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| **CS102** | **Fall 2020/21** | Project Group | 1d |
| Instructor: | **Uğur Güdükbay** |  |  |
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| **Criteria** | **TA/Grader** | **Instructor** |
| Presentation |  |  |
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| Overall |  |  |

~ Sustainibility Coach ~

SavioursOfTheGreenWorld

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| Requirements Report  ( volume one )  20 October 2022 |

# Introduction

This project, named Sustainability Coach, is a coaching program that guides users to  [pursue](https://tureng.com/tr/turkce-ingilizce/pursue) an eco-friendlier life style. The main objective is to change living habits by gamification and a mild social competition. In simple words, the project consist of three connected parts. First one is a list of daily achievements supported by a reward system. The second part contains a forum where users can comment on news related to environment and discuss. The third part includes a news section where admins can enter news that users comment on or share. The connection between these parts are explained in the next section. The user will have to eventually verify all the tasks they have done themselves, that being said, we do not check whether the user cheats in the program. Gamified Sustainable Life Style coach will help the environment and contribute saving the green world. After all, we are all Saviors’ of the Green World. Hence we, the developers, are working on this program to remind our individual effort can make a world more livable habitat.

# Details

## Project Topic and its Importance

World is warming with acceleration according to statistics. There are fierce debates about the effects of climate change. Disasters and havoc are taking toll on every continent due to excessive disruptive human activity. Farms are being destroyed and people are being forced out of their homes. So much is happening unnaturally due to by products of human activity. The political debate whether we should care for the planet or not has become whether who will pay the price of the ignorance. Policy makers are discussing the steps that should be taken by their governments and their successors. Mass debates are happening around the world on how to solve the climate change issue. From causing a artificial volcano explosion blocking the sun rays which would decrease the hot house effect, completely disregarding the earth and heading towards the space (Mars it seems in the short term).

But we believe every incremental change will have an effect that will cascade and grow. From the repetition of the individual some thinking styles becomes the mindset of the whole generation. Thus, by at least providing ways for people to become helpful for the planet, we decided to make Sustainability Coach. So, with the app, everybody will have at least the opportunity to learn how to live sustainably. Our app solely intends educating people to live more sustainable.

…Here explain the importance.

## Differences and Similarities to Existing Projects

There are three main mobile apps that are similar to our project in serval regards. These are Duolingo, Fabulous Daily Routine Planner (abbreviated FDRP for convenience) and Dr. Wolf. The common feature of these apps is that they guide users to do better in some topic. The topic is learning a language in duolingo case, life habits in FDRP case and chess in Dr. Wolf. Only the features of apps that are relevant to our project are listed. The layout of douolingo and its concept is similar to our project. The objectives are ordered from easy to difficult and the user is rewarded by points. It also has streak feature where if you do the tasks daily, you are rewarded. Heart feature allows user to do five wrong attempts, which prevents tasks to become trivial by trying countless times and not learning anything. It also allows to share progress. FDRP first conducts a survey on the user and then helps to set up personal goals like drinking water. It does so by telling a story. The common and relevant feature of duolingo and FDRP is that they remind the user do the tasks daily. The last one is a bit different. It coaches the user to do better in chess. The relevant feature to our project is that there is an NPC (non-player character) who talks to the user. These listed features could be added to our project though our project is more likely to be a computer program than an app.

Differences between Duolingo, FDRP and Dr. Wolf is that all these apps targets personal development. Ours is about the globe. The motto could be “Not development for self but for the globe.” So it is more of a social issue. Thus, social forum and news feed are possible in our case. In that forum people will comment on and discuss about news regarding the planet. News will be supplied by the app. These features are not part of the apps listed.

## Technologies and Libraries Used

Java: Our project will be written in Java. Therefore, Java will be used in most of the program we will create.

AWT (Abstract Window Toolkit) and Swing: Since the desktop software of our project will be written in Java, we will use these GUI tools for graphical interface.

Python: We will use some of the Python libraries such as Pandas and NumPy for data manipulation and management.

SQL: To store, manipulate and use the data, we will use SQL. (MySQL)

DALL-E: Our project will contain lots of visual elements such as images and graphics. At this point DALL-E will help us to create interesting images using AI.

MATLAB and Python: For graphics and visuals of our project will be created by using MATLAB and some of the Python libraries, like Matplotlib or Seaborn.

Python and Java: Since Python has a lot of machine learning libraries, we will use Python for machine learning parts along with Java. We will mainly use scikit-learn, NumPy, Pandas, Matplotlib and Statsmodel for Python part and we will use Apache Spark’s MLib.

Swift and Xcode: For devices who runs iOS and İPadOS, we will use Swift Programming Language and Xcode IDE to write codes with Swift.

Android and Android Studio: For Android devices, we will use Kotlin and to write in Kotlin Language we will use Android Studio IDE.

HTML, CSS, and JavaScript: We are planning to create a website for our project, so we will use HTML, CSS, and JavaScript to code frontend of our website.

Node.js: For the backend side of our project will be written in JavaScript, so to do this we will use Node.js framework.

GitKraken and Git: Since we are working as a group, we should collaborate to complete the project. To accomplish this, we will use GitKraken and Git to control our project.

## The final product

The main objective is to change living habits by gamification and a mild social competition. Three parts of the projects are as follows. First part is a tree of daily achievement that will be completed one by one. As an example List of achievements includes using public transportation instead of personal car or using your own thermos instead of a plastic cup in the coffee shop. We are assuming the user is well informed about himself which is the case in most cases. Hence they will provide self-validated information to the program where they will be rewarded. So, why would anyone interested in providing true information? To overcome this problem we would like to in-game tokens which will be digital gold. We plan to have basic anomaly algorithm that detects random inputs. So that, the penalized scores will motivate players to do their best to be honest. The other user type who is honest all the tine doesn’t need any check. User completes tasks and reports it to the program. Then program gives points or tokens. The goals are drawn in a three diagram where objectives get more challenging, and achievements are sorted according to their content. But, this application is a gamified way of improving habits so we are not detrimentally focused on decreasing the cheating rates. The one who will cheat is not our concern because they do not concern being honest at all. Our aim is to raise awareness and help forming habits for the users.

The second part is a forum where users can comment on news related to environment and discuss. People’s ranks that they gained through achievements are displayed in this forum next to their names. Their ranks also displayed in an online list in the forum. The third part is a news section where admins can enter news that users comment on or share. The news are not published by everyone due to quality and [disinformation](https://tureng.com/tr/turkce-ingilizce/disinformation) concerns. Admins are again users but they have additional responsibilities.

## Our projection

# Summary & Conclusions

And finally… don’t forget that Word can help to check your spelling (and grammar!)

Maintaining lists of research references that can be reused when writing journal articles can be a real pain, especially when citation styles vary so much from journal to journal. When you have time I suggest you look at reference managers (e.g. JabRef for BibTeX, or websites such as CiteSeer), as well as other document creation options (e.g. LyX, LateX and OpenOffice.)

Good Luck.