



Board Game by Team 12

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1. Introduction:

Quests of the Round Table is a Board game designed by Scott Kimball and published by Gamewright. The game comes with two decks of cards. The story deck determines what happens on each player's turn; a quest, a tournament, or a special event. The adventure deck holds the allies, foes, weapons, tests, and amour cards which get dealt and drawn into players' hands. Players begin the game as squires with a lowly battle strength of five and, by earning shields, try to be the first to progress through knight and champion knight to become a knight of the round table

1.1 Motivation

Outlined in this document are a brief introduction to the project, functional and non-functional requirements for the software, as well as use cases and assumptions made throughout the process. A proposal for the game's interface is also given.

This project aims to transform Quests of the Round Table into a networked multiplayer game, allowing people to play at distances using their computers. The official board game rules will be followed, with additions to accommodate network play on the computer platform. Therefore, the modelling process of coming up with requirements and use cases would be necessary in building a solid program

2. Game Rules

Below are scanned pages of the official game rules for Quests of the Round Table. Pages that were irrelevant to the project, such as two-player games, became omitted.

Each section has been given identifiers to use with requirements traceability, which can be seen as boxes next to the appropriate section. The notation for the identifiers, which will be used later on, begins with GR (Game rule).

QUESTS OF THE ROUND TABLE

GR-01

Object of the Game

The goal of the game is to be the first player to become a Knight of the Round Table. A player raises his rank by successfully completing "Quests" and defeating other players in "Tournaments." A player receives "Shields" for each successful Quest and each victory in a Tournament. A player starts with the rank of a Squire, and as soon as he receives enough Shields, advances in rank to become a Knight, and then a Champion Knight. When a player earns enough Shields to become a Knight of the Round Table, he wins the game. (Note: In these directions, "he" always means "he or she.")

GR-02

Game Components

The game components consist of Shields and three separate decks of cards: the Rank Deck, the Adventure Deck, and the Story Deck.

GR-03

The Shields

There are four sets of differently marked Shields. Each set consists of ten identical Shields. The players earn Shields for victories in Quests and Tournaments and in some Events.

GR-04

Rank Deck

There are three kinds of Rank Cards: Squire, Knight, and

Champion Knight. One of these cards is placed face up in front of the player to show his current rank. A player can have only one Rank Card face up at any time. As a player advances in rank, he hands in the card for his previous rank and takes the card representing his new rank.

GR-05

Adventure Deck

There are five types of Adventure Cards: Foe Cards, Weapon Cards, Ally Cards, Amour Cards, and Test Cards. Twelve Adventure Cards are dealt to each player at the beginning of the game. Adventure Cards are drawn, played, and discarded throughout the game.

Foe Cards are used to challenge your opponents during Quests.

Weapon Cards may give extra strength to a Foe, and they may increase your Battle Points when fighting a Foe during a Quest or fighting other players during a Tournament. The number of Battle Points provided by a Weapon is printed on the card.

Ally Cards represent characters from the legends of King Arthur and his court. An Ally gives you extra strength during Quests and Tournaments. Some Ally Cards have special abilities that are described on the individual card.

Amour Cards are played to increase a player's Battle Points during Quests and Tournaments. Amour Cards are kept face up

on the table next to the player's rank card and increase the player's Battle Points for all stages of a Quest. After the Quest for which they are used, they are discarded. Bid numbers on Amour Cards are used when facing a Test (see below.)

Test Cards are played to challenge players to a "bidding contest" during a Quest.

GR-06

Story Deck

There are three types of Story Cards: Quest Cards, Tournament Cards, and Event Cards. A player draws one Story Card at the beginning of his turn. This card determines players' actions during that turn. The card is put in the discard pile at the end of the player's turn.

Quest Cards announce an upcoming adventure. However, for the adventure to take place one player must "sponsor" the Quest. Whoever sponsors a Quest challenges opposing players by pitting fierce Foe Cards, Weapon Cards, and Test Cards against them.

Tournament Cards announce a gathering of all players of the realm to participate in a friendly contest of arms called a Tournament.

Event Cards announce a special Event for that turn which will involve one or more players.

Game Set-up

Before starting play, separate the cards into the Rank, Adventure, and Story Decks. Shuffle the Story Deck and place it in the center of the table.

GR-07

Place a Squire Card face up in front of each player to indicate he begins with a rank of Squire. The remaining Rank Cards are placed aside for use later in the game. Each player places his ten identical Shields next to his Squire Card.

Shuffle and cut the Adventure Deck. Deal 12 Adventure Cards to each player.

Game Sequence

The player to the left of the dealer has the first turn. Play always proceeds in a clockwise direction.

GR-08

At the beginning of each turn, a player turns over the top card of the Story Deck to see what will occur during his turn. What happens depends upon the type of card that is drawn:

Quest Card: A Quest is announced, and the players follow the rules described in "Quests."

GR-09

Tournament Card: A Tournament is announced, and the players follow the rules described in "Tournaments."

GR-010

Event Card: An Event is announced, and the player whose turn it is must follow the rules described on the Event Card.

GR-11

GR-12

A player may never hold more than 12 cards in his hand. If a player draws more than 12 cards, he may examine them and then either discard or play the excess cards to return his hand to 12 cards.

For example, a player with ten cards draws three cards, giving him a total of 13 in his hand. He holds an Ally card; he may play it instead of discarding to bring the cards in his hand back to 12.

Battle Points

In the game you will battle other players during Tournaments and will battle Foes during Quests. How well you do in these battles depends upon your strength, which is measured in Battle Points. The more Battle Points you have, the stronger you are. Battle Points are indicated by the number in the bottom center of the Rank, Foe, Weapon, Ally, and Amour Cards.

A Squire has five Battle Points, a Knight has ten Battle Points, and a Champion Knight has 20 Battle Points (these are listed on the Rank Cards). However, you can increase your strength during a Quest or Tournament using Weapon, Ally, and Amour Cards. You add the Battle Points shown on these cards to that of your rank.

For example, a Squire with a Horse has $5+10=15$ Battle Points.

The Foes you fight during Quests also have Battle Points which are indicated on their cards. A Foe may only increase his Battle Points by using Weapon Cards.

