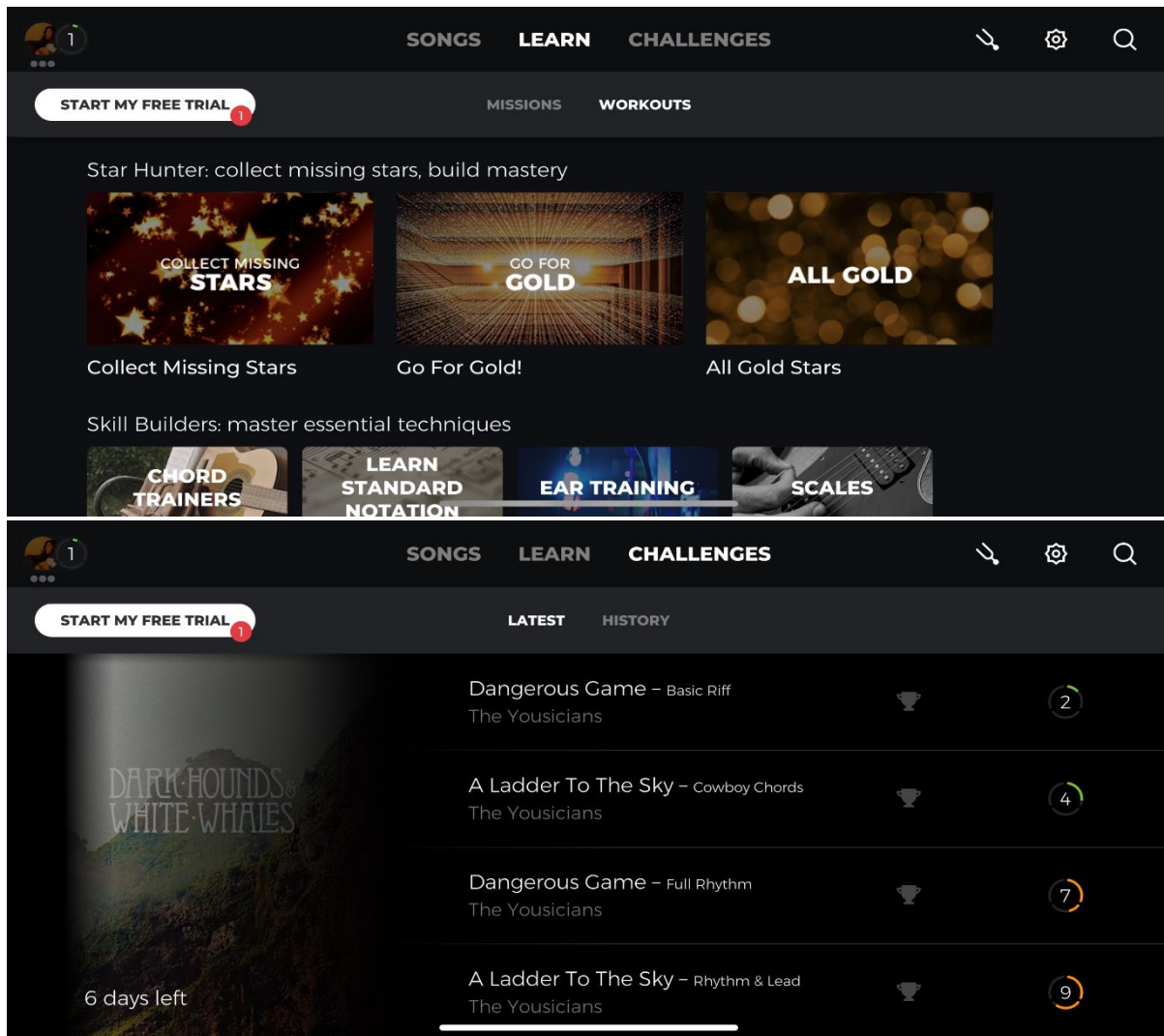
Background review: similar software/applications, or similar research

I have been testing a range of software/applications or other methods of learning guitar throughout the years and as I have mentioned above, they seem to lack a lot of features that to me are vital. I have chosen a few apps that I had a proper look at and that are more similar to my project.

