

**CST2120 Coursework 1- Game Website Game  
Proposal  
M00702000**

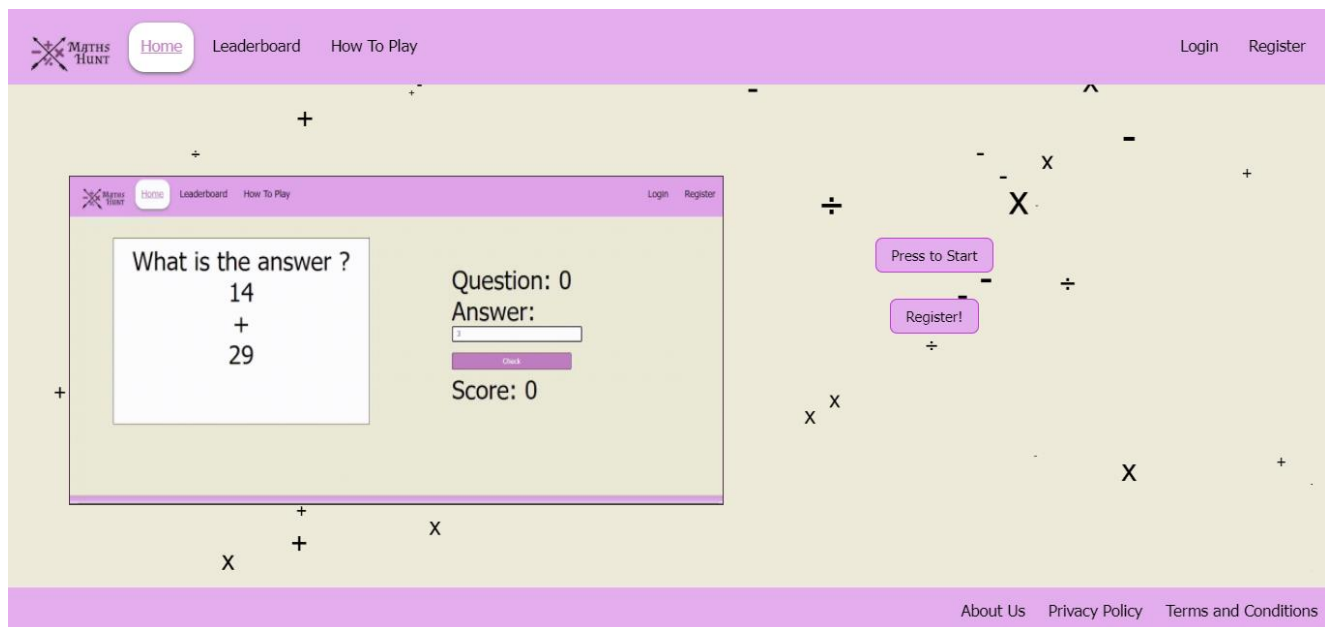
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## Overview

The game I have created is a maths game called Maths Hunt which consists of randomly generated numbers and operations, the game gives the user the opportunity to challenge themselves by picking the level according to their skills and aptitude; the levels are easy medium and hard. If the user answers questions correctly then game validates the answer using a sophisticated function in JavaScript where in this case the border of the answer box will thicken to green through the help of CSS and HTML, if answered incorrectly the border of the answer box will thicken to red before moving on to the next question.

## Main Page



This is the index page in essence my main page, the background with maths operations is moving in the website, this has been done through using canvas whereby a set of maths operations are selected at random once the window is loaded they have been positioned to bounce back and forth inside the body. The animation box besides the two buttons called Press to Start and Register! is a looping animation (a gif to be specific) of what the game looks like while playing. Users can login or register to play, if registered their scores will be updated in the leaderboard if user is not registered scores will not be saved.