Shields & Rank

GR-13

Each time you win a Tournament or Quest, you receive a certain number of Shields. The number of Shields you win is determined by the Event Card you play (see sections entitled "The End of the Quest" and "Tournaments" for details on how Shields are won.) Shields are placed on your Rank Card and are used as counters as you progress in rank. The number of Shields needed to advance are:

From Squire to Knight	5 Shields
From Knight to Champion Knight	7 Shields
From Champion Knight to Knight of the Round Table	10 Shields

When you advance in rank, you exchange your current Rank Card for one showing your new rank.

Sometimes you will have more Shields than are needed to advance to the next rank. If so, place the extra Shields on your new Rank Card. These count toward what is needed to advance to the next rank.

Sponsoring a Quest

GR-14

The player drawing a Quest Card may decide to sponsor the Quest described on the card. The sponsor of a Quest will be able to receive new cards when the Quest is completed. The Quest's sponsor creates the Quest by setting up a layout of Foe and Weapon Cards, or a Test Card to represent each stage of the Quest. The sponsor does not compete in the Quest. He oversees the Quest, making sure the rules are followed. If he decides not to

sponsor the Quest (the player may lack sufficient cards to create the Quest, or simply may not want to sponsor a Quest), the next player on his left decides whether to become the sponsor. If this second player decides not to sponsor the Quest, the next player to his left chooses, and so on. If all players decline to sponsor the Quest, the card is placed in the Story Deck's discard pile and that player's turn is over.

Setting Up a Quest

The Quest Card is placed on the table. The Quest Card states how many "stages" are in the Quest. Each stage represents an obstacle which the players participating in the Quest must overcome to complete that Quest.

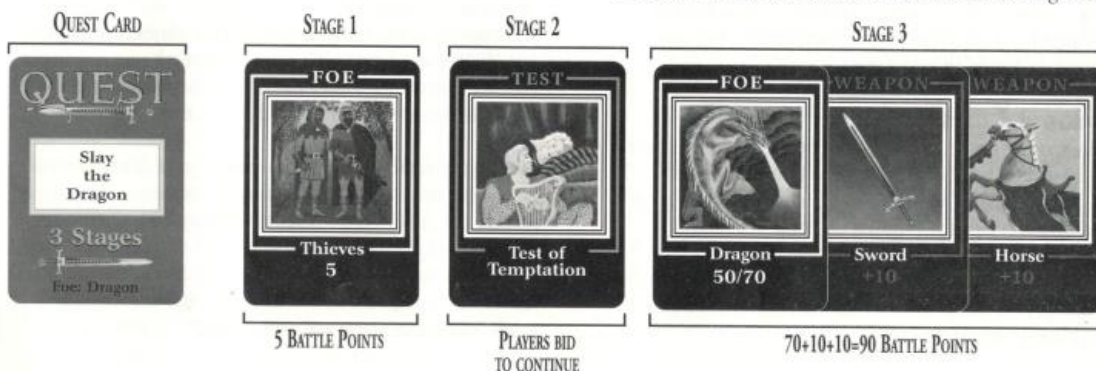
For each stage, the sponsor places a Foe Card (which may be supplemented by Weapons Cards) or a Test Card face down on the

table in groupings beside the Quest Card. Each grouping of cards represents a "stage" of the Quest. The number of stages played must be equal to the number of stages shown on the Quest Card.

As the illustration below shows, the Slay the Dragon Quest has three stages. The sponsor must place three groupings of cards (stages) face down next to the Quest Card.

As the example below shows, only one Foe or Test Card may be played during each stage of the Quest. The sponsor may strengthen a Foe's Battle Points by giving it Weapon Cards from his hand. Each Foe uses as many Weapons as the sponsor wishes to give, but it can never be given two Weapon Cards of the same type, such as two Battle Axes.

The sponsor must arrange the Foe Card, or Foe and Weapon Cards, so that the total number of Battle Points coming into play



at each stage increases from stage to stage. There must be more Battle Points (Foe Cards + Weapon Cards) in the second stage than in the first, and so on.

Foe Cards with extra Battle Points: Some Foe Cards have two Battle Point values, for example "15/25." When a Foe is named on the Quest Card in play, and if the sponsor uses that Foe, the higher Battle Point value applies; if the Foe is not named, the lower value applies.

For example, the Slay the Dragon Quest is sponsored, and the sponsor plays the Dragon Foe Card with Battle Points of "50/70." The higher value is honored.

Test Cards: Test Cards do not have Battle Points and may be played in any stage of the Quest, regardless of the number of Battle Points in play in the previous or next stage. *Only one Test Card may be played in each Quest.*

GR-16a

Playing a Quest

After the sponsor has set up the stages of the Quest, each of the other players decides whether to join the Quest. Players who choose not to join the Quest must sit out until that Quest is over. The Quest now begins and is played one stage at a time.

Before the Quest begins, and at the beginning of each subsequent stage, the sponsor hands out one card from the Adventure Deck to each player going on the Quest.

The sponsor announces whether each stage contains a Foe Card or a Test Card:

If a Foe is encountered: Each player must fight the Foe. Before discovering what type of Foe he is encountering however, he must decide how much of his strength he wishes to use to overcome the Foe's Battle Points. (See more details below.)

If a Test is encountered: A bidding contest ensues. Players bid cards among themselves to see who is willing to play the greatest number of cards in order to pass the Test. (See more details below.)

A Foe is encountered

If the upcoming stage is against a Foe, each player on the Quest now decides which cards in his hand he wants to use against the Foe based on the number of Battle Points needed to defeat him. He places the selected cards face down on the table.

The player's minimum strength is shown by the Battle Points of his current rank. He adds to his strength by playing Weapon, Amour, and/or Ally Cards. A player may play more than one Weapon Card per stage, as long as he does not play two Weapon Cards of the same type. A player may not play more than one Amour Card per Quest, and when the Quest is over the Amour Card is discarded. (Love is a fleeting thing...) A player may play

GR-16b

GR-16c

any number of Ally Cards at any time. The Battle Points provided by Ally Cards are added to those of his rank for the duration of the game or until they are taken away by an Event Card or the Mordred Foe Card (see the section entitled "The 'Mordred' Foe Card").

After players in the Quest place the cards they want to use for that stage face down on the table, the sponsor then turns over his Foe Card or combined Foe and Weapon Cards for that stage. The players turn over their cards for that stage.