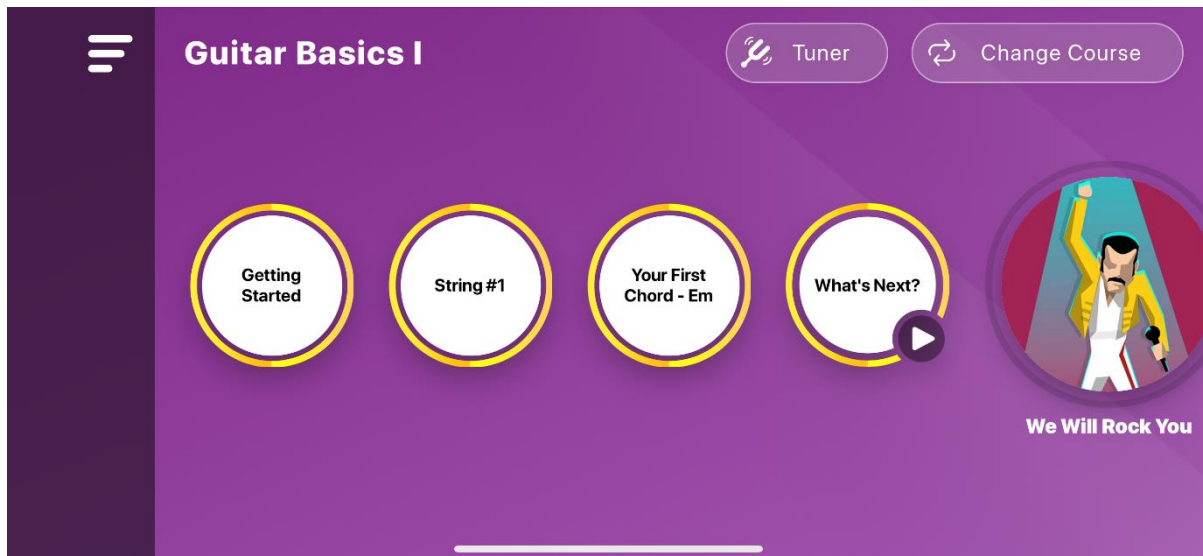
Yousician is a Finnish interactive music service to learn and play a musical instrument. The application is available on iOS, Android, Windows and macOS platforms, but I have only tested it on iOS so far. It has a nice design, simple with suggestive tabs and categories. It has 3 ways of learning which are **learning through songs** (for people that already know how to play), **learning through theory and workouts** (for people that are just starting or want to learn more) and **learning through challenges** (again, for people that know how to play and want to test their skills). The app itself has reminders for lessons, levels of difficulty for songs and lessons and a variety of songs that you can play or learn along with explanatory videos for certain techniques. I would say it has everything you need to get started or continue your training with the exception that you need to pay a subscription in order to use all of these features.



