

DAT602

Assignment

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MILESTONE 1

GAME DESCRIPTION

The game is based off the concept of the moon landing. Players control a spacecraft as it descends toward the surface of the moon. Using thrusters, the player must direct the spacecraft to safely land on a flat area of terrain whilst battling the initial horizontal motion and gravity.

Each map has its own characteristics such as gravity and terrain difficulty and you are rewarded with a score bonus for it.

Each lander also has its own characteristics such as weight, thruster power and different centre of gravity. Depending on the difficulty of each, the score is also affected.



(“Lunar Lander,” 2017)

My version of the game implements the functionality of accounts, player spectating and a chat system.

STORYBOARDS

LOGIN/REGISTER

A storyboard for a 'Login or Register' form. The form is enclosed in a rectangular frame. At the top, the text 'Login or Register' is underlined. Below this, there is a text input field labeled 'Username'. A small box labeled '(a)' is positioned to the left of the input field. Below the input field, there is a 'Continue' button. A small box labeled '(b)' is positioned to the right of the button.

- a) Where a username is entered.
- b) When hitting continue the database checks if that user exists. If the user exists, the user is directed to the login password form. If they're not, they're directed to the register password form. If the username is not valid at all. They are directed to the login error form.

REGISTER PASSWORD

The diagram shows a web page layout for a registration process. At the top, there is a title 'Login or Register' followed by a horizontal line. Below this, the word 'Register' is displayed, also followed by a horizontal line. Underneath, the text 'Welcome. Enter password to continue' is shown. A rectangular input field labeled 'Password' is positioned below the text, with a small box labeled '(a)' to its right. Below the input field is a 'Continue' button, with a small box labeled '(b)' to its right. The entire registration section is enclosed in a rectangular frame.

- a) Where the user enters the password they would like to use.
- b) After entering the password and clicking this, they will be added to the database granted that their password is a valid input, otherwise they are directed to the login error form. If their information is valid, they are sent to the character selection screen.

