**Technical Documentation**

**UML Supporting Tool**

Lucidchart: This is used in designing the object diagram which expresses the object combinations of the class diagram.

Visual Paradigm: This is used to design the class diagram that describes the structure of the chess game system and the sequence diagram that shows the sequence of object interactions of the use cases.

StarUML: This is used for designing use cases diagram which illustrates the relationship between the use cases and component diagram describing the component within the chess game software system. It was also used to design the deployment the diagram which describes the hardware within the overall architecture of the system.

**Programming Language**

GUI: Js, PHP, Jquery, Html, and CSS was used to implement the graphical user interface of the chess game system.

Database: SQL was used to implement the database because the cloud server (Azure) database only use SQL language.

**Reused Algorithms and Program**

We reused codes and program from "David Washington" to create a real-time multiplayer chess game using socket.io.

Chess: This program was used in developing and implement the chess game from Jeff Hlywa (jhlywa@gmail.com) Copyright (c) 2017, All rights reserved.

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ChessBoard: This program was used to implement the chessboard and the pieces from Chris Oakman copyright 2013.

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**Software Tools and Environments**

Node.js: This is an open-source library that uses an event-driven and non-blocking Input/Output model which makes it efficient and effective. The application used Javascript and asynchronous programming on the server.

Visual Studio Code: It is used for editing codes and optimizing it for building and debugging the web-based application.

Bracket: It is a modern text editing application that was used for writing and editing codes which made designing easier and lightweight.

Microsoft Azure: This is a cloud computing used to build, test, deploy and manage applications. We published our server to Azure using GitHub. Azure acts like our localhost

Github: The application was used for communicating, discovering, sharing and building the web-based chess game.

**Database Management System**