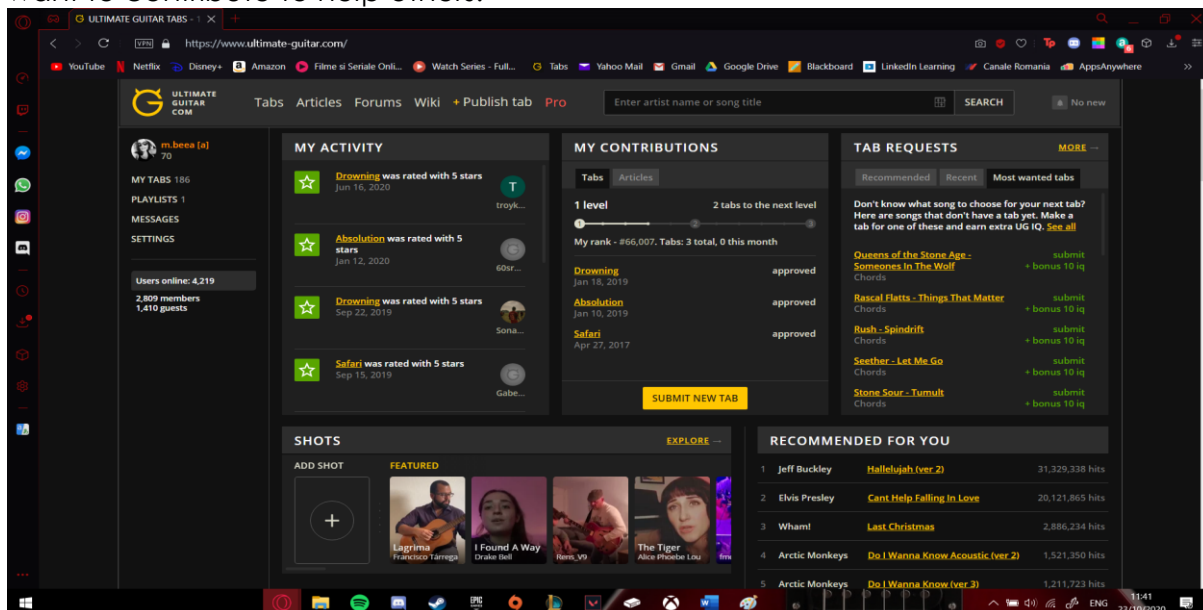




SimplyGuitar is a mobile app that teaches you guitar in a similar way to **Yousician**. Also, with a simple and straightforward design, **SimplyGuitar** offers you fewer lessons than the other apps and less features. Main problem with it is that if **Yousician** lets you play even if for a few minutes a day without a subscription, this one will not. You play the first introductory lessons and then you are required to pay.



Ultimate Guitar is the largest guitarist community website including guitar and bass guitar tablature, chord sheets, reviews of music and equipment, interviews with notable musicians, online written and video lessons, and forums. I have been using it ever since I started playing guitar and it has evolved since 2014 a lot. It used to be based around guitar only: chords, tablatures, and forums. It has a Phone version as well, but you need to buy the app, otherwise the web version is mostly free. It is quite different than the other similar applications I have mentioned as its purpose was just to offer music sheets and simply teach people guitar chords. It is not the best way of learning, but it is perfect for people that already have some knowledge and that want to contribute to help others.



These are just a few examples. There are other apps, blogs, YouTube channels that teach guitar, but my idea is to have a little bit of everything in order to create a complex yet simple application. I have created of table that makes a simple comparison between these examples and my project idea to summarise what I have been explaining above.

Tools and skills

Tools

Unity will be the “home” of this project and so the main tool. Other tools that I am planning to work with are: Motion Builder, 3Ds Max and Microsoft Visual Studios for the moment. I have a few alternatives for these tools in case the result does not fit with the project description. The animations can be done as well inside Unity and the 3D models can be made in Blender as an alternative to 3Ds Max. Blender is not a professional modelling tool and so if it will be used, it will be to create small objects or animations. Motion Builder is a new software I am learning and will be used to create the animations, it works hand in hand with 3Ds Max and that is why it is a perfect candidate for this project. Microsoft Visual Studios is the editor Unity uses for scripts coded in C#. With 3Ds Max I had the chance to use it last year in one of my module choices, it is not a new software but I still need more practice as I’ve done more work in Blender previously and the two are very different.

Skills

As mentioned before, C# is one of the core skills that I need to work on as it will be this project's programming language. Animations and modelling techniques need to be researched as well in order to have a better understanding and work at a faster and coordinated pace. At this stage databases knowledge won't be necessary, but later on as I'll add more features to the project, such as “Save progress”, I will need to apply my former databases skills acquired in the past two years of study. I have not planned any feature that will include mathematical or statistical methods so far but there can be space for them later on while developing the project.

Initial list of requirements

Functional:

- *The user will have access to the project through Unity.*
- *The user will be interacting with the project using the keyboard and mouse.*
- *The user will be able to pause/play the application.*
- *The user will be able to interact with multiple features.*

Non-functional:

- *Have arranged meetings with the supervisor once every two weeks. In order to get the necessary feedback and ask the essential questions, this requirement is a must for the project to be on the right track.*
- *Create a schedule to achieve the final goal. It is a good way of keeping everything clean and organised and for myself to manage the amount of time I need to spend working on every detail.*
- *To research the new skills the project requires and develop them further. C# is one of the most valuable skills that the project needs in order to function, although I have previous coding experience with C#, the bar needs to be*

raised as my knowledge is at a basic level and mostly borrowed from other programming languages.