LOGIN PASSWORD

Login or Register

Login

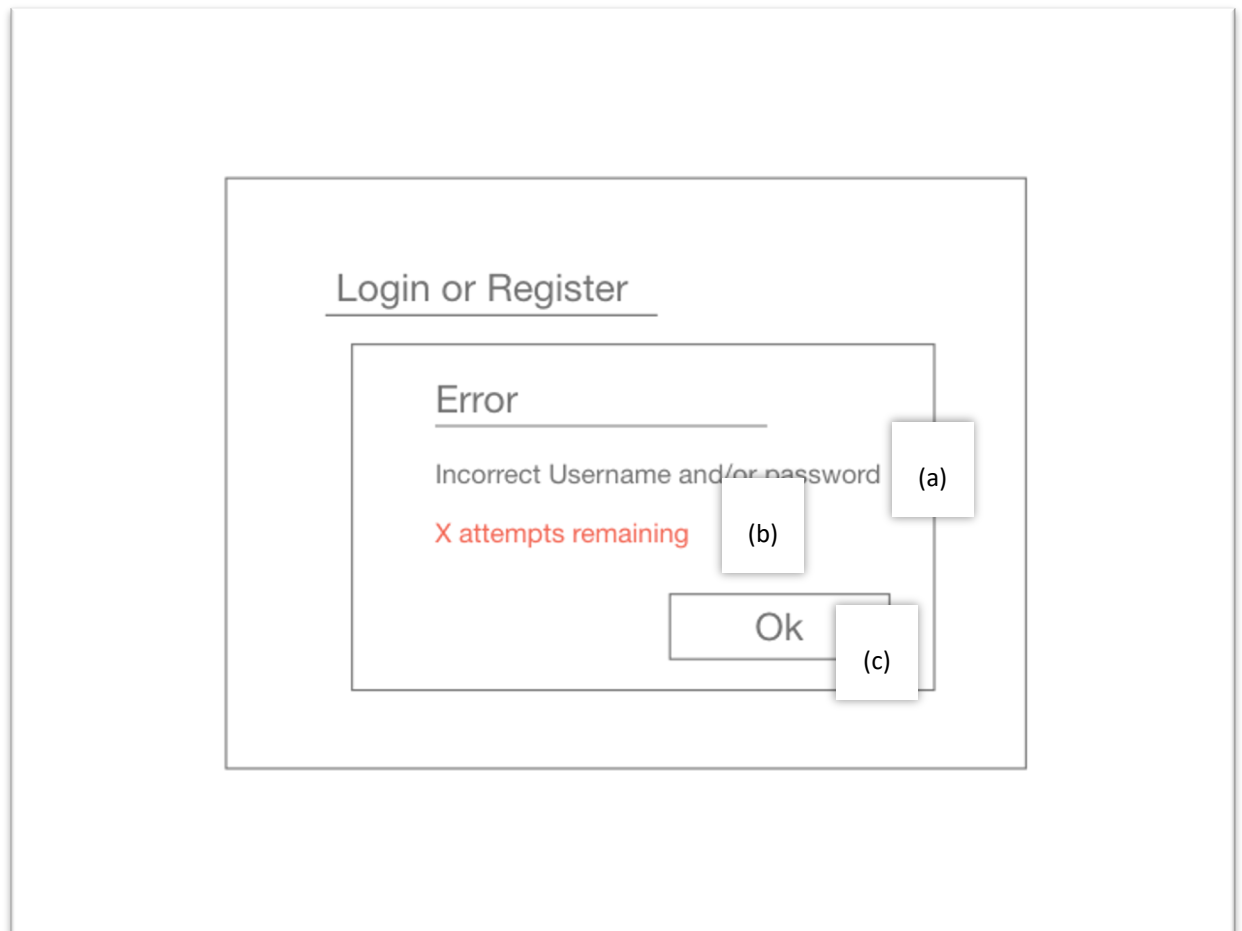
Welcome back <username>

Password (a)

Login (b)

- a) Where the user enters their password for their account.
- b) After entering a password, it is checked that it is valid, after the user is sent the character selection screen. If it is not, the user will be directed to the login error form. If the user fails too many times, their account is locked and sent to the form informing them so. If their account is locked, they are sent to the account locked screen.

LOGIN ERROR SCREEN



- a) Where the error information goes. This can be either:
 - Invalid username
 - Invalid password creation
 - Invalid password for user
 - Invalid username
- b) If it is an unsuccessful login because the password is incorrect, the attempts remaining is displayed. If they fail 5 times in a row, their account is locked.
- c) To go back and try again.

