# Juan Diego Gil

Esue Torres Morales

Cesar Augusto Jimenez Reina

# Identificación del problema y análisis de requerimientos

## Caso de Estudio:

|  |  |
| --- | --- |
| Cliente | Empresa de juegos |
| Usuario | Gamers of all ages who enjoy digital card games. |
| Requerimientos funcionales | RF\_1 Distribution of cards.  RF\_2 Play Card.  RF\_3 Draw Card.  RF\_4 Special Cards  RF\_5 Create User Interface  RF\_6 Start Game  RF\_7 End Game.  RF\_8 Review Cards  RF\_9 Manage Player Turn. |
| Contexto del problema | Uno is a popular card game played with a special deck of cards. The objective of the game is to be the first player to run out of cards. To digitize this game, a system that can handle the game logic and user interaction efficiently and attractively is required. |
| Requerimientos no funcionales | 1. Performance: The game must respond to user actions without noticeable delays. 2. Usability: The user interface should be intuitive and easy to use for people of all ages. 3. Scalability: The system must be able to support an increasing number of simultaneous users. 4. Security: The game must protect user information and ensure that games cannot be manipulated by third parties. 5. Compatibility: The game must be compatible with different operating systems where Java can be run. 6. Maintainability: The code must be well documented and structured to facilitate future updates or corrections. 7. Internationalization: The game must support localization for different languages and regions. 8. Accessibility: The game must be accessible for users with disabilities, including high contrast options and support for screen readers. 9. Aesthetics: The visual design of the game must be attractive and remain consistent with the "Uno" theme. 10. Portability: The game should be easily portable between different platforms that support Java without the need for significant code changes. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Identificador y nombre | RF\_1 Distribución de cartas. | | | |
| Resumen | At the start of the game, the system must deal 7 cards to each player from a 108-card deck. | | | |
| Entradas | Nombre entrada | Tipo de dato | | Condición valores válidos |
| No aplica | - | |  |
|
|
|
| Resultado o Postcondición | Each player has 7 cards in his hand. | | | |
| Salidas | Nombre salida | | Tipo de dato | Formato |
| playerCard | | List | Cada objeto Carta debe ser único y parte de una baraja de 108 cartas. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Identificador y nombre | RF\_2 Jugar Carta. | | | |
| Resumen | On his turn, the player must place a card on the discard pile that matches in color, number or symbol with the top card. | | | |
| Entradas | Nombre entrada | Tipo de dato | | Condición valores válidos |
| No aplica |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
| Resultado o Postcondición | The selected card is placed on the discard pile.. | | | |
| Salidas | Nombre salida | | Tipo de dato | Formato |
| SelectedCard | | Card | Debe coincidir en color, número o símbolo con la carta superior del montón de descarte. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Identificador y nombre | RF\_3 Robar Carta. | | | |
| Resumen | If the player cannot play, he must draw a card from the deck. | | | |
| Entradas | Nombre entrada | Tipo de dato | | Condición valores válidos |
| No aplica |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
| Resultado o Postcondición | The player adds a card to his hand. | | | |
| Salidas | Nombre salida | | Tipo de dato | Formato |
| robbedCard | | Card | Must be a valid card in the 108-card deck.. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Identificador y nombre | RF\_4 Cartas Especiales. | | | |
| Resumen | The game includes special cards such as color change, draw 2, reverse and jump, each with a specific action. | | | |
| Entradas | Nombre entrada | Tipo de dato | | Condición valores válidos |
| specialCard | Card | | Must be one of the valid special cards (color change, draw 2, reverse, jump). |
|  |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
| Resultado o Postcondición | The special action corresponding to the card is executed. | | | |
| Salidas | Nombre salida | | Tipo de dato | Formato |
| specialAction | | String | It must describe the special action performed by the card played. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Identificador y nombre | RF\_5 Crear Interfaz de usuario. | | | |
| Resumen | The system must provide a graphical interface for players to interact with the game. | | | |
| Entradas | Nombre entrada | Tipo de dato | | Condición valores válidos |
| No aplica |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
| Resultado o Postcondición | The graphical interface is displayed to the user. | | | |
| Salidas | Nombre salida | | Tipo de dato | Formato |
| graphicInterface | | GUI | It must be visually understandable and allow interaction with the game. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Identificador y nombre | RF6\_Comenzar Juego | | | |
| Resumen | The system should offer an option to start a new game of Uno. | | | |
| Entradas | Nombre entrada | Tipo de dato | | Condición valores válidos |
| No aplica |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
| Resultado o Postcondición | The initial state of the game is established and the game begins. | | | |
| Salidas | Nombre salida | | Tipo de dato | Formato |
| initialState | | State | It should represent the initial state of a new batch of Uno. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Identificador y nombre | RF7\_Terminar Juego | | | |
| Resumen | The system must identify when a player runs out of cards and declare him the winner, ending the game. | | | |
| Entradas | Nombre entrada | Tipo de dato | | Condición valores válidos |
| No aplica |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
| Resultado o Postcondición | The game ends and a winner is declared. | | | |
| Salidas | Nombre salida | | Tipo de dato | Formato |
| winner | | String | It must be the name of the player who ran out of cards first. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Identificador y nombre | RF8\_ **Revisar Cartas** | | | |
| Resumen | Players must be able to see their cards at any time during the game. | | | |
| Entradas | Nombre entrada | Tipo de dato | | Condición valores válidos |
| No aplica |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
| Resultado o Postcondición | The player knows the cards in his hand. | | | |
| Salidas | Nombre salida | | Tipo de dato | Formato |
| handCard | | ListCard | It must show all the cards that the player has in his hand. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Identificador y nombre | RF\_9 Manejar Turno de Jugadores | | | |
| Resumen | The system must control the order of the turns and pass the turn to the next player appropriately. | | | |
| Entradas | Nombre entrada | Tipo de dato | | Condición valores válidos |
|  |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
|  |  | |  |
| Resultado o Postcondición | El turno pasa al siguiente jugador en la secuencia. | | | |
| Salidas | Nombre salida | | Tipo de dato | Formato |
| actualPlayer | | String | You must indicate the name of the player whose turn it is to play. |