TEAM ONE

Software Requirements Specification

Baker's Dozen Card Game

Alexander Federico

7/8/2015

Table of Contents

TEAM ONE

Vision and Scope

Baker's Dozen Card Game

Eric Plascencia, Alex Federico, Jerome Lester, Joe Herndon

7/8/2015

1. Business Requirements

1.1. Business Objectives

1.1.1. Achieve a customer satisfaction measure of at least 75% within a week of release
1.1.2. Develop a user-friendly application where the player does not express dissatisfaction more than once per game (know Baker's Dozen rules)
1.1.3. Develop a system that can create the initial setup of the card game in under 5 seconds (initial setup can be time consuming)
1.1.4. Develop a system that can create a unique initial setup (unique tableaus) for every 10 games (equivalent to deck being shuffled well)
1.1.5. Develop a system that displays the amount of time the user is spending in one game (can be a time-consuming game)

1.2.Vision Statement

For solitaire card players who want to play Baker's Dozen Solitaire card game, the Baker's Dozen Solitaire Game is a program that allows user to play Baker's Dozen on their computers. Unlike playing the physical card game our product will ensure the user is making legal moves and automatically set up each game.

2. Scope and Limitations

2.1. Major Features

2.1.1. Automatically shuffle and deal cards
2.1.2. Automatically set up the game board
2.1.3. Know and enforce the rules of Baker's Dozen
2.1.4. Display a graphical interface of the game Baker's Dozen
2.1.5. Display a timer for each game

2.2. Scope of Initial Release

2.2.1. Event-Response Table
- Found on page 5

TEAM ONE

Event Response Table

Baker's Dozen Card Game

Eric Plascencia, Alex Federico, Jerome Lester, Joe Herndon

7/8/2015

ID	Current State	Event	System Response	Next State
0	Game Stopped	User started program	Welcome Screen displayed	Game Welcome
1	Game Welcome	User clicks "Start Game"	1. Game Background loaded 2. Foundation area created 3. Tableau area 1 created with 7 empty Tableaus 4. Tableau area 2 created with 6 empty Tableaus 5. Deck of 52 cards Created 6. Each king is delt in to an empty tableue 7.Deck of 48 cards shuffled 8. 4 cards delt to each empty Tableau	Game Play
2	Game Play	User moves card from tableau onto another within the tableau	System will check that the rank of the new card is exactly one higher than the rank of the card being moved	a. System will accept the card
			else if it fails	b. System will reject the card
2a	System will accept the card		The new card will be moved to the new tableau	Game Play
2b	System will reject the card		The card will be moved back to the tableau with no change in the tableau	Game Play
3	Game Play	User moves card from tableue to the foundation	System will check: 1). That the rank that the rank of the foundation card is one less than the rank of the tableau card being moved AND 2). That both the foundation and tableau card are the same suit	a. System will accept the card
			else if it fails, system will check: 1). If the tableau card is an ace AND 2). That the foundation is empty	a. System will accept the card
			else if it fails	b. System will reject the card
3a	System will accept the card		The tableau card will be moved to the foundation	Game Play
3b	System will reject the card		The card will be moved back to the tableau with no change in the foundation	Game Play
4	Game Play	User moves card from foundation to the tableau	System will check that the rank of the new card from the foundation is exactly one lower than the rank of the card in the tableau	a. System will accept the card
			else if it fails	b. System will reject the card
4a	System will accept the card		The new card will be moved from the foundation to the tableau	Game Play
4b	System will reject the card		The card will be moved back to the foundation with no change in the tableau or foundation	Game Play
5	Game Play	User completes Foundation	Game Win Screen displayed	Game Win
6	Game Play	User clicks "Exit"	Program closes	Game Stopped
7	Game Play	User clicks "Replay"	Program closes	Game Start
8	Game Win	User clicks "Exit"	Program closes	Game Stopped
9	Game Win	User clicks "Replay"	Program closes	Game Welcome
10	Game Welcome	User clicks "Exit"	Program closes	Game Stopped

TEAM ONE

Software Requirements Specification

Baker's Dozen Card Game

Eric Plascencia, Alex Federico, Jerome Lester, Joe Herndon

7/8/2015

1. Introduction

1.1. Purpose

The purpose of this document is to outline the plan for the Baker's Dozen Card Game system for Our Client. This document is intended to outline the work to be performed by Our Client and will serve as a reference throughout development of the Baker's Dozen Car Game system. This document serves as a contract between Our Client and SWE Engineering Requirements Final Project Team 1, specifying the work to be performed

2. Overall Description

This product will be developed within the confines of the SWE 3623 Summer 2015 course. The final developed product will only be a prototype. The Baker's Dozen Card Game system should be usable, but may not adhere to all of the non-functional requirements outlined in this document.