ACCOUNT LOCKED SCREEN

Login or Register

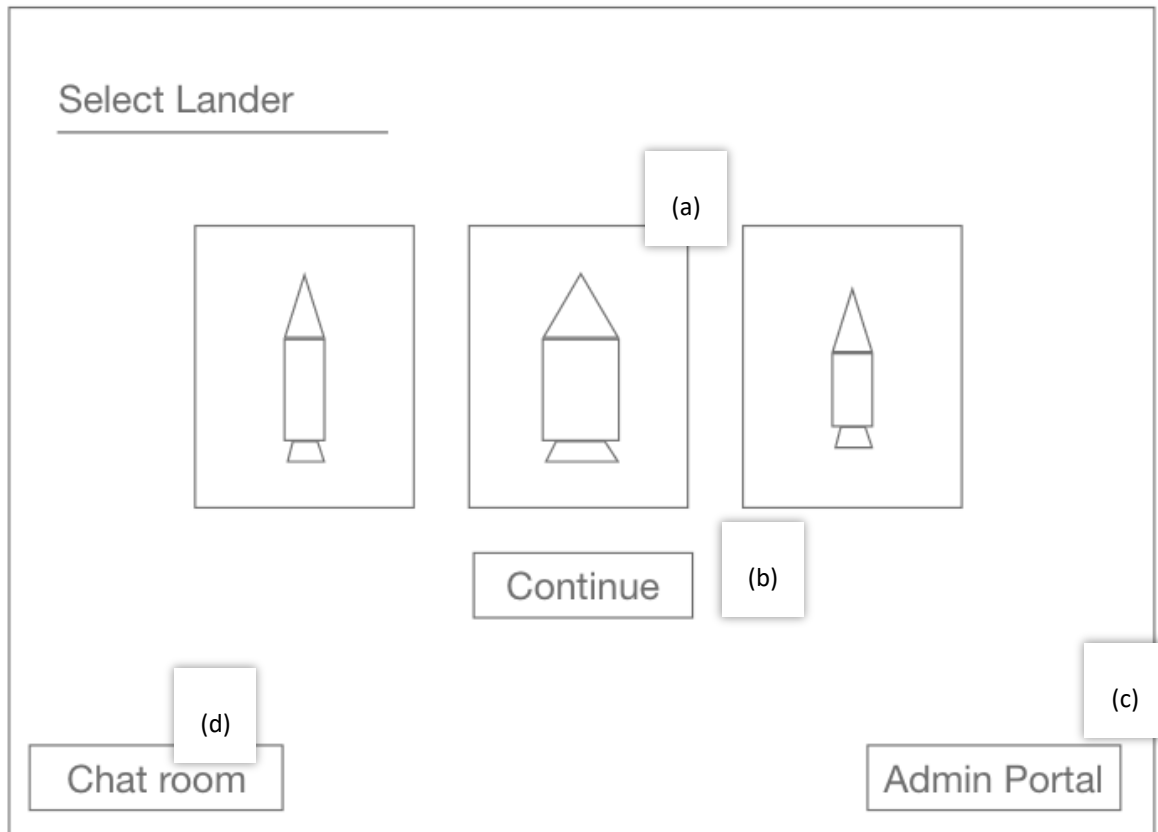
Error

Account is locked (reason) (a)

Ok (b)

- a) The reason for their account being locked, either because they failed the login too many times or an admin locked them out.
- b) To go back to the login screen.

CHARACTER SELECTION SCREEN



- a) Where the user selects their lander they want to play as. Not limited to three as in the screenshot.
- b) After selecting their lander, this button will become enabled and when clicked will send them to the gameplay screen
- c) Only visible to admins, when clicked, they will be sent to the admin console.
- d) Sends the player to the global chat room

ADMIN CONSOLE

The image shows a wireframe of an 'Admin Console' interface. At the top left is a '< Back' button labeled (a). Below it is the title 'Players' with a horizontal line underneath. The main area contains a table with three columns: 'Name', 'Status', and 'High score'. The first row of the table has labels (b), (c), and (d) respectively. Below the table are four buttons: a '+' button labeled (e), a '-' button labeled (f), an 'End Session' button labeled (g), and an 'Update Info' button labeled (h).

Name	Status	High score
(b)	(c)	(d)

Below the table are the following controls:

- (e) +
- (f) -
- (g) End Session
- (h) Update Info

- a) Sends the user back to the character selection screen
- b) Lists the player names
- c) Lists the player statuses. Either:
 - Offline
 - Online
 - Online, In Chat room
 - Online, In-game (Lander name)
- d) Lists the player high-scores
- e) Adds a new user and sends the user to the admin new user dialog
- f) Removes the selected user
- g) Logs the current selected user out
- h) Sends the user and the currently selected user to the update info dialog.

ADMIN NEW USER DIALOG

- a) New user username
- b) New user password
- c) New user login attempts (0 is default)
- d) New user locked status
- e) New user admin status
- f) Cancel and go back to admin form
- g) Create the user

ADMIN EDIT USER DIALOG

< Back

Players

Name

Username <username> (a)

Password ***** (b)

Login Attempts 3 (c)

Locked ☐ (d)

Admin ☐ (e)

(f)

Cancel

Update

(g)

+

-

End Session

Update Info

- a) Edit user username
- b) edit user password
- c) edit user login attempts
- d) edit user locked status
- e) edit user admin status
- f) Cancel and go back to admin form
- g) Commit the changes

GLOBAL CHAT ROOM

< Back (a)