Each player adds up his Battle Points and compares them to those of the Foe. If the player has more Battle Points than the Foe, or the player and the Foe tie, the player proceeds to the next stage of the Quest and draws one card from the Adventure Deck. If the Foe has more Battle Points, the player is defeated and must sit out the remainder of the Quest. In any stage, more than one player can defeat the same Foe. In this case, all players to do so are dealt one card from the Adventure Deck and continue to the next stage of the Quest.

After each Quest stage, players must discard all Weapon Cards used for that stage. Amour cards are discarded at the end of the Quest. Ally Cards may remain in play.

A Test is encountered (Bids are explained)

The Quest's sponsor announces the Test at the beginning of the

stage in which it is encountered. He immediately turns the Test Card face up. The players must now bid, starting from the left of the sponsor. A bid is the number of cards a player is willing to discard in order to be the one who continues alone on the remainder of the Quest.

The player to the left of the sponsor begins by announcing how many cards he bids to pass the Test. The next player to the left then bids. Each player's bid must be higher than the last, or the player drops out of the Quest. Players bid until everyone on the Quest has made a bid or has chosen to drop out and continues until no one will bid higher. Note: some Ally and Amour Cards provide bids (see "free bids" on the next page). If a player has these cards in play he may use the bid points to reduce the number of cards he discards. If the bid cards are in hand, they may be played.

The player who passes the Test (wins the bidding contest and discards the highest number of cards) draws one card from the Adventure Deck and goes on to the next stage of the Quest.

Sometimes a player will encounter a Test Card when he is the only player left in the Quest. In this case, the player bids the minimum bid indicated on the Test Card. If there is no number on the Test Card, the player must make a minimum bid of three. If he is unable to bid three cards, he drops out and the Quest is over.

Free Bids

All Amour Cards, as well as some Ally Cards, give players "free

GR-16d

bids" if the player has the card in play during a Test. Free bids are given on the Amour or Ally Card. The number of free bids reduces the number of cards that must be discarded if that player wins the bid.

For example, a player wins a Test by bidding nine cards. He has the Queen Guinevere Ally Card in play which gives him three free bids. He would, therefore, have to discard only six cards of his choice from his hand.

GR-17

The "Mordred" Foe Card

This card may be used as a normal Foe or to remove another player's Ally from play. To remove an Ally Card, you simply say which character you wish to remove as you play the card. The Mordred Card and the Ally Card are immediately placed in the Adventure Deck's discard pile.

You may play the Mordred Card during your turn or at any point during a Quest or Tournament in which you are engaged.

GR-18

The End of the Quest

The Quest ends when either:

- 1) all players are defeated or forced to drop out, or;
- 2) one or more players successfully make it through every stage of the Quest.

All players who successfully complete the Quest receive as many Shields as there were stages in the Quest. If all players on the Quest are defeated or drop out, no Shields are awarded. The sponsor draws from the Adventure Deck, whether players on the Quest won, were defeated, or dropped out. He draws a number

of cards equal to:

the number of cards he used to sponsor the Quest

PLUS

the number of stages in the Quest.

For example, in the illustration on page four, the sponsor draws eight cards (five cards used to sponsor the Quest + three stages in the Quest) from the Adventure Deck.

Once a Quest ends, the sponsor places the cards he used to set up the Quest into the discard piles.

Discarding: Once a Quest ends, players place all Adventure and Story Cards used during the Quest (except Ally Cards) into their respective discard piles. Ally Cards remain in play until they are removed by an Event Card or Mordred Card. It is now the turn of the player to the sponsor's left. The top card of the Story Deck is turned over and a new game sequence begins. When the Decks are used up, reshuffle them and continue play.

Tournaments

In the time of King Arthur, Tournaments were held in which knights from all over the realm challenged each other to jousts and sword fights to see who was most skilled and courageous.

Whenever a Tournament Card is drawn from the Story Deck, each player decides whether to enter the Tournament. The player drawing the card announces his decision first, followed by each player to his left. If only one player enters the Tournament, that player is automatically awarded one Shield for entering, plus any bonus shields indicated on the Tournament

GR-19a

Card.

The winner of a Tournament is the player with the most Battle Points.

GR-19b

Tournament Play

Each player entering the Tournament draws one card from the Adventure Deck.

Next, each player decides which cards from his hand he will use to challenge other players. Players may play Ally, Weapon, and Amour Cards to increase the number of Battle Points of their rank. As usual, a player may not play more than one Weapon of the same type or play more than one Amour Card. Ally Cards on the table are not added to your Battle Points.

GR-19c

In unison, all players place the cards they chose face up in front of them. The player who has the most Battle Points provided by his Rank Card, Ally Card(s) on the table, *plus* the cards he has just played wins the Tournament. A player may choose to play zero cards from his hand, giving him only the Battle Points of his Rank Card.

The winner of the Tournament receives a number of Shields equal to the number of players who entered the Tournament. Some Tournaments also give the winner bonus Shields. The number of bonus Shields is on the Tournament Card.

Tie-Breaking in Tournaments

The players in a tie discard the Weapon Cards just played. Ally

and Amour Cards remain in play. Each of these players then decides which cards he will play in the tie-breaking round. This second round is played exactly like the first. If there is still a tie after the second round, all players in the second round receive as many Shields as the number of players who originally entered the Tournament.

Winning the Game

As soon as a player earns enough Shields to become a Knight of the Round Table, he declares himself the winner. It is possible for more than one player to declare himself a winner during the same turn. If this happens, all players who have just become Knights of the Round Table must participate in a final Tournament.

The winner of this last Tournament wins the game. If this final Tournament is also tied, those players in the tie all win the game.

Two-Player Game

Sometimes, there will be only two players available to play *Quests of the Round Table*. The rules are the same for a two-player game. However, there will only be one player on a Quest, and there will never be competitive bidding in Tests. This means the player must bid what the card says, or, if there is no minimum bid shown on the Test Card, the player must bid three.

