
Software Requirements Specification for Crazy Eight

Version 1.0 approved

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Revision History

This is the Software Requirement Specification document for initial version of this game and no changes have been made till now.

Name	Date	Reason For Changes	Version

1. Introduction

1.1 Purpose

This is Software Requirement Specification document for the software version of Crazy Eight card game. This document provides a functional specification for this game.

1.2 Document Conventions

All the sections in this document are numbered (like 2. Overall Description) and their corresponding Sub-Sections are numbered with decimals (like 2.1 Product perspective). Any points in the description are numbered in lower case alphabets. The Sections are in 18 point Times New Roman font, Sub-Sections are in 14 point Times New Roman font and description is in 12 point Times New Roman font. The header is 10 point, Italic, Times New Roman font and left aligned.

1.3 Intended Audience and Reading Suggestions

Intended audience for this document are Sridivya and Rupa Sindhura who will be developing this game, instructor Dr. Zhao who will be reviewing this software and others who will be using this software. This document is organized as follows:

1. Introduction
 2. Overall Description
 3. System Features
 4. External Interface Requirements
 5. Other Nonfunctional Requirements
 6. Other Requirements
- Appendix A: Analysis Models

1.4 Project Scope

The scope of the project is to develop Crazy Eight card game. This is a shedding type card game. This project aims to utilize game technologies in JAVA to produce single and multiplayer games. This game will create artificial opponents who will play against the user in this game and other functionalities like distributing, matching and flipping the top card on the deck. It grants super power to the intended player based on the game rules which are explained in detail in the upcoming sections. In addition to above, the software also provides an instruction page to the users with the game rules.

1.5 References

<https://xp-dev.com/trac/CrazyEights/wiki/SRS>

www.bicyclecards.com/how-to-play/crazy-eights/

www.requirementsmanagementschool.com/w1/Tips_for_Writing_Good_SRS

2. Overall Description

2.1 Product Perspective

This is computer-based version of the classic multiplayer card game. The player competes against the computer to discard all the cards in his/her hand. It provides an opponent that is available whenever the user who wants to play this game. Crazy Eight satisfies the players who are looking for entertainment, challenges and recreation.

2.2 Product Features

The major features are:

- a. Provides an opportunity to the user to select the number of AI opponents between one and three.
- b. Cards are equally distributed to all the players (7 cards each).
- c. Instructions will be available to the user at any point of the game.
- d. Notifies the user with a warning of a mismatched card.
- e. Special power will be granted if he chooses to drop a card with number eight.
- f. Manage the game play by responding to player's moves and updating the game board.
- g. Determined the winner and calculates the scores to display the runner-ups.
- h. Privileges are given to the user to replay or exit at the end of each game.

2.3 User Classes and Characteristics

Crazy Eight is purely recreational software designed for personal computer users. The user is assumed to be aware of game rules and some basic interface objects like Windows, Icons, Menus, Pointers etc.

2.4 Operating Environment

This software will run on any platform and operating system which supports and has Java installed.

2.5 Design and Implementation Constraints

The software will be developed using Java.

2.6 User Documentation

Instructions will be available on the user interface at any time during the game.

2.7 Assumptions and Dependencies

- a. This game uses a standard deck of 52 cards.
- b. All menus and messages are in English.
- c. Does not require an internet connection.

3. System Features

3.1 Start Game

3.1.1 Description and Priority

Priority: High

User must have to click the start button to start the game.

3.1.2 Stimulus/Response Sequences

User will be directed to a main menu page with following options as soon as he/she clicks the 'Start Button':

- a. Choose Player
- b. Instructions
- c. Lets Get Started

3.1.3 Functional Requirements

REQ-1: The main menu will be displayed within 2 seconds as soon as the user clicks 'Start Button'.