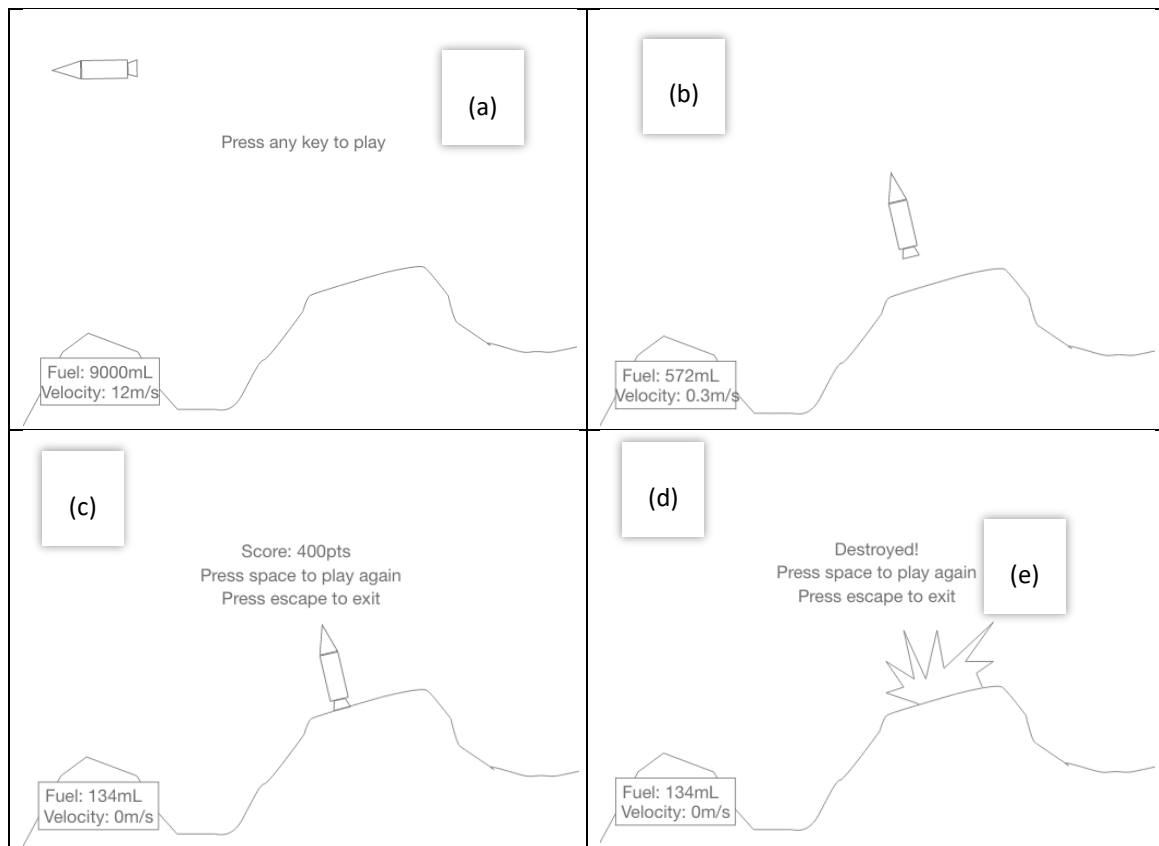
Global Chat

(Time)	Name	Message
(b)	(c)	(d)

(e) Send (f)

- a) Sends the player back to the character selection screen
- b) The time the player sent the message
- c) The name of the player
- d) The message the player posted
- e) The input field for sending the message
- f) The send button to send the message to the chat room

GAMEPLAY



- User presses any key to start the game.
- User uses a combination of space and the directional keys to control the lander
- If the user does not exceed the speed limit, angle limit and does not run out of fuel and lands on the terrain, they win and are given a score.
- If the user exceeds the speed limit, angle limit or runs out of fuel before landing, they craft will be destroyed on impact.
- Pressing escape will take the user back to the character selection screen. Pressing space will allow the user to retry.

INTERFACE DESIGN ANALYSIS

PLAYER REGISTRATION

The design was created to fit the design brief but also be as user friendly as possible. The brief called for a player to be able to login and or register on the same form. The forms are responsive to show feedback for the user's actions such as login failure or success.

CHARACTER SELECTION

This design was also created to fit the brief. The design is a simple character selection screen, showing the name, stats and other attributes for each lander the player can choose from.

GAME ADMINISTRATION

This form isn't as user friendly since it isn't designed to be seen by the average player. This screen is only for admins to access extra functionality relating to managing the game and the players. This screen was designed around the brief which called for the admin to be able to manage users and games.