GR-20

GR-21

QUESTS OF THE ROUND TABLE CARD FREQUENCY

<i>CARD</i>	<i>FREQUENCY</i>	<i>CARD</i>	<i>FREQUENCY</i>
ADVENTURE DECK			
WEAPONS			
Excalibur	2	Test of Valor	2
Lance	6	Test of Temptation	2
Battle-ax	8	Test of Morgan Le Fey	2
Sword	16	Test of the Questing Beast	2
Horse	11	TOTAL	8
Dagger	6		GR-22c
TOTAL	49		
	GR-22a		
FOES			
Dragon	1	ALLIES	
Giant	2	Sir Galahad	1
Mordred	4	Sir Lancelot	1
Green Knight	2	King Arthur	1
Black Knight	3	Sir Tristan	1
Evil Knight	6	Sir Pellinore	1
Saxon Knight	8	Sir Gawain	1
Robber Knight	7	Sir Percival	1
Saxons	5	Queen Guinevere	1
Boar	4	Queen Iseult	1
Thieves	8	Merlin	1
TOTAL	50	TOTAL	10
	GR-22b		
		AMOURS	
			8
			GR-22d

**ADVENTURE DECK TOTAL
CARD**

**125
FREQUENCY**

CARD

FREQUENCY

STORY DECK

QUESTS

Search for the Holy Grail	1
Test of the Green Knight	1
Search for the Questing Beast	1
Defend the Queen's Honor	1
Rescue the Fair Maiden	1
Journey Through the Enchanted Forest	1
Vanquish King Arthur's Enemies	2
Slay the Dragon	1
Boar Hunt	2
Repel the Saxon Raiders	2
TOTAL	13

GR-23a

TOURNAMENTS

Tournament at Camelot	1
Tournament at Orkney	1
Tournament at Tintagel	1
Tournament at York	1
TOTAL	4

GR-23b

EVENTS

King's Recognition	2
Queen's Favor	2
Court Called to Camelot	2
Pox	1
Plague	1
Chivalrous Deed	1
Prosperity Throughout the Realm	1
King's Call to Arms	1
TOTAL	11

GR-23c

STORY DECK TOTAL 28

RANK DECK

Squire	4
Knight	4
Champion Knight	4
RANK DECK TOTAL	12

GR-24

3. Requirements

This section contains what features must be implemented. Each requirement has its own unique identifier, description, plus where the decision to come up with it can be traced to. The source of traceability may either be from the official game rules (see Game Rules for notation information), assumptions, other requirements, or team decisions.

3.1 Non-Functional Requirements

Non-functional requirements deal with the quality of which the program must satisfy. These concern aspects such as accessibility, usability, and maintainability.

ID	Non Functional Requirement
NF-01	The system can evaluate winning condition (end of game)
NF-02	The system responds correctly to actions
NF-03	The system does not stop functioning at any stage of the game
NF-04	The server notifies observers every time the model changes
NF-05	The system progresses the game continually (i.e. no user intervention required)
NF-06	The system can add AI players to play if needed

3.3 Assumptions

ID	Assumption	Justification
A-01	Players will play the game as intended and will make no obvious efforts to create bugs or crash the game.	This game is not being created for a game development course. It is being created to showcase different types of technologies

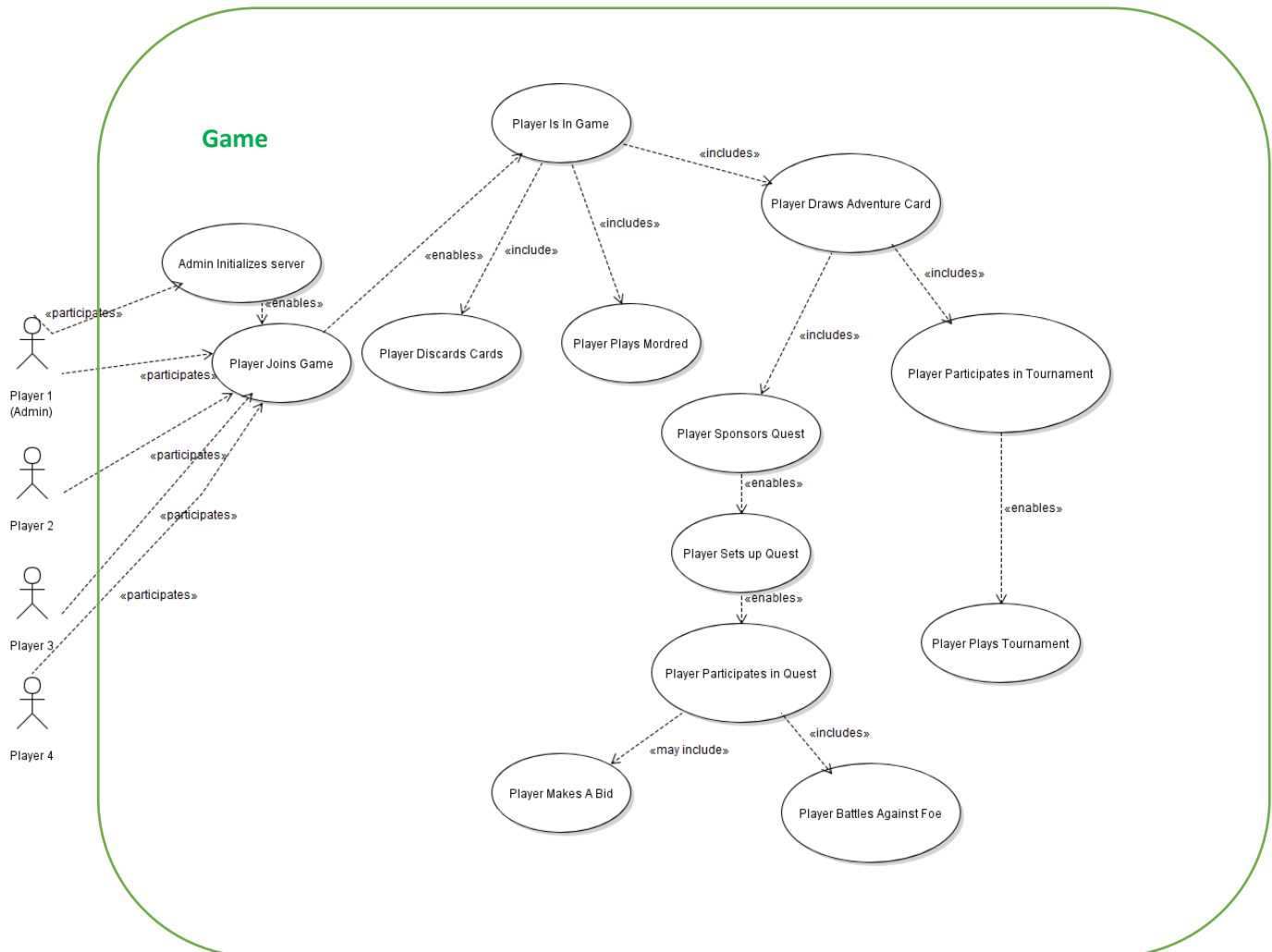
4. Caveats

ID	Caveat	Justification
C-01	The game is unplayable if a player is not responsive	The system relies on users doing their part to contribute to the game. If there is no action, the game will be left hanging
C-02	Merlin Ally Feature is missing	Did not have time
C-03	Mordred Feature is missing	Did not have time

