DAT602 ASSESSMENT I MILESTONE I

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Contents:

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Milestone I

1. Game Description:

1.1 Game Premise:

The game outlined in this document referred to as "Corvus" will revolve around the user trying to scare crows off of their area of the board. Points will be gained for how many crows you can get to land on the opponent's field. A crow will take up 1 game tile and multiple will be on each field. The game will be played by two users at a time (one on each field) and the game will end when a player gets a 100 score or after 15 minutes of gameplay.

1.2 Login:

When the game is run, players will be prompted to log in with an email/username and password. If the email isn't found in the database then the player will be asked if they wish to create an account. When registering an account the player will be required to enter a unique email and a password. However, if the email/username is already in the database and the password does not match what is stored against the email, the app will log the wrong attempts. The user will become locked out upon 5 wrong entries. Once an account is created the user will be prompted to log in again.

1.3 Home:

Upon player login to the game they will be provided a list of options; Quick join(Finds a random game), join lobby(allows the player to join from a list of available lobbies), create a game(allows the player to create a new lobby) and players(which provides a list of online players that could be invited to a lobby). Players will also have the option to log out. If the player has admin privileges, they will also be allowed to launch an administrator window.

1.4 Gameplay:

Upon entering a game the user will be spawned onto the gameboard, the gameboard consists of two tiled halves. The players half and the opponents half. Once both players have spawned in they will have 15 seconds to set up, this may include setting up traps or decoys for the birds or just positioning the character. After the 15 seconds is up the match will begin and the birds will spawn at random. Once the player, trap, or decoy is within an adjacent tile the birds will "fly" away. As stated above, the players will have access to two different item types. Decoys and traps, Decoys will deter birds from landing in an area around it while traps will startle birds in a larger area but will disappear after being used. Decoys will stay for a set amount of time, becoming less effective as the birds get used to it.
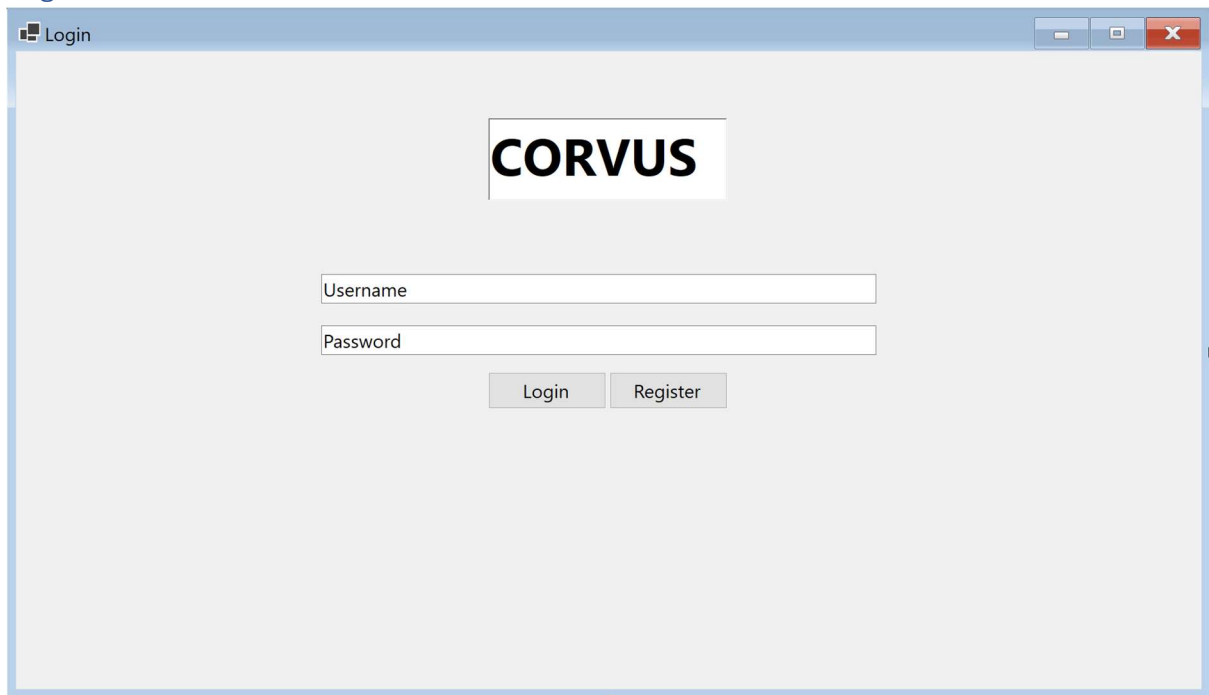
1.5 Objective and Scoring:

Scoring will be calculated based on how many birds are present on the opponent's board, 1 bird counts for 1 point. The first player to 100 points wins. Scoring will be updated/calculated at 3-second intervals.