GAMEPLAY

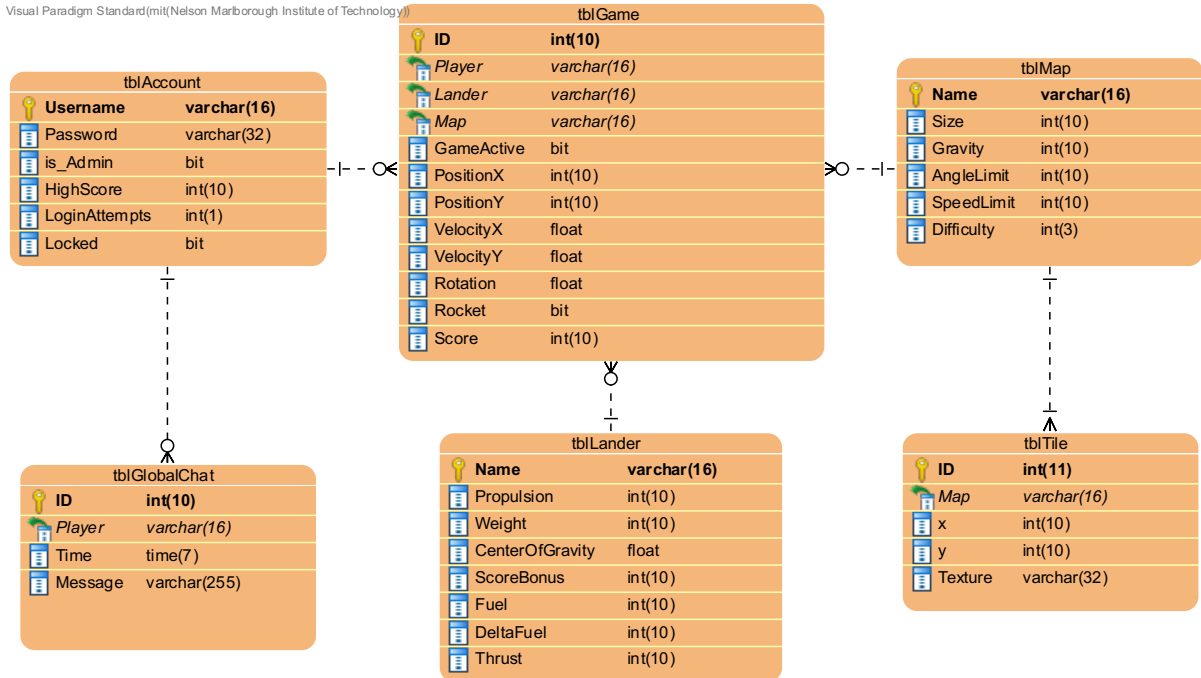
These diagrams are designed to fit the idea for the gameplay of the game. It shows the stages the player will experience when playing the game and the outcomes that follow it.

PLAYER GLOBAL CHAT

This section is for players to communicate with other online players. This section will update with the most recent messages. This section was created to fit the brief as it called for player communication.

CONCEPTUAL ERD

Visual Paradigm Standard(mit(Nelson Marlborough Institute of Technology))



CRUD TABLE

	Player registers new account	Player attempts to log in	Player fails to log in	Successful Login	Start new Game	Update game frame	Game ends	Admin opens admin panel	Admin Deletes player	Admin updates player info	Player sends message	Player Receives message
tblAccount	C	R	RU	RU	R		RU	R	D	RU	R	R
Username	C	R			R			R	D	RU	R	R
Password	C	R							D	RU		
isAdmin	C			R				R	D	RU		
Highscore	C			R			RU		D	RU		
LoginAttempts	C		RU	U					D	RU		
Locked	C	R	U						D	RU		
tblGame					C	U	R	R	D			
ID					C			R	D			
Player					C			R	D			
Lander					C			R	D			
Map					C			R	D			
GameActive					C	U			D			
PositionX					C	U			D			
PositionY					C	U			D			
VelocityX					C	U			D			
VelocityY					C	U			D			
Rotation					C	U			D			
Rocket					C	U			D			
Score					C	U	R		D			
tblLander					R	U	R	R				
Name					R			R				
Propulsion					R							
Weight					R							
CentreOfGravity					R							
ScoreBonus					R		R					
Fuel					R							
DeltaFuel					R	U						
Thrust					R							
tblMap					R		R	R				
Name					R			R				
Seed					R							
Gravity					R							
AngleLimit					R							
SpeedLimit					R							

Difficulty					R		R					
tblTile					R			R				
<i>Map</i>					R			R				
x					R							
y					R							
Texture					R							
tblGlobalChat								R	D		C	R
<i>ID</i>								R	D		C	R
Player								R	D		C	R
Time								R	D		C	R
Message								R	D		C	R

REFERENCES

Lunar Lander.png. (2017). In *Wikipedia*.

https://en.wikipedia.org/w/index.php?title=File:Lunar_Lander.png&oldid=813854906