5. Use Cases

5.1 Use Case Diagram

The following diagram corresponds to the use cases in Section 4.2. Actors are depicted as stick figures. Ellipses represent use cases, dashed arrows with an «include» stereotype represent an “includes” relationship, and regular lines represent association.



5.2 Use Cases

UC-01	Admin Initializes Server
Description	Initialization of Quests of the Round Table, so that players can connect and be placed into a game
Actors	Admin
	Admin chooses to initialize Quests of the Round Table
Pre-Condition	None
Main Sequence	<ol style="list-style-type: none"> 1. Admin runs the server 2. Admin selects number of real players and AI players 3. Admin begins hosting games of Quests of the Round Table for 2, 3, or 4 Players
Post-Condition	Game server is running
Resulting Event	The game server is now awaiting connections from players
Alternative Scenarios	N/A
Traceability	GR-01, GR-20, NF-02, NF-06

UC-02	Player Joins Game
Description	The event that occurs when all required human players are connected to the game server
Actors	Player
Pre-Condition	The server is up and running
Main Sequence	<ol style="list-style-type: none"> 1. Player launches client 2. Connects to server 3. Waits for other players to join (Same UC)
Post-Condition	Player is waiting for others to connect
Resulting Event	Player is connected on the server
Alternative Scenarios	N/A
Traceability	NF-02, NF-06

UC-03	Player Is In Game
Description	The event that occurs when all required human players are connected to the game server. That is when the game is set up
Actors	Last required Player
Pre-Condition	All players now connected to the game
Main Sequence	<ol style="list-style-type: none"> 1. Last required player joins server (<<include UC-02>>) 2. Player now can play the game 3. Repeat until winning conditions met <ol style="list-style-type: none"> a. Draw Adventure card <<include UC-xx>> b. Current player becomes the player to the left of Current Player
Post-Condition	A player has won
Resulting Event	The game ended
Alternative Scenarios	N/A
Traceability	GR-06, GR-07, GR-08, GR-13

UC-04 Player draws Adventure Card	
Description	Current player draws an adventure card, and acts depending on what is there
Actors	Current Player
Pre-Condition	No winner yet
Main Sequence	<ol style="list-style-type: none"> 1. Player draws an adventure card, do one of the following: <ol style="list-style-type: none"> a. If drawn card is Tournament Card, run Player participates in Tournament <<include UC-05>> b. If drawn card is Quest Card, run Player Sponsors Quest <<include UC-07>> c. If drawn card is Event Card, run System runs Event <<include UC-014>>
Post-Condition	None
Resulting Event	Repetition of UC-04 through UC-03
Alternative Scenarios	
Traceability	GR-06, GR-09, GR-10, GR-15

UC-05 Player participates in Tournament	
Description	Players, starting from current player, are asked in turn if they would like to participate in a tournament
Actors	Player
Pre-Condition	The Story Card most recently drawn is a Tournament card
Main Sequence	<ol style="list-style-type: none"> 1. For each player, starting from current player: <ol style="list-style-type: none"> a. Ask if player wants to play in tournament <ol style="list-style-type: none"> i. If yes, player added to participants 2. Run Player Plays Tournament <<include UC-06>>
Post-Condition	None
Resulting Event	Tournament will be played
Alternative Scenarios	
Traceability	GR-19a

UC-06 Player Plays Tournament	
Description	Players take place in tournament
Actors	Players who decided to participate in tournament
Pre-Condition	Players decided already if they want to participate in tournament
Main Sequence	<ol style="list-style-type: none"> 1. For each player in participants: <ol style="list-style-type: none"> a. Player draws a card from the adventure deck b. Player plays weapons, allies/amours appropriately face-down for the tournament 2. All Participants reveal the cards they have laid down 3. Player with highest BP wins tournament
Post-Condition	None
Resulting Event	There is a winner in the tournament and winner gets as many shields as there were participants
Alternative Scenarios	If there is a tie, play a tie-breaker for a tournament (Repeat UC-06, with just the players in the tiebreaker)
Traceability	GR-19a, GR-19b, GR-19c

UC-07 Player Sponsors Quest	
Description	Players, starting from current player, are asked in turn if they would like to sponsor a quest
Actors	Player
Pre-Condition	The Story Card most recently drawn is a Quest card
Main Sequence	<ol style="list-style-type: none"> 1. For each player, starting from current player: <ol style="list-style-type: none"> a. Ask if player wants to sponsor quest <ol style="list-style-type: none"> i. If yes, run Player Sets up Quest <<include UC-08>> 2. Sponsor draws as many Adventure Cards as they put into the quest PLUS as many cards as there are stages
Post-Condition	Quest is complete
Resulting Event	
Alternative Scenarios	If Sponsor has more than 12 cards at hand after drawing: <<include Player discards card>>
Traceability	GR-14

UC-08 Player Sets up Quest	
Description	The player who sponsored the Quest, will now set up the quest
Actors	Player who is sponsoring the Quest
Pre-Condition	None
Main Sequence	<ol style="list-style-type: none"> 1. For the number of stages in the Quest, either: <ol style="list-style-type: none"> a. Set up a Battle Stage with foes + weapons with BP more than the previous Battle Stage (if applicable), or b. Set up a stage with a test (can only happen once)
Post-Condition	Quest is set up consisting of Battle Stages in ascending order and, optionally, at most one test.
Resulting Event	Run use case Player Participates in Quest UC-09
Alternative Scenarios	
Traceability	GR-15

