The initial stage of developing a Habit Tracking (Conception phase)

The main aim underlying the development of this software application is to observe and evaluate user behaviors. The habit tracking tool possesses the potential to function as a highly advantageous implement for individuals who are desirous of instituting fresh routines or overseeing their existing habits. This particular instrument empowers users to institute their habits, oversee their advancement as time progresses. Furthermore, the software facilitates the generation of progress reports. The information collected is stored in a SQLite database and the program provides a straightforward command interface, as well as habit analysis. The creation of this software has been executed with by utilizing the Python programming language(version 3.10). Throughout the course of its development, different Python libraries have been carefully chosen and employed according to specific requirements.

Functionality:

The functionality of this software is as follows: initially, users are prompted to provide their username, surname, and password. Subsequently, the user-provided information is securely stored within the designated database. It is mandatory for the username and password to consist of a minimum of four characters. Furthermore, these characters must exclusively comprise alphabetical letters, with numerical inputs being strictly prohibited. Before the storage of this information in the database, the initial letter undergoes a transformation to uppercase, while the remaining characters are modified to lowercase. The objective of this undertaking is to facilitate the user's ability to access their information in the database without encountering any issues pertaining to the differentiation between lowercase and uppercase strings that were previously entered. This enables the user to easily locate their data for purposes such as monitoring or editing their profile. If, indeed, the name and surname of the user have already been stored in the database, the program takes measures to avoid redundant storage of the same name and surname. Upon inputting the designated username, surname, and password, the program proceeds to prompt the user for selection among five categories of pre-established habits. The decision to adhere to these habits on a daily or weekly basis is ultimately at the discretion of the user. In both instances, the user is given the option to either accept

or decline the suggested habits. Following this process, the program inquires whether the user wishes to incorporate an additional habit, which can be either on a daily or weekly basis. This data is documented in the database, clearly, in the previously mentioned scenarios, the software will also prompt the user for the designated timeframe in which they desire the habit to cease. Subsequent to the event of a user successfully logging into the system, subsequent to the action of inputting their distinctive username and password, the person shall possess the ability to perceive the current state of their corresponding routines and exhibit the advancement percentage for each one. Moreover, the program has the ability to integrate new behaviors into the system, as well as eliminate existing behaviors or manually terminate a behavior. Additionally, it is possible to modify one's username, password, and last name. Users also have the ability to assign a given schedule as "finished" for a specific day, or access the condition of a time-based routine.

Additionally, in the event that a user desires to input the same habit on two occasions, the program will take measures to prevent this occurrence. This program comprises of two primary classes featuring built-in functions, as well as numerous functions stored separately in distinct files. The objective of this approach is to facilitate the identification of errors and allow for modifications to be made to the functions as required. Naturally, these functions are invoked by the internal functions of the classes and their resulting values are utilized. By implementing a specific date, the user has the ability to observe the actions executed subsequent to that particular date. A visual representation of the program is depicted in the figure.

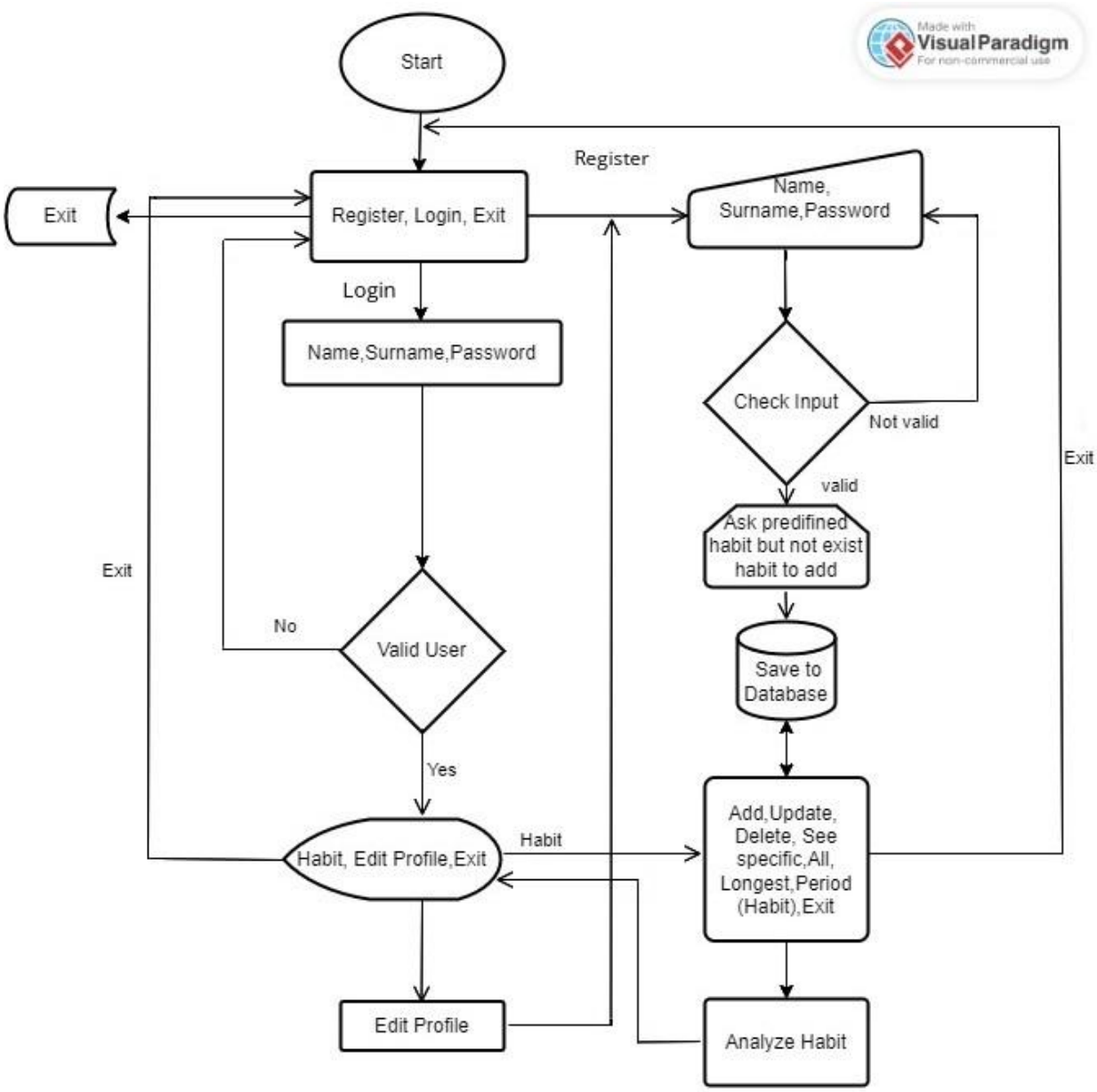

Figure 1 : Flowchart of the habit tracking program