2.1. Product Perspective

The Baker's Dozen Card Game software system is a stand-alone project that allows a user to play the Solitaire game Baker's Dozen on their desktops. This project does not involve interaction with other programs as a greater whole.

2.2. Product Stakeholders and Users

User Class	Description
Card Player	A card player is someone who has installed and played the Baker's Dozen Card Game system on their computer.

2.3. Product Features

2.3.1. Automatically shuffle and deal cards
2.3.2. Automatically set up the game board
2.3.3. Know and enforce the rules of Baker's Dozen
2.3.4. Display a **graphical** interface of the game Baker's Dozen

3. Functional requirements

3.1 The system shall display a welcome screen when the program starts

3.1.1 The system shall allow the user to select a start or exit button

3.1.1.1 The system shall close when the exit button is selected

3.2 The system shall start the game when the start button is selected

3.2.1 The system shall load the game background

3.2.2 The system shall create four empty spots, as defined in the glossary, for the foundation

3.2.3 The system shall create the first tableau with 7 empty tableaus

3.2.4 The system shall create the second tableau with 6 empty tableaus

3.2.5 The system shall create a deck of 52 cards

3.2.6 The system shall deal each king to an empty tableau

3.2.7 The system shall shuffle the deck of 48 cards once each king has been dealt

3.2.8 The system shall deal 4 cards into each empty tableau

3.2.9 The system shall deal 3 cards into every tableau that begins with a king

3.2.10 The system shall not receive user input while the deck is being dealt

3.3 The system shall allow the user to move a card from the foundation to the tableau

3.3.1 The system shall not allow a card to be moved to an empty tableau

3.3.2 The system shall check if the tableau card is one rank higher than the foundation card before allowing the card to be placed

3.3.3 The system shall not allow a card to be moved off screen

3.3.4 The system shall only allow the card most recently placed on the foundation to be moved

3.4 The system shall allow the user to move a card from the tableau to the foundation

3.4.1 The system shall check if the tableau card is one higher than the foundation card before allowing the card to be placed

3.4.2 The system shall only allow an ace to be placed in an empty foundation

3.4.3 The system shall only allow cards with the same suit to be placed in each foundation

3.5 The system shall allow the user to move a card from a tableau to another tableau

3.5.1 The system shall check if the card being moved is one rank less than receiving

Tableau's last played card before allowing the card to be placed

3.5.2 The system shall not allow a card to be placed on an empty tableau

3.5.3 The system shall only allow the last card placed on the tableau to be moved

3.6 The system shall allow the user to move a card from a foundation to another foundation

3.6.1 The system shall only place the card being moved if and only if the card is an Ace and the receiving foundation is empty

3.7 The system shall display the Game Win screen when the fourth king is moved to the foundation

3.8 The system shall allow the user to exit the program or start a new game at any point after the welcome screen.

4. Quality Attributes

4.1 Performance Requirements

4.1.1 The system shall shuffle and deal cards in under 5 seconds

4.1.2 The system shall move a card from tableau to tableau in under second

4.1.3 The system shall move a card from tableau to foundation in under one second

4.2 Software Quality:

4.2.1 a user friendly application where the player does not express dissatisfaction more than once per game

Appendices

A: Glossary

A.1 Empty Spot/ Tableau spot : A space on the game board. At the beginning of the game, the system creates 13 tableau spots on the board, 7 on top and 6 on the bottom.

A.2 Foundation: A space to the left of the game board where a player places its cards from the tableau. According to baker's dozen rules, each foundation represents a suite. Cards placed onto the foundation. A card placed on the foundation must be exactly one rank higher than the card below it

A.3 Foundation: A space to the left of the game board where a player places its cards from the tableau. According to baker's dozen rules, each foundation represents a suite. Cards placed onto the foundation. A card placed on the foundation must be exactly one rank higher than the card below it

A.4 Rank: The rank order of a deck is Ace , 2-10, Jack, Queen, and King.

A.5 Deck of cards: A proper deck of cards has 52 cards with 4 suits(heart, diamonds spades, clubs. Each suit has numbers 2-10 , Jack, Queen, King and Ace.