UC-09 Player Participates in Quest	
Description	Every player except the Sponsoring Player decides if they would like to participate in the quest. Consequently, each participant plays out the stages of the quest
Actors	All players
Pre-Condition	A quest is set up
Main Sequence	<ol style="list-style-type: none"> 1. For every player, except the sponsoring player: <ol style="list-style-type: none"> a. Player decides if they want to participate in quest 2. For all stages the sponsor set up <ol style="list-style-type: none"> a. Sponsor announces stage type <ol style="list-style-type: none"> i. If a Test, <<include>> UC-10 Player Makes a Bid, otherwise ii. <<include>> UC-11 Player Battles Against Foe

Post-Condition	All applicable players have said if they want to participate or not in Quest
Resulting Event	If at least one participant joined, run use case Player UC-10
Alternative Scenarios	If no one wanted to participate, do not run 2)
Traceability	GR-16a

UC-10	Player Makes a Bid
Description	A test is run into and all players make a bid to proceed to next stage
Actors	All participants
Pre-Condition	Current stage is Test
Main Sequence	<ol style="list-style-type: none"> 1. For each Player in Participants, until there is a winner <ol style="list-style-type: none"> a. Player announces bid b. If bid is higher than previous one, <ol style="list-style-type: none"> i. Player stays in bid, otherwise ii. Player drops out 2. Winner discards bid amount of cards <<include UC-12>>
Post-Condition	<ol style="list-style-type: none"> 1. Test Stage is complete 2. And either, <ol style="list-style-type: none"> a) There is a winner at the end of this Test, or b) There is no winner (no one bid)
Resulting Event	The winner will proceed to the next stage OR win the Quest
Alternative Scenarios	Under post-conditions, if b) occurs the Quest ends early and no one discards cards
Traceability	GR-16c

UC-11	Player Battles against Foe
Description	A foe is run into and players must battle it
Actors	All participants and the Sponsor
Pre-Condition	Current stage is a Battle Stage
Main Sequence	<ol style="list-style-type: none"> 1. For each player in participants: <ol style="list-style-type: none"> a. Player draws one Adventure Card b. Player decides which weapons, amours and/or allies to play 2. Sponsor reveals stage's foe + weapons (if applicable) 3. For each Player in participants: <ol style="list-style-type: none"> a. If Player matched stage's BP or is higher, proceed to next stage, otherwise b. Player drops from the Quest
Post-Condition	Battle Stage is complete
Resulting Event	The winner will proceed to the next stage OR win the Quest
Alternative Scenarios	If any Player has more than 12 cards at hand after drawing: <<include UC-12>>
Traceability	GR-16b

UC-12	Player Discards Cards
Description	A Player discards cards from hand
Actors	Player
Pre-Condition	Resultant from either a) Having too many cards in hand, or b) Winning Test Stage
Main Sequence	1. If precondition is a): Player discards down to 12 cards 2. If precondition is b): Player discards the amount he bid MINUS any free bids he had in the first place
Post-Condition	Player has discarded cards back into the discard pile
Resulting Event	None
Alternative Scenarios	
Traceability	GR-16d

UC-13	Player Plays Mordred
Description	A Player plays Mordred to kill (remove) someone's Ally in play
Actors	Player
Pre-Condition	None
Main Sequence	1. Player plays a Mordred Foe card 2. Player announces which Player's Ally should be removed 3. Removed Ally's Player discards that Ally back into the discard pile
Post-Condition	An Ally has been removed from play
Resulting Event	None
Alternative Scenarios	
Traceability	GR-23c

UC-14 System Runs Event Card	
Description	An event is run by the system, and acts appropriately depending on what event is drawn
Actors	System
Pre-Condition	An Event card is in play
Main Sequence	<p>1. The system checks the event</p> <p>If Event is Chivalrous Deed System awards players with the lowest rank with 3 shields</p> <p>If Event is Pox System removes 1 shield from every player except the one who drew it</p> <p>If Event is Plague System removes 1 shield from the player who drew it</p> <p>If Event is King's Recognition System sets up 2 bounty shields as an award for the next Player(s) to win the quest</p> <p>If Event is Queen's Favor System hands out 2 Adventure Cards to lowest ranked Player(s) in the game</p> <p>If Event is Court Called to Camelot System removes all Allies in play into discard pile</p> <p>If Event is King's Call to Arms System determines highest ranked Player(s) and they must discard 1 Weapon. If not possible: Player instead discards 2 Foes</p> <p>If Event is Prosperity Throughout the Realm System hands out 2 cards to each Player</p> <p>Note: If in any of the situations above a Player ends up with more than 12 cards, OR has to discard cards, then run Player Discards Cards <<include UC-12>></p>
Post-Condition	None
Resulting Event	Repetition of UC-04 through UC-03
Alternative Scenarios	
Traceability	GR-06, GR-09, GR-10, GR-15

6. Design Decisions

This section documents design decisions that have been taken with respect to classes and objects chosen for the system. Included is a Unified Modeling Language (UML) diagram in Section 5.2.