REQ-2: This main menu will have the options like choosing the number of players (either two or three or four), viewing the instructions and starting the game

3.2 Choose Player

3.2.1 Description and Priority

Priority: Medium

User can select number of player. Otherwise, by default the number of players will be set to two by the software.

3.2.2 Stimulus/Response Sequences

Depending on the number of players chosen, the cards will be distributed and game screen will be set accordingly.

3.2.3 Functional Requirements

REQ-1: Chooses the number of players.

3.3 Instructions

3.3.1 Description and Priority

Priority: Medium

User can select this option to view game rules.

3.3.2 Stimulus/Response Sequences

An instruction page will be displayed with detail explanation of game rules.

3.3.3 Functional Requirements

REQ-1: Provides game rules at any point of time during the game.

3.4 Lets get started

3.4.1 Description and Priority

Priority: High

User has to select this option in order to start playing.

3.4.2 Stimulus/Response Sequences

The game screen will be displayed with number of players selected, cards distributed and top card on the pile of cards flipped face up.

3.4.3 Functional Requirements

REQ-1: It redirects the user to the game screen.

3.5 Drop Card

3.5.1 Description and Priority

Priority: High

In order to drop, the player has to click on any card in his hands which matches either the suit or number with the top card faced up.

3.5.2 Stimulus/Response Sequences

If the dropped card matches, then the game screen will be updated by:

- a. Deleting the corresponding card from the player's hand.
- b. Replacing the dropped card with the top card at the center.

3.5.3 Functional Requirements

REQ-1: Allows the user to drop the intended card provided it matches the top card.

REQ-2: Displays a warning if the card which user wish to drop does not match the top card and notifies the user to drop another card.

REQ-3: If the dropped card is eight, according to the game rule it matches automatically with any number and any suit and the player will be given **'Super Power'**.

3.6 Super Power

3.6.1 Description and Priority

Priority: High

Player who drops eight will have a power to nominate a suit which the next person has to match with.

3.6.2 Stimulus/Response Sequences

Option with four suits will be provided to the player.

3.6.3 Functional Requirements

REQ-1: Super power will be triggered if the player drops an eight card.

REQ-2: Next player has to match the suit selected by the player with super power else **'Pick Card'**.

3.7 Pick Card

3.7.1 Description and Priority

Priority: High

Player will have to pick the card from the deck, if he does not have any card, which matches either the suit or the number on the top card.

3.7.2 Stimulus/Response Sequences

The picked card will be added to the player's hand.

3.7.3 Functional Requirements

REQ-1: Cards in player's hand will be updated by adding the picked card.

REQ-2: Turn will be given to the next player.

3.8 Display winner

3.8.1 Description and Priority

Priority: High

When any player is out of cards first, he/she will be the winner.

3.8.2 Stimulus/Response Sequences

- a. When the player finishes his/her turn and if the count of cards becomes zero then he will be the winner.

- b. The winning message will be displayed after the player finishes his/her turn and the runner-ups will be displayed based on their scores.

3.8.3 Functional Requirements

REQ-1: The number of cards should be always checked after each player's turn.

REQ-2: If the number of cards becomes 0, then declare the player as winner and along with runner-ups based on the scores

REQ-3: Penalty points are calculated based on following rules:

- a. Each Eight – 50 points
- b. Each K, Q, J or 10 – 10 points
- c. Each Ace – 1 Point
- d. Each other card is the pip value.

REQ-4: This winner screen will have additional two options namely '**Exit Game**' and '**Play Again**'.

3.9 Exit Game

3.9.1 Description and Priority

Priority: High

The application will be stopped if the player chooses this option.

3.9.2 Stimulus/Response Sequences

Player selects 'Exit Game' option.

3.9.3 Functional Requirements

REQ-1: The game should come to an end when this option is chosen.

3.10 Play Again

3.10.1 Description and Priority

Priority: High

Player will be redirected to the main menu page.

3.10.2 Stimulus/Response Sequences

Main menu page will be displayed with the option mentioned above and replay.