TEAM ONE

Use Cases

Baker's Dozen Card Game

Version 3

Eric Plascencia, Alex Federico, Jerome Lester, Joe Herndon

7/3/2015

USE CASES

Use Case ID and Name:	**UC-1 Launch Game**
Created By:	Eric Plascencia
Date Created:	7/3/15
Primary Actor:	Player
Description:	The Player launches the card game program on device and the system displays a welcome screen.
Trigger:	Player launches program
Preconditions:	PRE-1. User's device is turned on. PRE-2. User has installed card game on device.
Postconditions:	POST-1. Game welcome screen is displayed.
Normal Flow:	**1.0 Launch the Game** 1. Player launches program. 2. System greets Player with a welcome screen. 3. System gives Player the option to Start Game or Exit Game
Alternative Flows:	None
Exceptions:	None

Use Case ID and Name:	**UC-2 Start Game**
Created By:	Alex Federico
Date Created:	7/1/15
Primary Actor:	Player
Description:	The Player starts a game and the system sets up the game board and deals the deck.
Trigger:	Player starts a game
Preconditions:	PRE-1. UC-1
Postconditions:	POST-1. System is in Game Play.

Normal Flow:	**2.0 Start a Game** 1. Player selects Start Game option on Welcome Screen. 2. Game background loads. 3. Foundation area is created. 4. Tableau areas 1 and 2 are created. 5. Deck is created 6. Deck is shuffled and dealt.
Alternative Flows:	None
Exceptions:	None

Use Case ID and Name:	**UC-3 Replay Game**
Created By:	Alex Federico
Date Created:	7/1/15
Primary Actor:	Player
Description:	The Player chooses to restart a game during Game Play and the system sets up the game board and deals the deck again.
Trigger:	Player Replays game
Preconditions:	PRE-1. UC-2 PRE-2. Player is in Game Play.
Postconditions:	POST-1. System starts a new game.
Normal Flow:	**3.0 Replay Game** 1. Player selects Replay Game option during Game Play. 2. Previous game elements are cleared. 3. Game background loads. 4. Foundation area is created. 5. Tableau areas 1 and 2 are created. 6. Deck is created. 7. Deck is shuffled and dealt.
Alternative Flows:	None
Exceptions:	None

Use Case ID and Name:	**UC-4 Exit Game**
Created By:	Eric Plascencia
Date Created:	7/3/15
Primary Actor:	Player
Description:	The Player chooses to Exit a game during Game Play or Welcome Screen and the system stops the game and closes the program.
Trigger:	Player Exits game
Preconditions:	PRE-1. UC-1 PRE-2. UC-2 PRE-3 Player is in gameplay

Postconditions:	POST-1. System stops a game. POST-2. Program closes.
Normal Flow:	**4.0 Exit a Game** 1. Player selects Exit Game option during Game Play or Welcome Screen. 2. System stops game. 3. System closes program.
Alternative Flows:	None
Exceptions:	None

Use Case ID and Name:	**UC-5 Successfully Place Card from Tableau to Foundation**
Created By:	Jerome Lester
Date Created:	7/1/15
Primary Actor:	Player
Description:	The Player selects a card in the tableau and moves it into the foundation. The system checks and determines the move is legal and places card into foundation.
Trigger:	Player selects a card in the tableau and moves it into the foundation
Preconditions:	PRE-1. UC-2 PRE-2. Player is in Game Play.
Postconditions:	POST-1. System places card in the foundation
Normal Flow:	**5.0 Move a Card from Tableau to Foundation** 1. Player selects a card from the tableau 2. Player moves selected card into the foundation. 3. The system checks and determines the move is legal. 4. The card is placed into the foundation. 5. If the move is illegal, see UC-6.
Alternative Flows:	None
Exceptions:	None

Use Case ID and Name:	**UC-6 Unsuccessfully Place Card from Tableau to Foundation**
Created By:	Eric Plascencia
Date Created:	7/3/15
Primary Actor:	Player
Description:	The Player selects a card in the tableau and moves it into the foundation. The system checks and determines the move is illegal and does not place card into foundation.
Trigger:	Player selects a card in the tableau and moves it into the foundation
Preconditions:	PRE-1. UC-2 PRE-2. Player is in Game Play.
Postconditions:	POST-1. System returns the card to its previous position in the tableau.
Normal Flow:	**6.0 Move a Card from Tableau to Foundation** 1. Player selects a card from the tableau 2. Player moves selected card into the foundation. 3. The system checks and determines the move is illegal. 4. The card is not placed into the foundation. 5. The system returns the card to its previous position in the tableau.
Alternative Flows:	None
Exceptions:	None