5.1 – Decisions

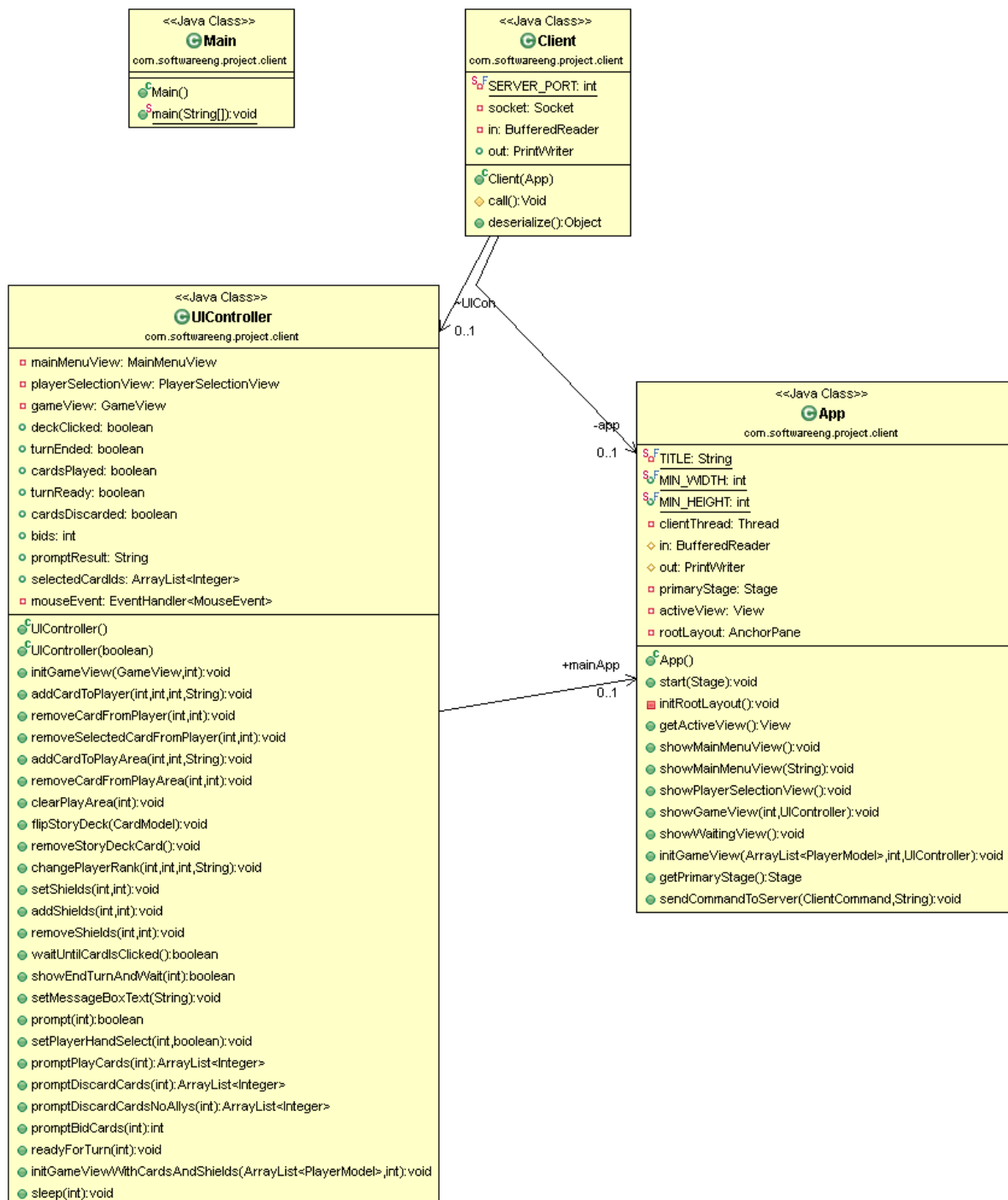
ID	Design Decision	Traceability
DD-01	MVC model	Group Decision
DD-02	1 UIViewController for each client vs 1 UIViewController for all clients	Group Decision
DD-02	Command-based networking	Group Decision

7. Responsibilities

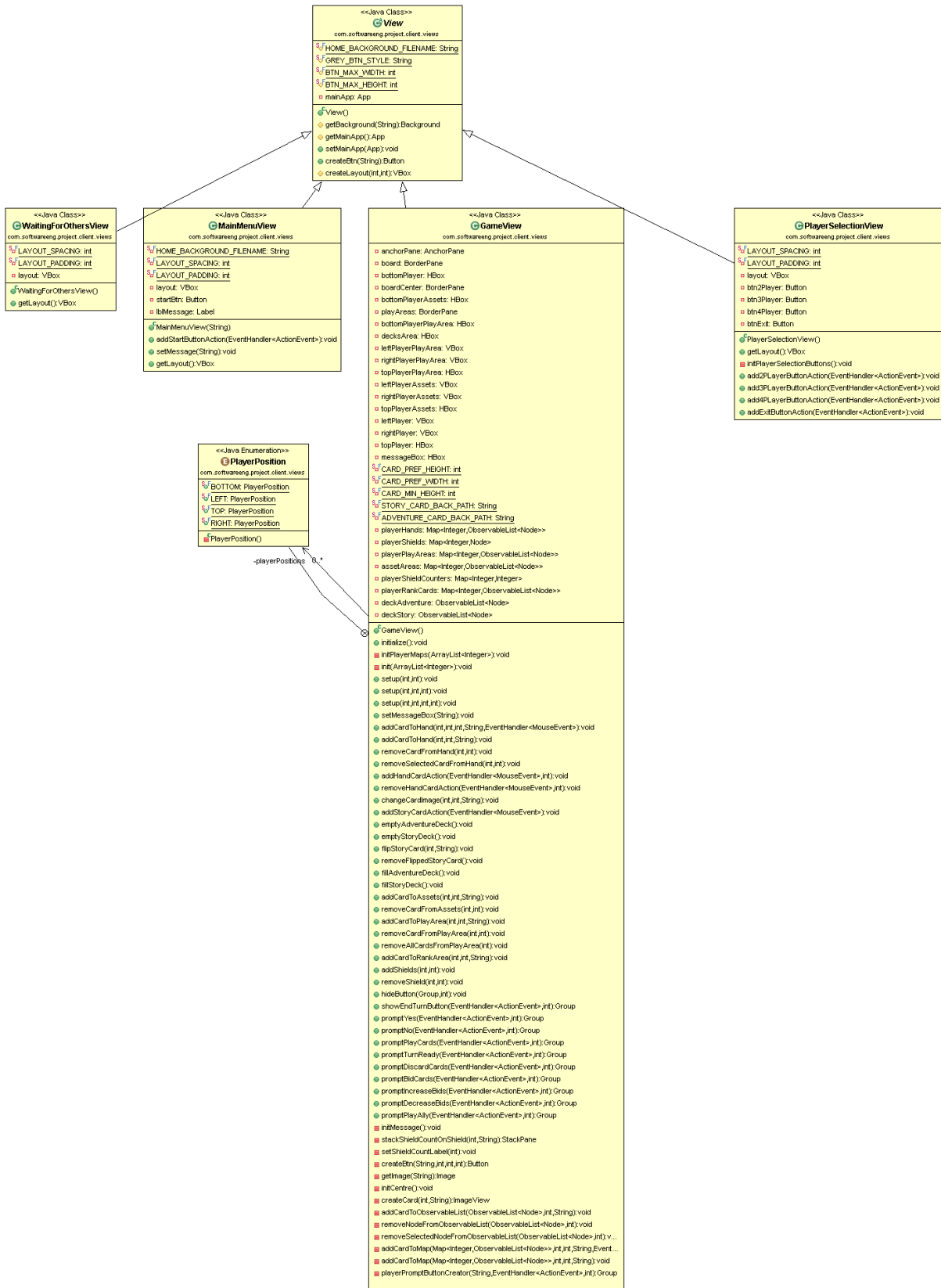
ID	Responsibility	Use Case
R-1	The system accepts connections from players.	UC-01
R-2	The system sends information about game to all players	UC-03
R-3	The system shuffles all the cards in each deck	
R-4	The system sends the start message to all players.	UC-03
R-5	The system sends a message/update to each player every time the model is updated	
R-7	The system runs the game in co-ordination (responses) from the user	
R-8	The system is able to determine when the game ends (i.e. when there is a winner)	UC-03