3.10.3 Functional Requirements

REQ-1: The control will be transferred to the main menu page.

REQ-2: User will be able to select the options in main menu page and restart the game.

3.11 Quit

3.11.1 Description and Priority

Priority: High

When this option is selected the game will be stopped.

3.11.2 Stimulus/Response Sequences

User will be directed to the main screen.

3.11.3 Functional Requirements

REQ-1: User should be able to terminate game at any point of time and should be redirected to the main screen.

4. External Interface Requirements

4.1 User Interfaces

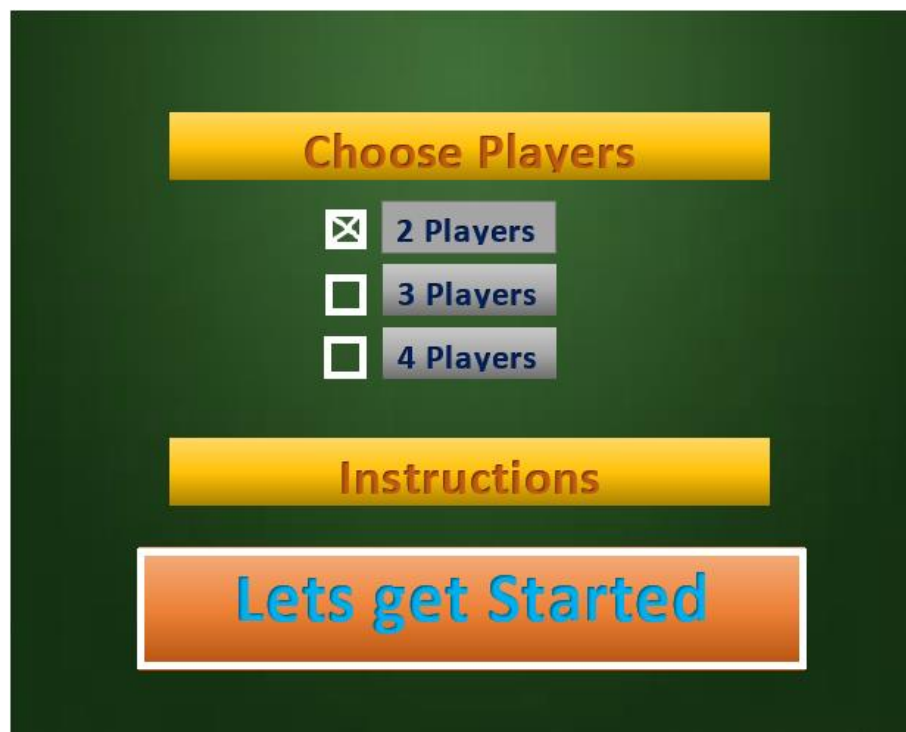
The user interface for this game is user friendly. This application starts with a start screen with a 'Start Game' button as shown below.



As soon the player clicks the Start Game button it redirects to a page where he can either choose the number of players or view the instructions and get started with the game.



