

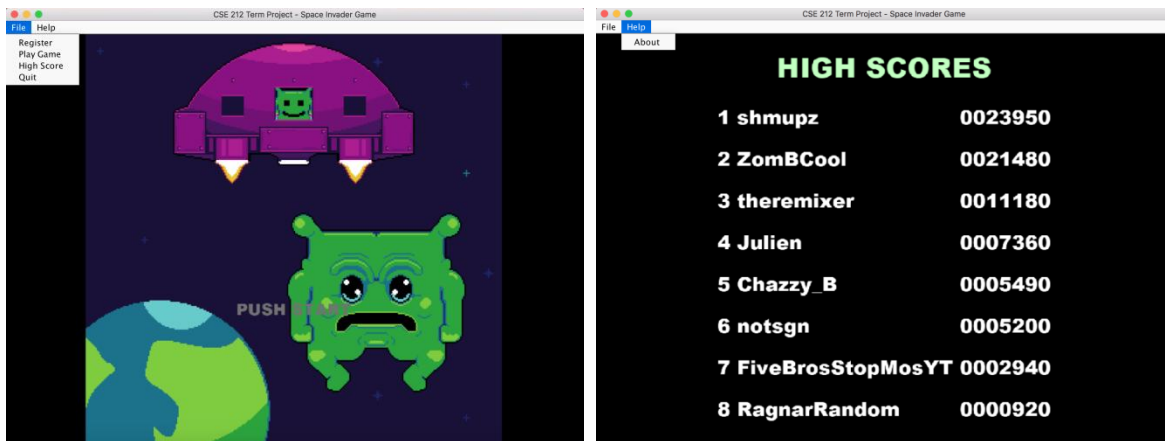
CSE212: SOFTWARE DEVELOPMENT METHODOLOGIES

YEDITEPE UNIVERSITY

SPRING 2023

TERM PROJECT – DUE DATE JUNE 2ND, 2023

As the term project, you are required to develop a *Space Invaders* game similar to 1980s arcade games. Your application should be able to keep scores of users and store them on a file. For this purpose, the users should be required to register with a login name and a password, and to log in prior playing the game. The game should be simple and easy to use with the help of the keyboard.



(a) (b)
Fig. 1: (a) Welcome Screen; (b) High score screen

You can use the following statements and figures as a guideline:

- For usability purposes, you are required to implement a graphical user interface (GUI) for your application.
- Your application should have a welcome screen (see Fig. 1a) which will contain a task menu (*File, Help*).
- The About (*Help->About*) option should pop-up a small window that contains information (*Name, Surname, School Number and Email*) about the application developer (Fig. 1b).
- In the case of a *Registration* request (*File->Register*), a window should pop-up to collect the user details (*username; password*).

- When a user would like to play the game (*File-> Play Game*) s/he should be forwarded to a login screen, where s/he is asked for username and password that was used to register initially.
- As can be seen in the example screenshots (Fig. 2), the player should be able to see the number of lives left in the game on the top left side of the screen.
- Every player should be given 3 lives at the beginning of the game.
- The game should keep score for every alien that is hit (10 or 20 points per hit depending on the alien type) and eventually calculate the players overall score. The score should be shown at the top centre of the screen (Fig. 2).
- The players should be able to see the score board using menu item High Score (*File->High Score*). The content of the score board should be stored on a flat (text) file.

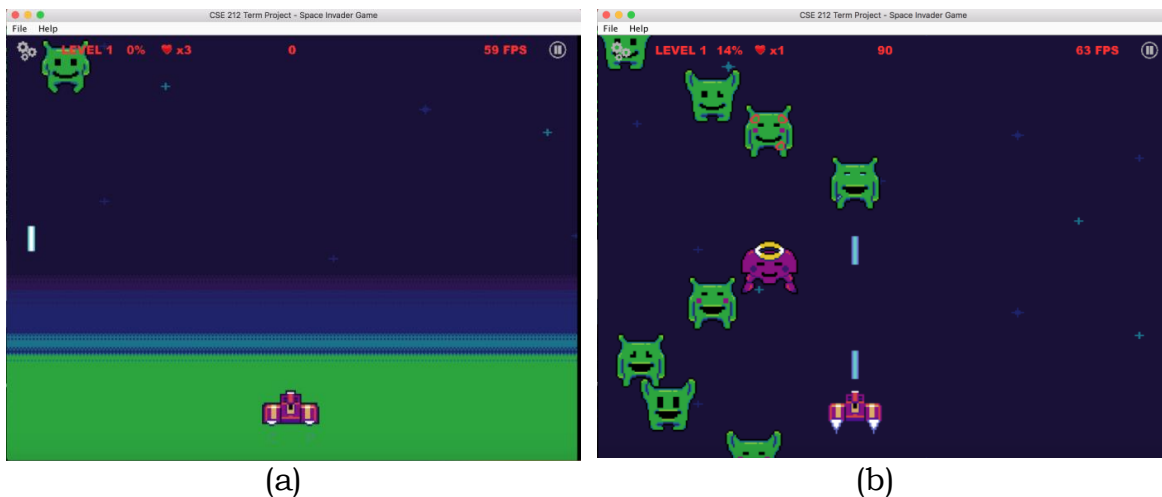


Fig. 2: Example game screenshots

- The game should have at least three levels – Level 1 (Novice) - Level 2 (Intermediate) - Level 3 (Advance). By the increasing level numbers, the number of aliens on a given screen should increase and the movement speed of the aliens should be faster.
- Last but not least, if a player would like to exit the game should click on the relevant menu item (*File->Quit*).
- If you make the aliens static you will get full mark.

- **[BONUS]** The application should play relevant sounds after each event during the game.
- **[BONUS]** The game should also be controlled by mouse movements and mouse buttons.
- **[BONUS]** If you make the aliens animated you will get bonus mark.

NB #1: Video representation of the game could be found at the following link:

<https://yulearn.yeditepe.edu.tr/mod/resource/view.php?id=159674>

NB #2: GUI element of the space object could be cropped from the images provided at the following link:

<https://yulearn.yeditepe.edu.tr/mod/resource/view.php?id=159675>

Submit your assignments in a zip file, which has your name_surname_studentNumber as name, using YULearn (<https://yulearn.yeditepe.edu.tr/>) by the end of Friday, June 2nd, 2023. All submitted source files will be checked for plagiarism among classmates and with any existing open source code available on the Internet. Furthermore, all students will be required to demonstrate their work for 15 minutes. DO NOT submit somebody else's work.