8. UML

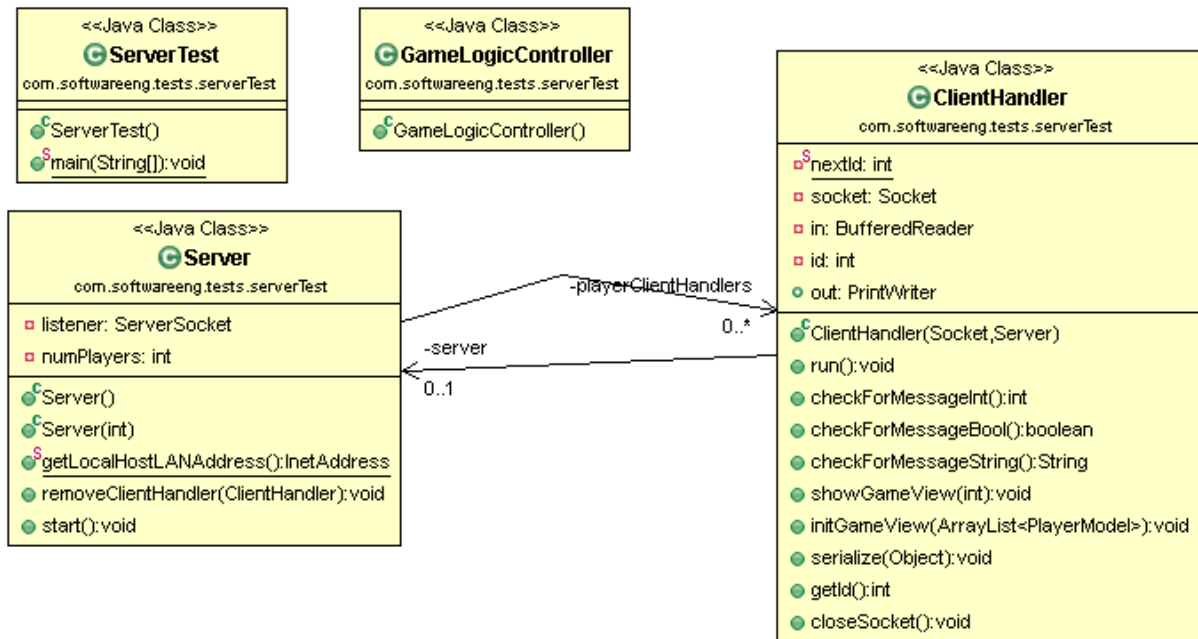
8.1 Class Diagram – client



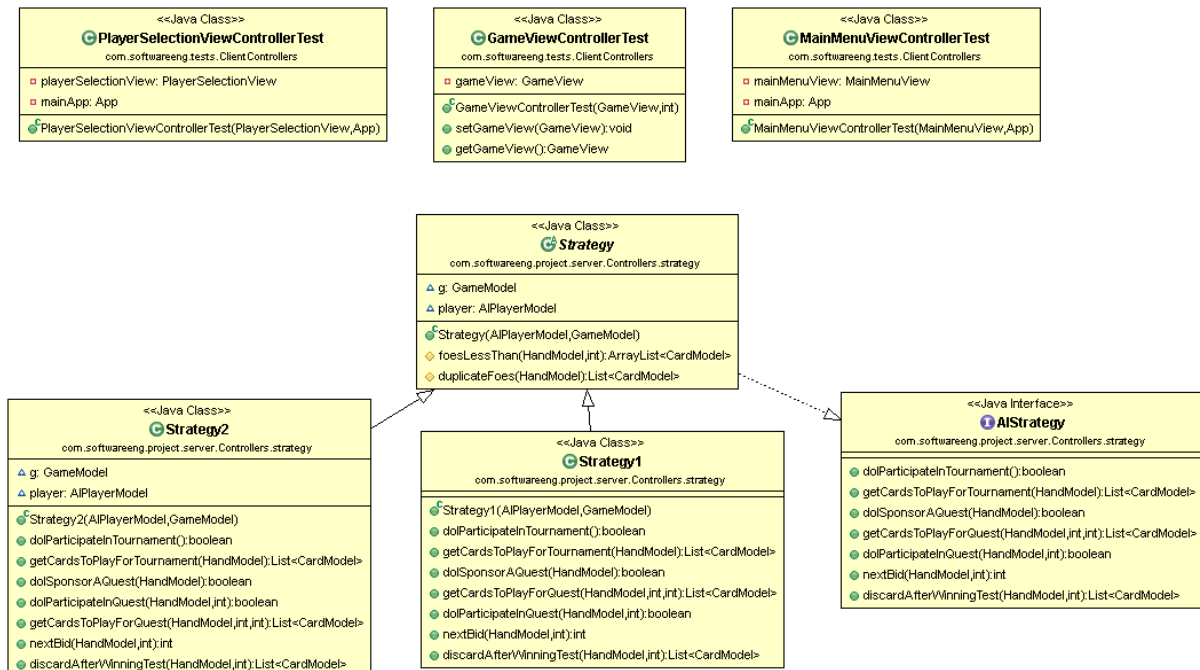
8.2 Class Diagram – Views



8.3 Class Diagram – Server



8.4 Class Diagram – Controller



8.5 Class Diagram – Model