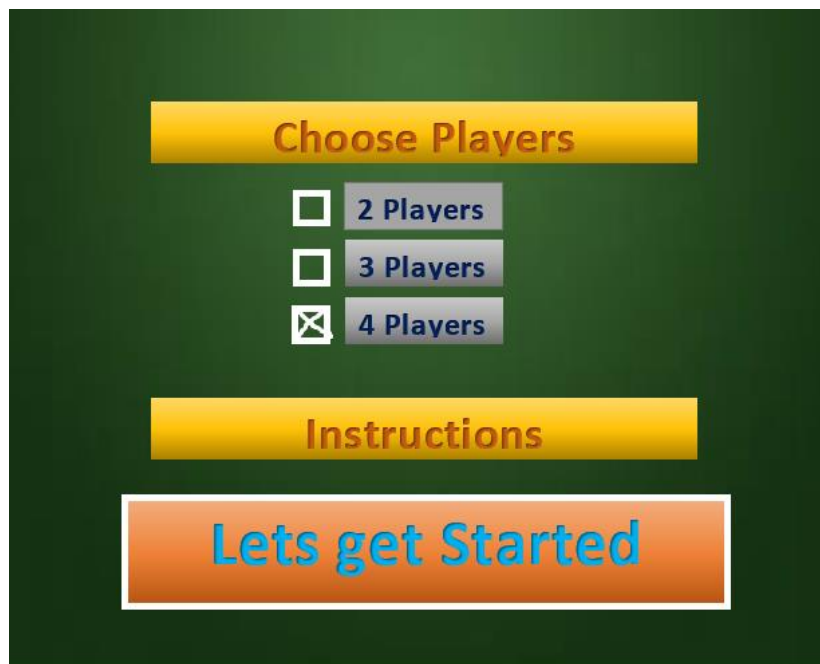
Screen showing selection of **two** players.



Screen showing selection of **three** players.



Screen showing selection of **four** players.

