German University in Cairo
Media Engineering and Technology
Prof. Dr. Slim Abdennadher

Computer Programming Lab, *Spring 2018*
Empire building: **Milestone 3**

Deadline: Sat 25.06.2021 @ 23:59

In this milestone, you are required to implement the GUI to be able to play the game.

1   General Guidelines

- The effects of any action performed in the GUI should be reflected in the engine and vice versa.

- The action that is currently happening in the game should always be clearly indicated in the GUI.

- Make sure to handle all exceptions and validations for any input or action performed. In case any exception implemented in the second milestone arises the player should be notified and the action should be prohibited and another action should be chosen by the player.

- Using a window builder or any other automated GUI creator **is not allowed**. Submissions using a window builder will receive a **ZERO**.

2   Game clarification

- If the food needed is equal to the player's food, this means the player has enough food so he shouldn't lose units.

- You should calculate the total food needed of all armies including the defending armies of all cities controlled by the player.

- You check decrement the food for all armies first then check if the food falls below zero.

- The deduction should be across all the units inside all the armies of the player.

- The turns under siege should never exceed 3, which means if it reaches 3 the player should be asked to choose between auto-resolve or manual attack and the city shouldn't be under siege.

- The defending army of any city shouldn't be added to the controlled armies.

- If an army occupied a city, it should be removed from the controlled army.

For more concerns, please check the posted solution.

3   GUI Requirements

The requirements that should be covered in the GUI are explained below. You will be graded based on the requirements detailed in the following checklist:
`https://goo.gl/A9EKV9`