- To research and practice motion capture and modelling techniques in Unity and Motion Builder.*
- Create different prototypes of the current stage of the project and apply the feedback received from the supervisor. A peer review realised through a form would be also necessary to get different perspectives of user's preferences.*
- Keeping up with deadlines and the goals I have set are vital.*

Essential:

- The project will be based on Windows 10.*
- The project will support Unity 2020.*
- The project will include responsive audio.*

Advanced:

- The user will be able to mute the audio.*
- The user can go back and forth the features displayed in the main menu.*
- The user will zoom in on the chord charts.*
- The user will zoom in on the animations.*
- The project will have a "Go back 10 seconds"/"Go forward 10 seconds" feature.*

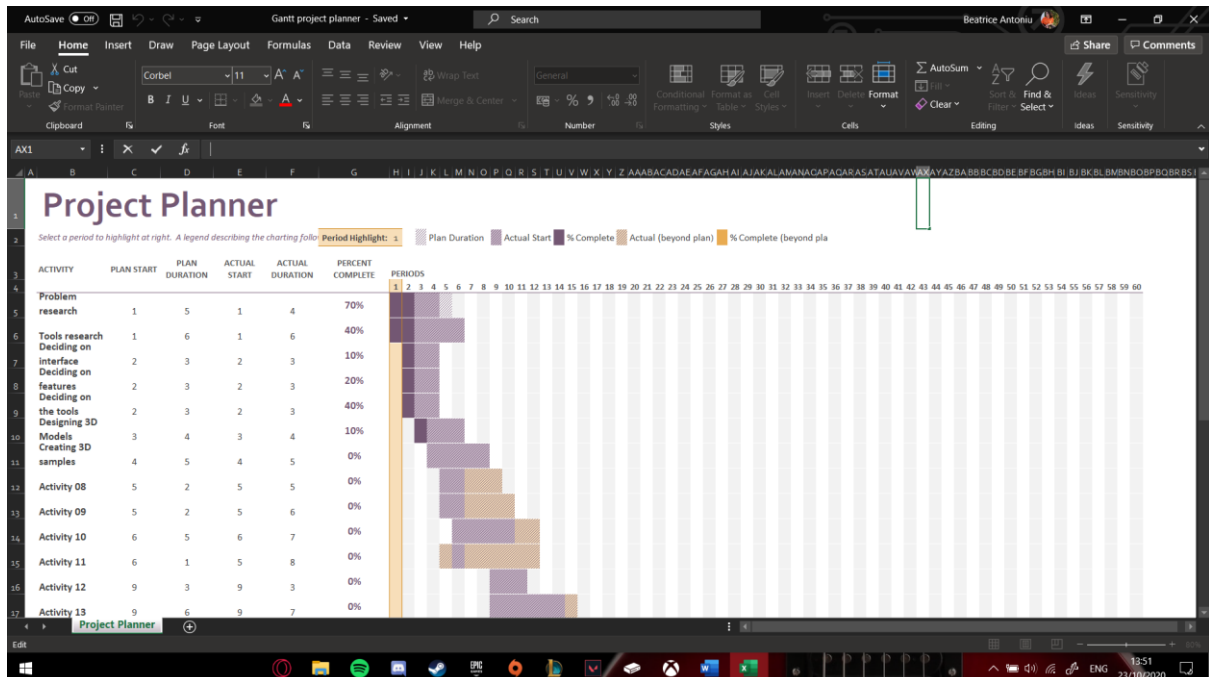
Luxury:

- The project will support all Operating Systems.*
- The project will work outside of Unity as a standalone application.*
- The project will have "Save Progress" feature.*
- The project will support user interaction during animations paly time.*

Challenges

- Extending existing technical skills
- Developing new technical skills
- Software evaluation
- Features evaluation
- Designs evaluation
- Apply the feedback received from the supervisor
- Keeping up with the planner
- Discovering and solving technical problems

Project timeline



The Gantt Chart is momentarily a sneak peak of the current plan. It will be more elaborated once the already listed activities will approach completion or be completed fully. The main objective is to have a strong vision of the project in mind by completing the first six activities. There is still a lot of research for the design and the features of the project that I am working on, as well as extra tools.

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