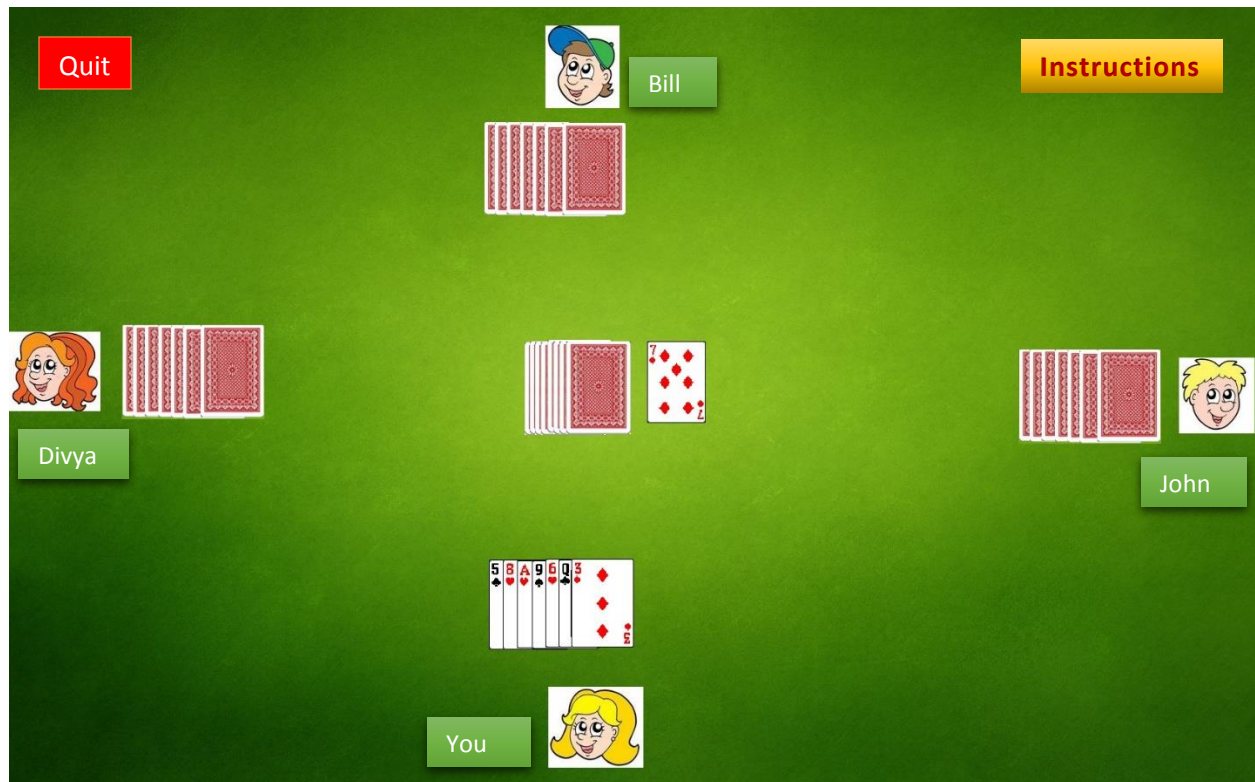


Instructions page

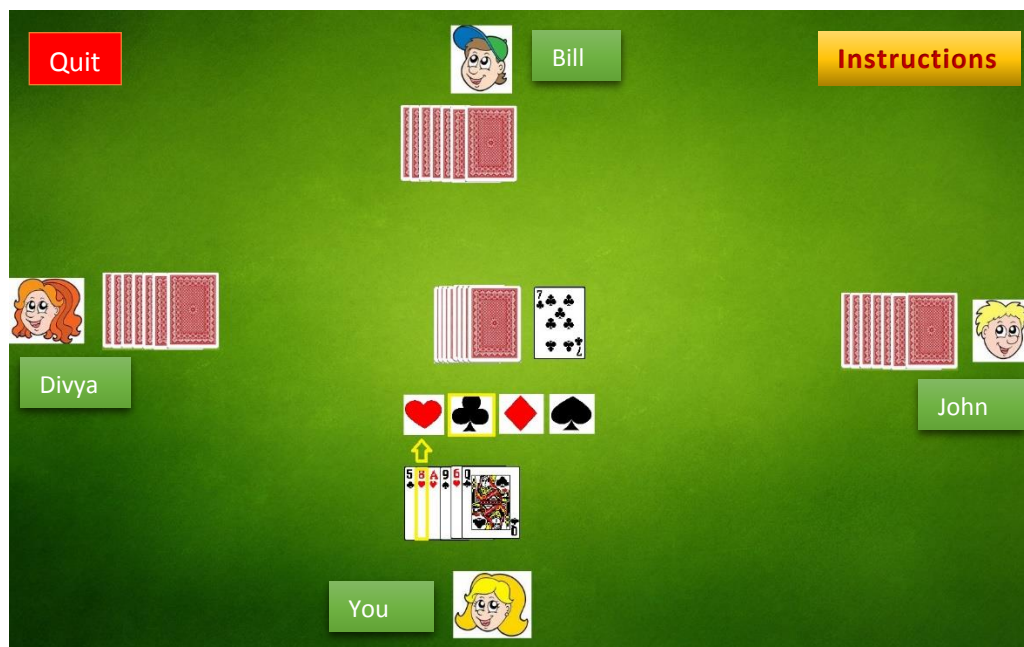


The below screen demonstrates the game screen for four players. Each player is distributed with seven cards. Bill, John and Divya are AI players who are the opponents of actual player. Player can view the instructions page by clicking 'Instructions' button and click the 'Quit' button to terminate the game at any time.

If you have any card that matches either the suit or the number on the top card, you have to click on that particular card to drop it. If you don't have a match you have to pick a card by clicking on the pile of cards.



If you would like to drop an eight card, then as soon as you click on this card you would be privileged with super power where you can nominate a suit which the next player must match.



First player to be left with zero cards is declared as the winner of the game as shown below along with the runner-up scores. Here in the winner screen, player will have options either to play the game again or exit from the application.



4.2 Hardware Interfaces

Not applicable.

4.3 Software Interfaces

Not applicable.

4.4 Communications Interfaces

Not applicable.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

Performance requirements will be recorded once the software is developed completely.

5.2 Safety Requirements

Not applicable.

