King Fahd University of Petroleum and Minerals
College of Computer Sciences and Engineering
Department of Computer Engineering

COE 451 – Computer and Network Security (T202)

<u>**Mini-Programming Project-Phase I**</u>
<u>(due date: **Sunday 14/02/2021 by 11:59 PM on Blackboard**)</u>

LATE SUBMISSIONS WILL NOT BE ACCEPTED

<u>**Description:**</u>
Build a two players **client-server** *Tic-Tac-Toe game* application using any programming language of your choice. The application need NOT have a GUI. The application **must use TCP** as a transport layer to ensure reliability. It is <u>preferable</u> that the application allows only two players to play directly against each other over a network such that one player acts a **client** and the other acts as a **server**. Setting the application in this fashion simplifies the implementation of the remaining two phases of the project.

You may use any *Tic-Tac-Toe game* application source code that you may find on the Internet, but **you must provide the website URL from which you obtained the source code**.

Make sure to understand the code very well, and to test it <u>preferably</u> using 2 virtual machines (one for the client side of the application and one for the server side of the application). You can use either *VirtualBox* or *VMware* to set up the 2 virtual machines.

<u>**Deliverables:**</u> Submit the following items to Blackboard before the due date:
1. A **well commented source code** of your implementation. If you acquired the source code from the Internet, then you may need to add additional comments to the code to make more readable.
2. A **short soft copy report** that shows <u>screenshots</u> of your testing of the application that clearly displays the execution and the networking aspect of the application (make sure to provide screenshots of the IP addresses used for testing the client and the server sides of the application).
3. A **step-by-step readme file** that explains <u>what is needed</u> to execute your implementation and <u>how to execute and test</u> your implementation.

If you acquired the source code from the Internet, then make sure to include the website URL from which you obtained the source code. **Failure to do so will result in losing all marks of the 3 phases of the mini-project!**

<u>**Grading Scheme:**</u>

Program readability and comments	**[15 points]**
Step-by-step readme file	**[15 points]**
Softcopy report with screen shots	**[20 points]**
Program executes correctly over a network	**[50 points]**
Total	**[100 points]**