**1.Project Background and Description**

Our team is doing Go Fish game as our project. The goal is to create a game similar to Go fish with the coding and other technical stuff we learn throughout the term and the final. The vision of our project is to successfully create this game which allows users to play the game and to make them feel like they are playing the actual game even though it is not with the real cards.

RULES:

* Can be played by 3 to 4 Players. (only one deck)
* The dealer (dealer is selected randomly) distributes 5 cards among the players and the rest of the cards are kept as a pool.
* First turn goes to the player next to the dealer.
* Player A can only ask for a card to player B if player A has the requested card in hand.
* If the player A asks for a card to player B but player B does not have that card, the player B says, “Go Fish”. Then after, the turn goes to player B. If player B has the requested card, player B gives all of the cards of the rank that is requested.
* If the player runs out of card, player picks up five cards from the pool. (remaining cards) if there are no cards left in the pool, then the player is out of the game.
* Once a player gathers all the cards of a book (four of a kind), the player must place it down and reveal the cards in front of other players and earns a point.
* The player who gathers the most books (four of a kind) when the card pool is finished wins the game.

The current base code has 4 classes namely Card, Game, GroupOfCards and Player. Card class creates a deck of card for the specific game. GroupOfCards class sets a group of cards does different methods such shuffle the cards, shows all the cards in the group and set and get size of the group. Player class creates the player of the game like sets their name/Id and play the game for the specific player. Game class gets all the information about the game and lets the program to start the game using play method and also declares the winner.

Here, all the classes will follow naming convention as all the identifiers such as class, methods and variable are given a reasonable and proper name according to the coding.

**2.Project Scope**

The card game project will provide the users an experience to play in a personal computer in an easy and enjoyable way. The game will be a human-machine interface in which it will operate through a personal computer using a keyboard. The game will provide player interactions with tactile and visual senses capable of displaying graphics. This game can be played offline but with the possibility of improvement of playing online in the future.

As part of the team, Gilbert and Deep will divide the work accordingly and will take the responsibility of doing but not limited to base coding, updates and improvements(debugging), test runs, and documentation. All work of will be in accordance with the group contract. The project will have a 5 to 6 weeks timeframe and it will be deemed finished once the desired outcome stated from the rules of the games are met.

**3. High-Level Requirements**

The project includes the following:

Game

* Ability to identify the player who has the turn and show card in hand
* Ability to hide card in hand for the other players
* Ability to keep track of the players score
* Ability to keep track of the remaining deck of cards in the pool
* Ability to determine a win or a loss

Player

* Ability to register and identify each player
* Ability to play with multiple players (2 to 4 players)
* Ability for the players to be the dealer

**4. Implementation Plan**

The git repository will be used on a weekly basis where all the members will be able to checks and updates the code with all the new information that they learned throughout the week and also reviews the updates of the member and suggests if any further change is necessary. Our team intends to follow naming convention and to add comments why and when they updated the code so that it becomes easy for other team member to review their code. We intent to use NetBeans and VP for our entire project.

**5. Design Consideration**

Encapsulation

The current base code follows this principle as data fields in all the classes are set to private and setters and getters are created for them. For instance, Player class have name as data field and it is set to private and setter and getter is set for this data field. Similarly for Game and GropuOfCards game data fields are set to private with setter and getter implemented for them.

Delegation

In GroupofCards class, the showCards method delegates Card class as the ArrayList is made of type Card. Similarly, in Game class setPlayers delegates player class as the setPlayers uses Player as a type for Arraylist

Maintainability

The base code is maintained properly as throughout the code proper indentation is followed which makes the code easier to read and also the code is simple so that is becomes easy to modify the code and proper documentation is followed so that it becomes easy for the person modifying the code. For instance, in Game class comments are added of what this class is supposed to do so that it becomes easy for others to modify this particular class. Similarly, for every methods comments are added so the modifier knows what the method is for and thus modifies the method accordingly.