SYST 17796 DELIVERABLE 1

DESIGN DOCUMENT TEMPLATE

OVERVIEW

1. Project Background and Description

Players of the basic two-player War card game compare the value of their drawn cards. The round's winner with the greater value card takes both cards. Should both players draw cards with identical value, a "war" takes place whereby extra cards are chosen till a winner is decided. The game keeps on until one player gathers every card.

Base Code Description:

The provided base code impleemnts the fundamental blocks of the War game. It includes:

- Card class: Shows one individual playing card.
- Deck class: Manages a 52 card shuffled deck.
- Player class: shows a player together with their card queue.
- WarGame class: Manages game player, includ card comparison and war scnario.

The code designe in Java and work with object-oriented programming (OOP) principles.

2. Project Scope

Team Members & Roles

- [Jay Patel] - Development
- [Jasleen Kaur] – UML Class Diagram
- [Lakshit] - Documentation

Technical Scope

Designed to let two players engage in a turn-based game of War, the Java console-based card game is Following object-oriented programming ideas guarantees modularity and maintainability in the application. Each player chooses a card from their deck, and the game decides the winner of a round depending on card value via a command-line interface, therefore organizing player interactions. Should a tie, the system implements a "war" situation whereby more cards are selected and matched until a winner is decided. The game keeps on until one player has gathered all the cards, guaranteeing a whole gaming cycle. In this regard, the game ends when every participant has gotten a card. After that, the cards are compared to decide the round winner at the end of this process.

The architecture consists in a Card class to represent individual cards, a Deck class to handle card distribution, a Player class to manage every player's hand, and a WarGames class to control the general game flow.

The system is a console-based card game that:

- lets two gamers engage in War.
- Sort the drawn cards to find the round winner.
- manages "war" situations whereby players draw more cards.
- names the winning player by determining who of the two players has the highest card.

3. High-Level Requirements

The game must:

- Two players to play War.
- Handle card comprisons and determne round winers.
- Manage the "war" scenario when equal-value cards are drawn.
- Announce the winner.

4. Implementation Plan

Git Repository

- Repository URL: **https://github.com/pateljay7018/SYST17796-Group-10.git**
- Tools IDE: NetBeans
- Coding: Java

5. Design Considerations

Encapsulation

- The Card class has private characteristics such suit, rank, value with getters.
- The Deck class only permits controlled access using methods and maintains the private list of cards.

Delegation

- The WarGames class assigns actions to the Player and Deck classes.
- The Player class guarantees correct card retrieval and controls the hand of the player.

Flexibility & Maintainability

- The code is set to let simple changes—like including other card games—easily possible.
- Other card-based applications can make advantage of the Deck and Player classes.

6. UML Class Diagram