Gebze Technical University
Department of Computer Engineering
CSE 241/505
Object Oriented Programming
Fall 2020
Winter Project
Due date: March 15th 2021

In this homework, you will design and implement a HexGame with GUI as an Android application. You may use an Android Software Development Kit (SDK) as an emulator for your program, however your demo will be on an Android device. You will implement your program by using java programming language as usual for Android operating systems.

Your Hex Game program will do the followings;

1-) It will be a game that can be played in Android environment. A popular app is https://play.google.com/store/apps/details?id=com.game.hex&hl=en&gl=US , which can be used as an example for the interface.

2-) The computer (or user2) makes a new move and draws the board again as the same as you did in homeworks. In this project, however, the move should be legal and you must make it "smart". You may use the minimax algorithm to make the moves smart. The parameters for the minimax algorithm (easy, nominal, difficult, and master) and the parameters for the game (size, colors, who starts first) should be adjustable thru the interface. Note that you will need heuristic board evaluation functions, which will be very important for the whole system. A good place to start learning about minimax is https://towardsdatascience.com/how-a-chess-playing-computer-thinks-about-its-next-move-8f028bd0e7b1. You may use open access code this part of the project.

3-) In the implementation of the project, follow all OOPL rules and principles that we learned in the class.

- Inlcude all features of Hex Game developed during the semester in your android application.
- Throw exceptions, handle them and write code to test them.
- Test each method of each class at least once by writing driver code.
- Do not forget to indent your code and provide comments

4-) Prepare a report that includes all of your work such as game screenshots, our heuristic utility function, pseudo code of your algorithms, etc., for the project.

5-) You will make a demo at the beginning of the semester, and this project will be counted as one of the projects of Data Structures and Algorithm class.