5.3 Security Requirements

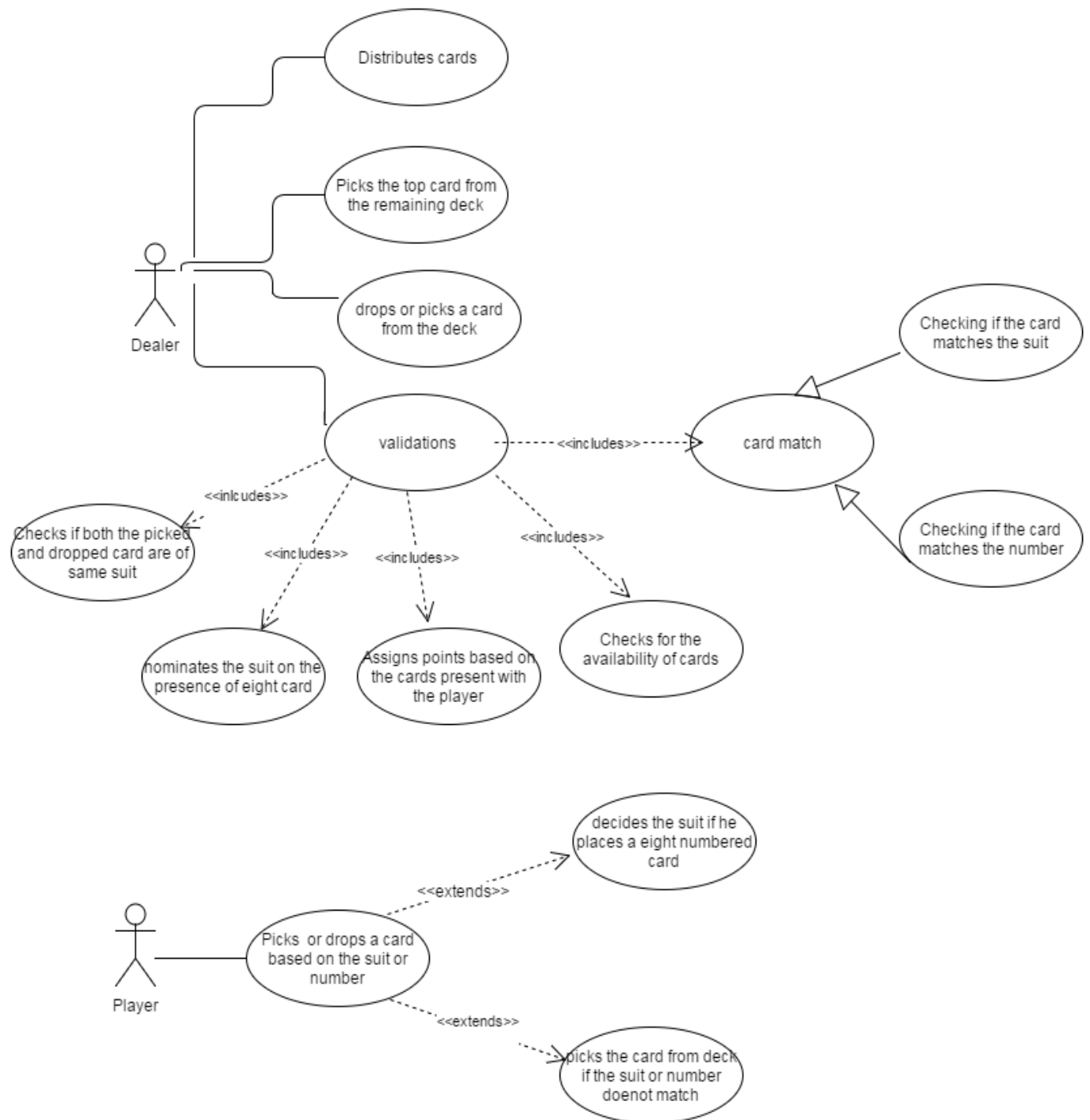
Not applicable.

5.4 Software Quality Attributes

The main advantage of this software is its reusability so that any possible changes can be done in the future. This software is compatible to run on any platform.

Appendix A: Analysis Models

6.1 Use Case Diagram



6.2 Activity Diagram