Use Case ID and Name:	**UC-7 Successfully Move Card from Foundation to Tableau**
Created By:	Eric Plascencia
Date Created:	7/1/15
Primary Actor:	Player
Description:	The Player selects a card in the foundation and moves it into the tableau. The system checks and determines the move is legal and places card into tableau.
Trigger:	Player selects a card in the foundation and moves it into the tableau
Preconditions:	PRE-1. UC-2 PRE-2. Player is in Game Play.
Postconditions:	POST-1. System places card in the tableau.
Normal Flow:	**7.0 Move a Card from Foundation to Tableau** 1. Player selects a card from the foundation 2. Player moves selected card into the tableau. 3. The system checks and determines the move is legal. 4. The card is placed into the tableau. 5. If the move is illegal, see UC-8.
Alternative Flows:	None
Exceptions:	None

Use Case ID and Name:	**UC-8 Unsuccessfully Move Card from Foundation to Tableau**
Created By:	Eric Plascencia
Date Created:	7/1/15
Primary Actor:	Player
Description:	The Player selects a card in the foundation and moves it into the tableau. The system checks and determines the move is illegal and does not place card into tableau.
Trigger:	Player selects a card in the foundation and moves it into the tableau
Preconditions:	PRE-1. UC-2 PRE-2. Player is in Game Play.

Postconditions:	POST-1. System returns the card to its previous position in the foundation.
Normal Flow:	**8.0 Move a Card from Foundation to Tableau** 1. Player selects a card from the foundation 2. Player moves selected card into the tableau. 3. The system checks and determines the move is illegal. 4. The card is not placed into the foundation. 5. The system returns the card to its previous position in the foundation.
Alternative Flows:	None
Exceptions:	None

Use Case ID and Name:	**UC-9 Successfully Move Card from Tableau to Tableau**
Created By:	Alexander Federico
Date Created:	7/1/15
Primary Actor:	Player
Description:	The Player selects a card in the tableau and moves it into another tableau. The system checks and determines the move is legal and places the card in the other tableau.
Trigger:	Player selects a card in a Tableau
Preconditions:	PRE-1. UC-2 PRE-2. Player is in Game Play.
Postconditions:	POST-1. System places card in the other tableau
Normal Flow:	**9.0 Move a Card from Tableau to Tableau** 1. Player selects a card from a tableau 2. Player moves selected card into the tableau. 3. The system checks and determines if the move is legal or not. 4. If the move is legal, the card is placed into the foundation. 5. If the move is illegal, see UC-8.
Alternative Flows:	None
Exceptions:	None
Use Case ID and Name:	**UC-10 Unsuccessfully Move Card from Tableau to Tableau**

Created By:	Eric Plascencia
Date Created:	7/1/15
Primary Actor:	Player
Description:	The Player selects a card in the tableau and moves it into another tableau. The system checks and determines the move is illegal and does not place card into tableau.
Trigger:	Player selects a card in the foundation and moves it into the tableau
Preconditions:	PRE-1. UC-2 PRE-2. Player is in Game Play.
Postconditions:	POST-1. System returns the card to its previous position in the foundation.
Normal Flow:	**10.0 Move a Card from Tableau to Tableau** 1. Player selects a card from a tableau. 2. Player moves selected card into the tableau. 3. The system checks and determines the move is illegal. 4. The card is not placed into the tableau. 5. The system returns the card to its previous position in the tableau.
Alternative Flows:	None
Exceptions:	None

Use Case ID and Name:	**UC-11 Winning a game**
Created By:	Jerome Lester
Date Created:	7/1/15
Primary Actor:	Player
Description:	The Player moves the last King from the tableau and moves it into the foundation to win the game.
Trigger:	Player selects the last King in the tableau and moves it into the foundation
Preconditions:	PRE-1. UC-2 PRE-2. UC-5 PRE-3. Player is in Game Play

Postconditions:	POST-1. System places card in the foundation
Normal Flow:	**11.0 Move last King from Tableau to Foundation** 1. Player selects last King from the tableau 2. Player moves the last King into the foundation. 3. The system displays a win screen. 4. The system prompts player to Replay or Exit.
Alternative Flows:	None
Exceptions:	None