1.6 Administration:

Certain accounts will be given administrative privileges to assist in the running and maintaining of the Corvus player ecosystem, these obligations will range from assisting with locked accounts, forgotten passwords to deleting player accounts if they are abusive, cheating, etc.
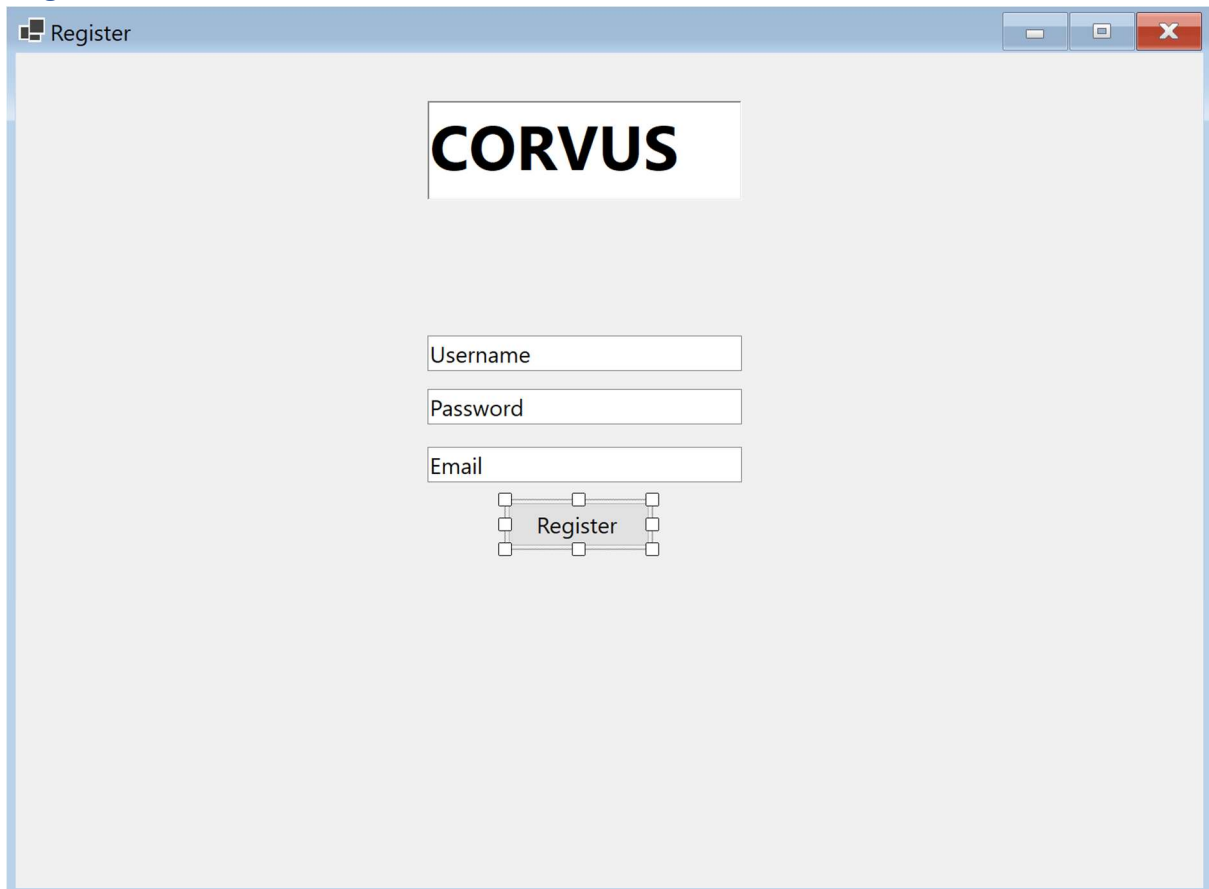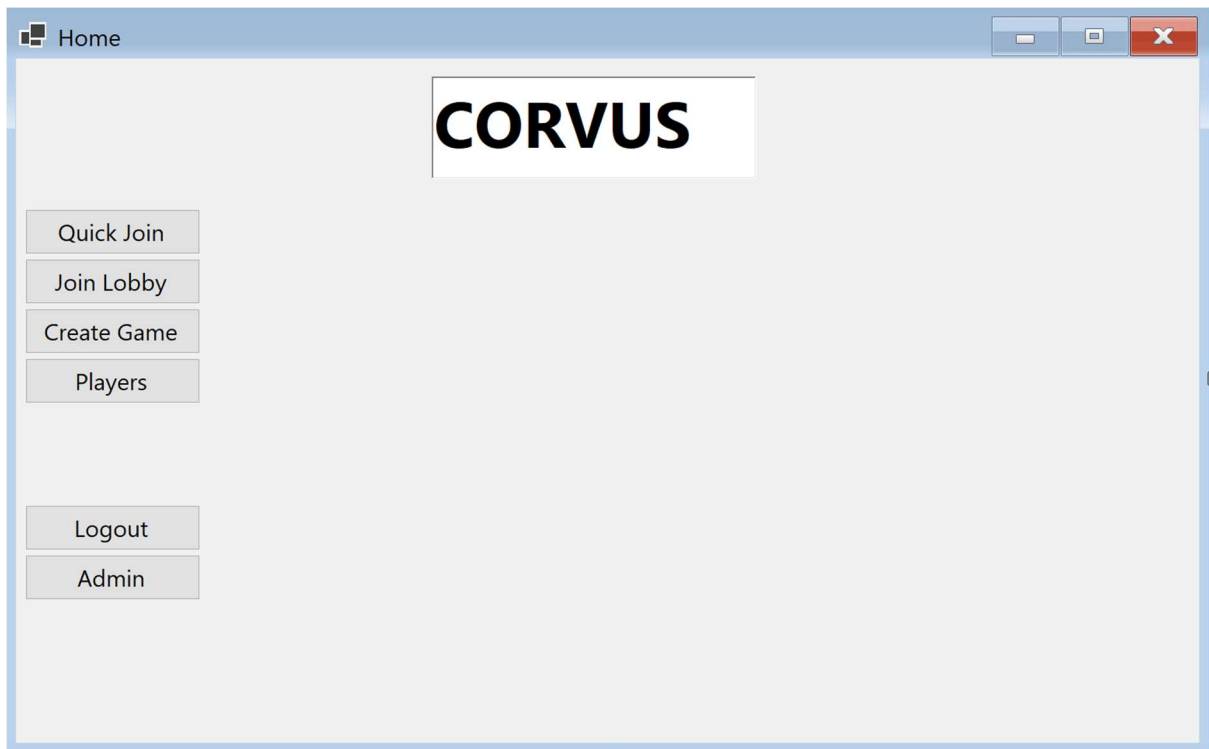
Storyboards:

Login:

Register:

Home:

Home

CORVUS

Quick Join

Join Lobby

Create Game

Players

Logout

Admin

Join Lobby:

Join_Lobby

CORVUS

Lobby Name	Player Count
Lobby1	0/2
Lobby2	0/2
Lobby3	1/2
Lobby4	2/2
Lobby5	2/2
Lobby6	2/2

Close

Create Lobby:

CreateLobby — □ ▢ ✕

CORVUS

Lobby Name

Lobby Notes:

Create

Close

Player List:

PlayerList — □ ▢ ✕

Online Players

Username	Status
Dave	In-Game
Jim	In-Game
Xander	Online
Matt	Online
Nicole	Online

Close

Log out:

Logout

Logout

Are you sure?

| Yes | No |

Admin Window:

Admin

Admin

Player Controls

Register Player

Edit Player

Delete Player

Game Controls

Kill Game

Close

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GameBoard:

Corvus Game board: | 53 | Score | 49 |

| ● Player | ▲ Crow | ✦ Trap | ◆ Decoy |

Cannot Place/Move:

Cannot_Place

Cannot Place or Move to this tile, please choose a valid tile

Okay

Win Screen:

You Win

Return Home   View Board

Loss Screen:

LossScreen

You Lose

Return Home   View Board
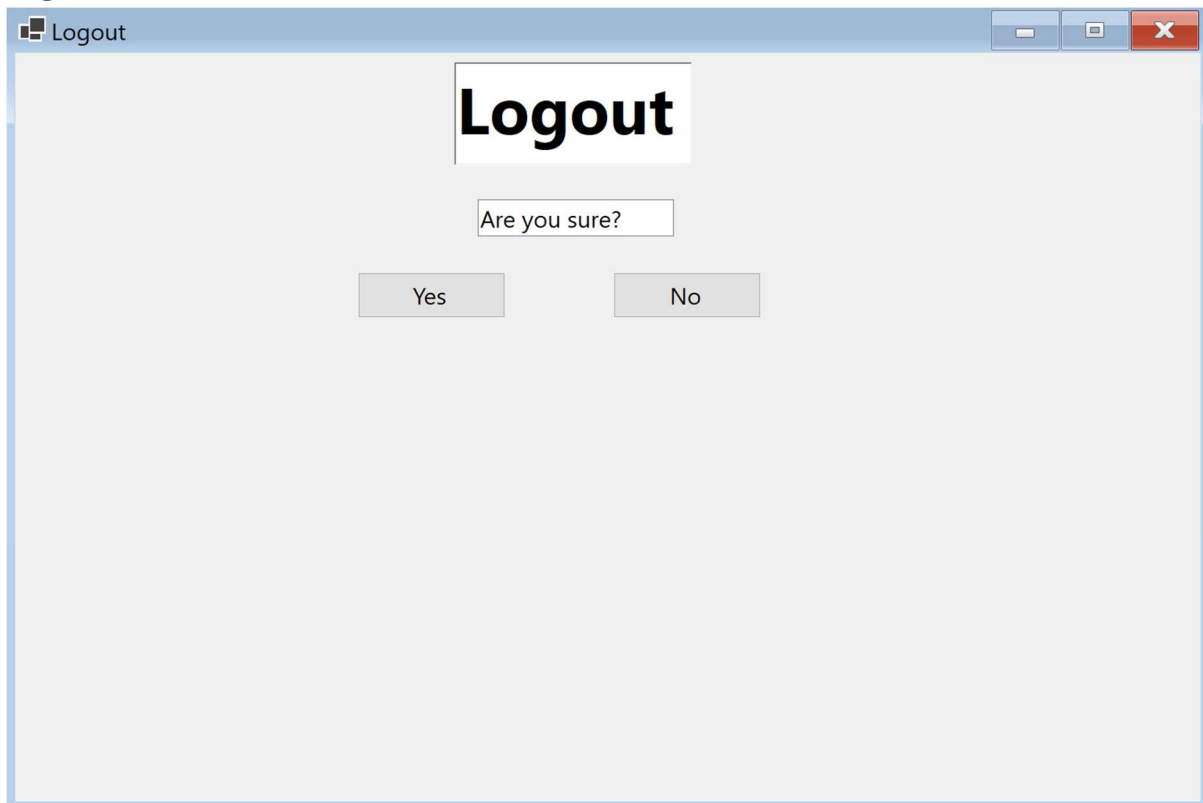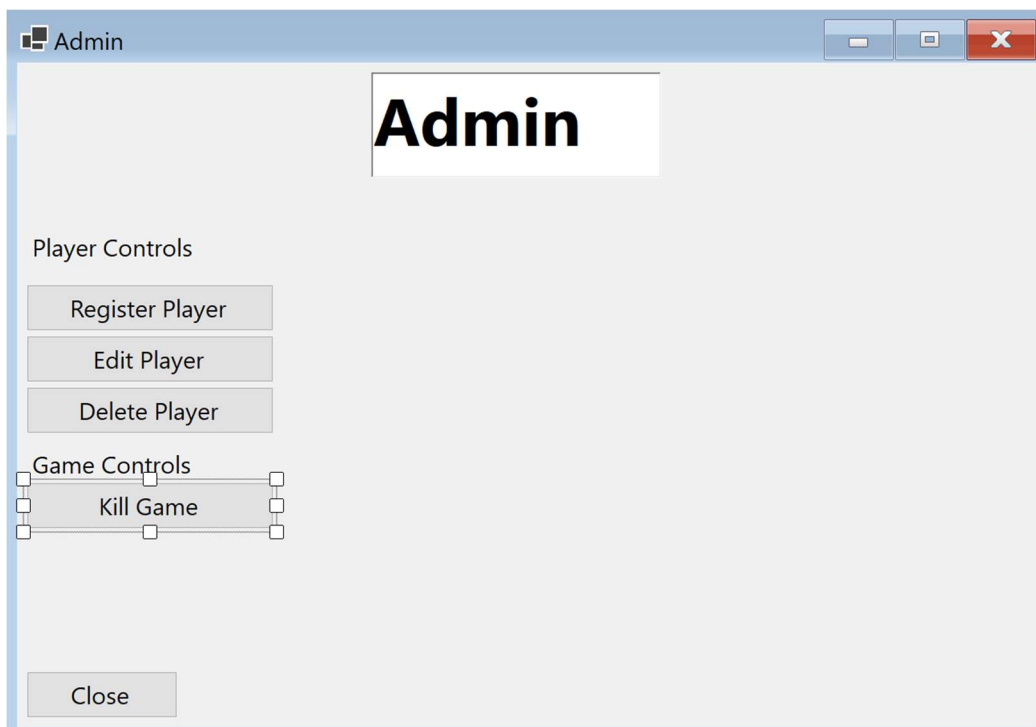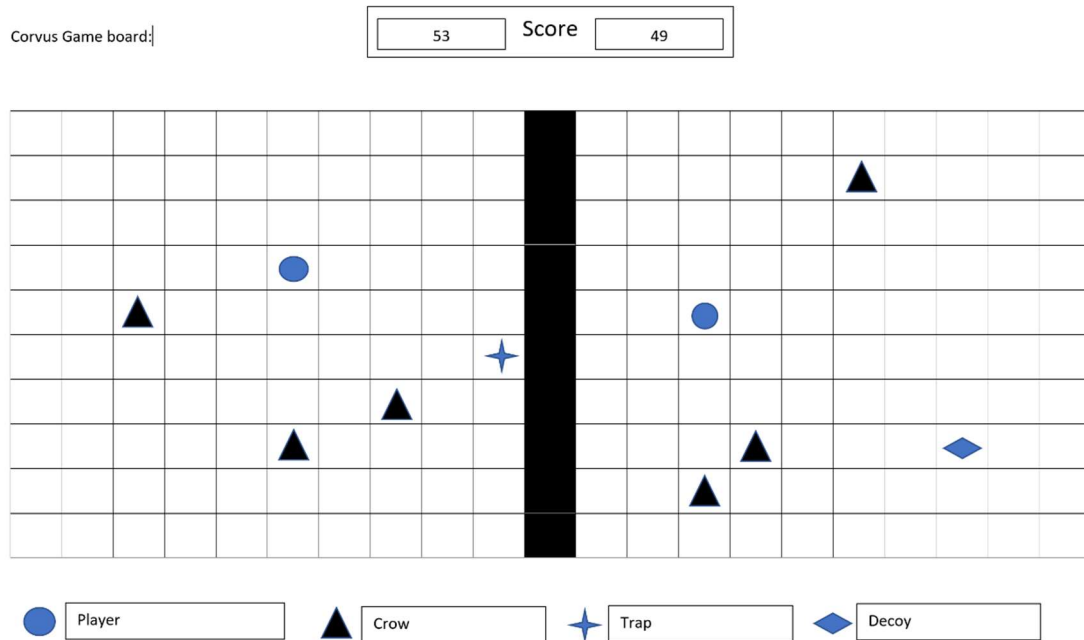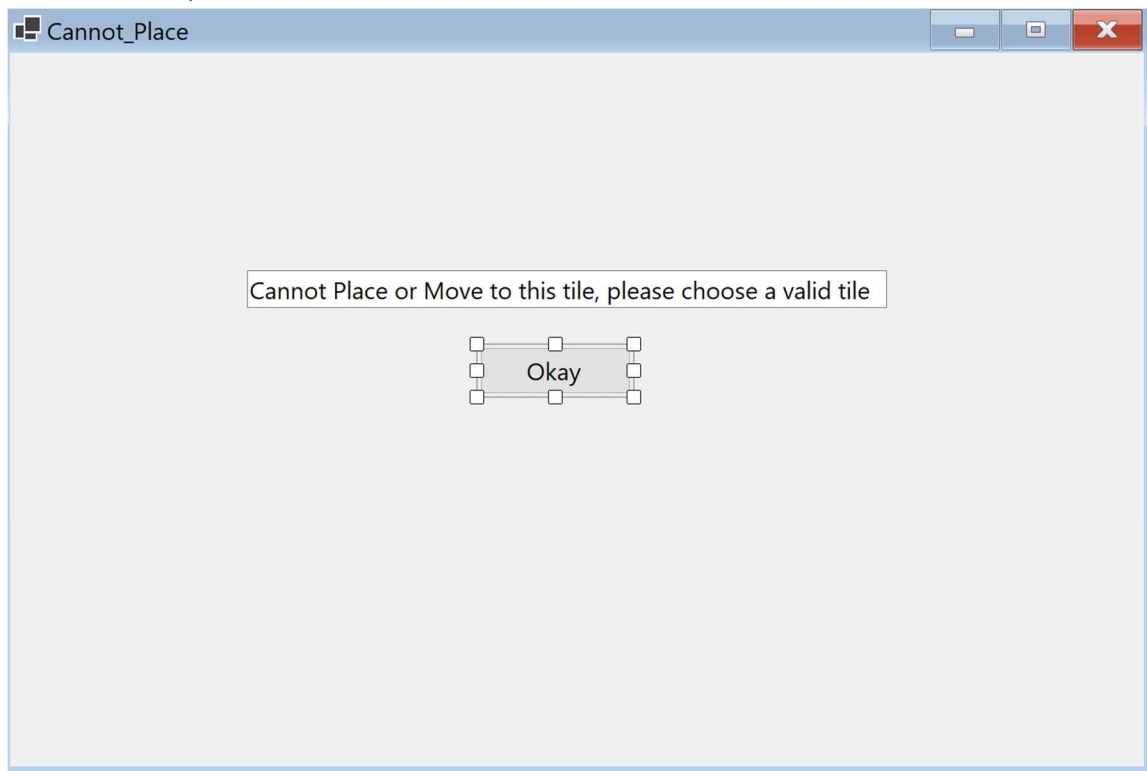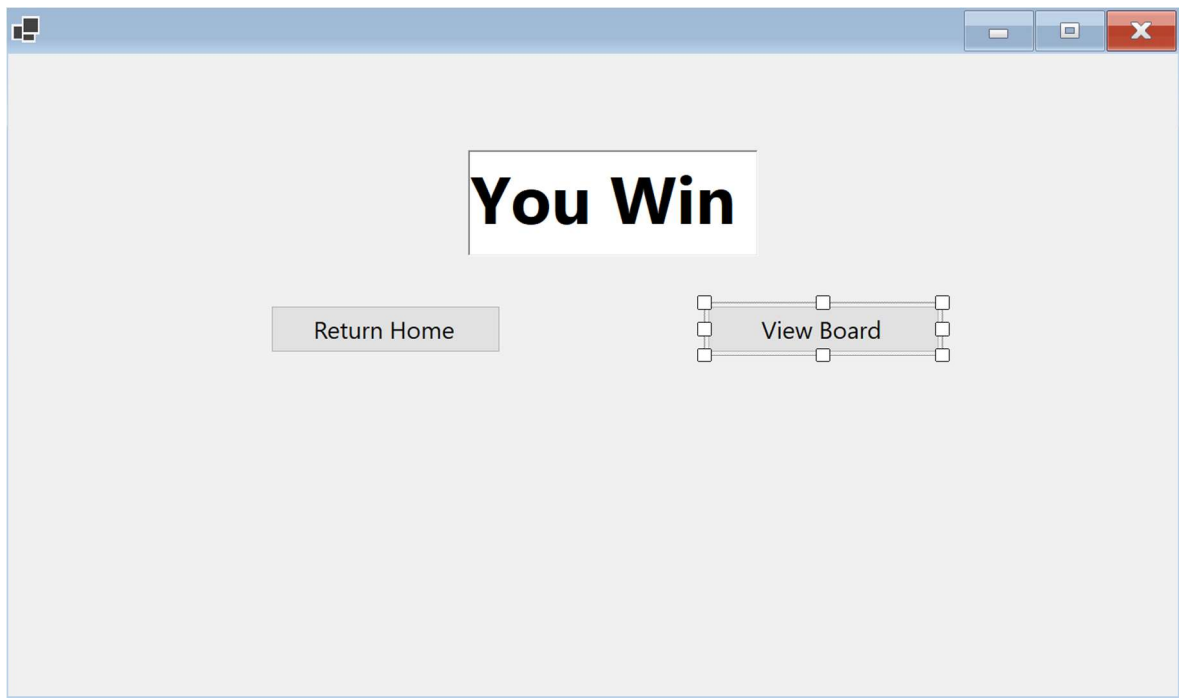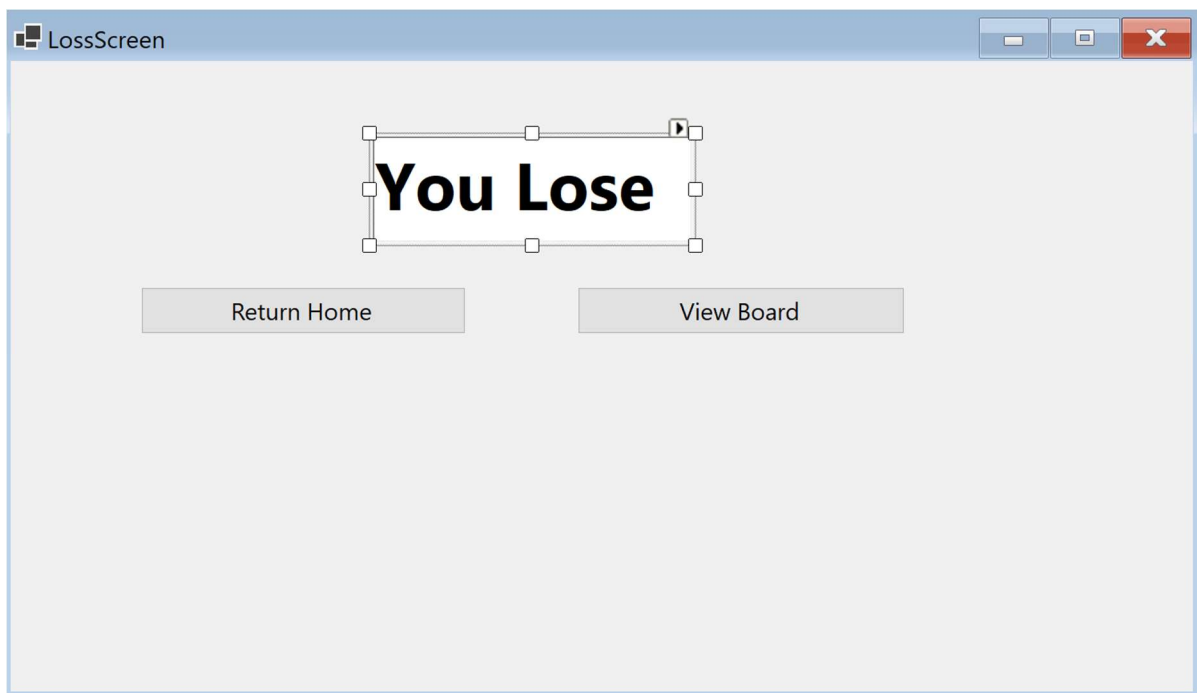
2.1 Screen design decisions:

Overall:

The overall design I wanted to encapsulate with the entire game application is a minimalistic, simple-to-follow design.

Login:

The login screen was designed to be minimal and easy to follow, Providing easy-to-follow steps that allow users to log in as well as register if it's their first time on the app. Since the user has to sign up if their name/email isn't in the system the login screen will also function as a registration screen. The user can put in an email and password, then be prompted for a username and any more information the app requires.

Home:

For the home screen, I wanted to maintain the minimal aesthetic but also provide a simple interface that doesn't overwhelm the user with options, to this end I made sure that big groups of data were put behind headers. Such as hiding all of the available lobbies under the join lobby header. I also wanted this screen to be the "hub" for the game, allowing the user to do anything they need to do before getting into a game. This includes creating a game, joining a game, editing options, running the administration window if you have the privileges, and logging out of the game.

Gameboard:

I wanted the gameboard to feel like it was an open expanse that the user had to defend. To achieve this I decided to make the game space a 20x10 board. This would provide each player with a 10x5 space to defend, the size of each side means that the players can place traps and decoys but still have to move around to scarecrows.

Admin:

The admin screen is all about maintaining the game, to this extent I wanted to make it a concise screen with all the necessary tools ready to use upon screen boot. To this end, I included all available commands compactly on this screen.

Entity Relationship Diagram:
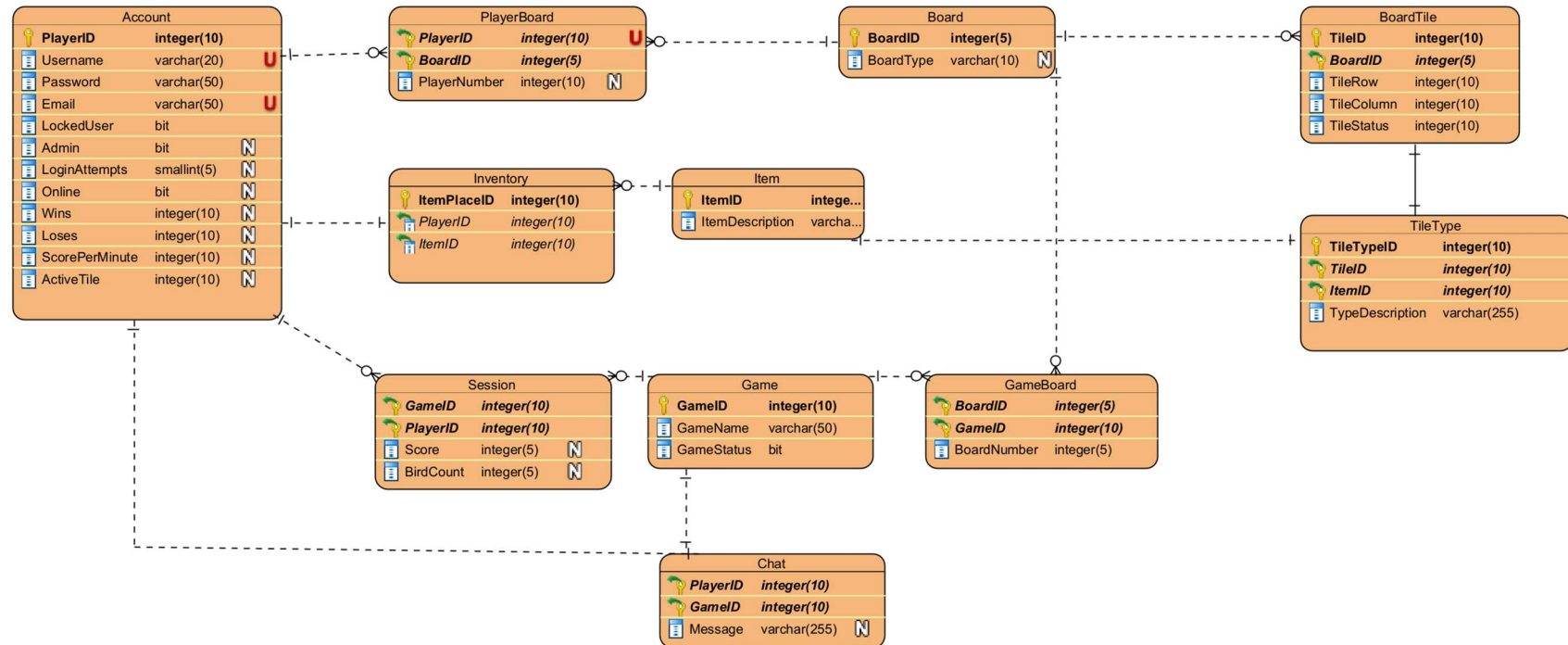
3. Crud Table:

Entity/Attribute	Check For Username	Register Account	Check For Correct Password	Lock Account	Successful Login	Start New Game	Quick Join/Join Lobby	Player Moves	Scoring	Game Ends	Player Logs Off	Open Admin Console	Admin Kill Running Game	Admin Delete Player	Admin Creates New Player	Admin Edits Existing Player Info	Player sends a Chat Message
Player	R	C			R	R		R	R			R		D	C	RU	R
Player ID		C				R		R	R			R		D	C	RU	R
Username	R	CR	R		R							R		D	CR	RU	R
Password		C	R											D	C	RU	
Email		CR												D	CR	RU	
Locked User		C		U										D	C	RU	
Admin		C			R									D	C	RU	
Login Attempts		C	R	U										D	C	RU	
Online		C			U						U			D	C	RU	
Wins		C								U				D	C	RU	
Losses		C								U				D	C	RU	
ScorePerMinute		C								RU			RU	D	C	RU	
ActiveTile		C				C	R	U			U			D	C	RU	
Game					R	C	R	U		U		R	U				R
Game ID					R	C	R					R					R
GameName					R	C	R					R					
Game Status						C	R			U	U	R	U				
Session					R	C	CR	U		R		R	R	D			
Player ID					R	C	CR					R	R	D			
Game ID					R	C	CR					R	R	D			
BirdCount						C	CR	RU	R		R			D			
Score						C	CR	U	RU	R	R		R	D			
Board						C	R	RU									
Board ID						C	R										
Board Type						C	R										
Player Board						C	CR					U		D			
Player ID						C	U					U		D			
Board ID						C	R							D			
Player Number						C	U					U		D			
Game Board						C	R										
Game ID						C	R										
Board ID						C	R										
Board Number						C	R										
Board Tile						C	R	RU									
Tile ID						C	R	R									
Board ID						C	R	R									
Tile Row						C	R	R									
Tile Column						C	R	R									
Tile Status						C	R	U									
TileType						CR	R	RU									
TileTypeID						C	R	R									
Tile ID						C	R	R									
ItemID						C	R	R									
TypeDescription						C	R	R									
Inventory						R	R	U						D			
ItemplaceID						R	R										

PlayerID						R	R						D			
ItemID						R	R	U								
Item						R	R									
ItemID						R	R									
Type						R	R									
Chat						C	R					R				U
PlayerID						C	R									U
GameID						C	R									U
Message						C										C

3.1 C.R.U.D Analysis:

To develop the CRUD table above I used the entities from my ERD as the left hand column and the storyboards further up in this report as the actions along the top.

Check For Username, Register account, Check for Password, Lock account and Successful Login:

I decided to merge these events as it made the most sense to me, this event will be achieved by using a simple select where statement that looks for a specific username and password in the account table, if neither is found the user will be prompted to fill in extra information to register, if the username is found but the password isn't/is incorrect then the user will be requested to try again and the login attempts column of the Account table will be incremented by one. The procedure will then check to see if the login attempts column is greater than or equal to 5 and if it is the account will become locked. If both username and password are correct the user will be logged in and taken to the home screen.

Quick Join/Join Lobby:

When a player joins a lobby the database will need to create new data as well as pull existing data from session and game tables. This will be more complex than just creating a game.

Create Game:

The database will need to populate the session and game tables with data so that someone wanting to join can pull the data from those tables.

Player Move, Scoring:

When the player moves the tile will be checked to see if there is a crow within a 1 tile space of it or if there is an item on the tile, if there is a crow present the crow will be "scared" and moved to a random tile on the opposing half, if there is an item it will be picked up. Score will be calculated at select intervals. When this is done the system will count the amount of tiles with a Crow status on the opponents half and add that many points to the points count, after this count, if a player has equal or greater to 100 points the game will be over.

Game End:

Upon game end the session will be concluded, the player with the most points or who reached 100 first will receive a you win message and the opponent will receive a you lose message. Both players Win, Loss and scoreperminute columns in the account table will be updated with new information.

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LogOff:

Upon logout the players online status will be change to false and the ActiveTile column will be updated with with the tileid of the players last location.

Admin:

When the admin window is booted the database will retrieve the online players as well as session and game info. This will allow the admin to kill active games. The admin also has the power to create new records or edit records in the account table. This facilitates the addition of new players.

Chat:

When a player wants to send a chat it will update the chat table with their playerID and the message they want to type.