## Registration

If users want to record their scores in the leader board they must do this by registering and logging in before playing the game, when registering the form, the user will go through many different types of validations. The input fields in my registration page has been made using solely JavaScript to check and alert the user with appropriate messages, in addition none of the fields cannot be left empty.

The screenshot shows a web application interface for 'Myths Hunt'. The top navigation bar is purple and contains the site logo, 'Home', 'Leaderboard', 'How To Play', 'Login', and a 'Register' button. The main content area is light beige and features a white 'Register' form box. The form includes the following fields: 'Name' (text input), 'Email' (text input), 'Password' (text input), 'Confirm Password' (text input), 'Country' (dropdown menu with 'Afghanistan' selected), and 'Enter Number' (text input). A purple 'Register' button is located at the bottom right of the form. The bottom footer is purple and contains links for 'About Us', 'Privacy Policy', and 'Terms and Conditions'.

(This is the registering form page with various input fields.)

## Input Fields

- Name – If nothing is entered in this field user will be notified that they must enter a name, the name also must be more than one character otherwise the user will be notified again to enter an appropriate name.
- Email – Emails must contain an “@” and at least one “.” In order to continue successfully input the email field.
- Password – Passwords must contain at least eight characters one capital letter and one-digit number otherwise a message will appear notifying issues with specific messages.
- Password Confirmation- If password is left empty or it does not match the password input field a message will pop specifying the issue.
- Country – allows user to the select their country from a dropdown list of countries
- Number – In the number input field characters are not recognised by default therefore the only message that appears is if the user leaves the number input field empty.

## Validation

### Name

The screenshot shows the registration page for 'MATHS HUNT'. The header is purple with the logo and navigation links: Home, Leaderboard, How To Play, Login, and a Register button. The main content area is light beige and contains a white 'Register' form. The form has the following fields: Name (with placeholder 'Name'), Email (with placeholder 'Enter your Email'), Password (with placeholder 'Type you Password'), Confirm Password (with placeholder 'Confirm your password'), Country (a dropdown menu showing 'Afghanistan'), and Enter Number (with placeholder 'Enter number'). A purple 'Register' button is at the bottom right of the form. A red error message 'Please enter your name' is displayed above the Name field.

(Registration Page – Empty Fields, if user decides not to enter details in any of the input fields the register form will detect this and won't allow user to register and request input fields details one by one.)

This screenshot shows the same registration page, but the Name field now contains the letter 'a'. A red error message 'Name is too short' is displayed above the Name field. All other fields (Email, Password, Confirm Password, Country, Enter Number) and the Register button remain the same as in the previous screenshot.

(Registration Page – Must be more than one character, if user decides to enter a name shorter than one character the registrations form will detect this and not allow user to successfully register and relay the message that their name is too short.)

## Email

The screenshot shows the registration form on the MATHS HUNT website. The form is titled "Register" and includes fields for Name, Email, Password, Confirm Password, Country, and Enter Number. A red error message "Pleasde enter an email" is displayed above the Email field. The Email field contains the text "Enter your Email". The Password field contains "Type you Password" and the Confirm Password field contains "Confirm your password". The Country dropdown is set to "Afghanistan" and the Enter Number field contains "Enter number". A purple "Register" button is visible.

(Registration Page – Emails consists of one at “@” because the use has not inputted such details registration form won’t be successful and inform the user that the email is not valid.)

The screenshot shows the registration form on the MATHS HUNT website. The form is titled "Register" and includes fields for Name, Email, Password, Confirm Password, Country, and Enter Number. A red error message "Email is not valid please enter a valid email address" is displayed above the Email field. The Email field contains the text "sivia". The Password field contains "Type you Password" and the Confirm Password field contains "Confirm your password". The Country dropdown is set to "Afghanistan" and the Enter Number field contains "Enter number". A purple "Register" button is visible.

(Registraton - Emails also contain an a full stop sign to improve accuracy and ensure the user has entered correct details it will relay the same message.)


## Password

The screenshot shows the MATHS HUNT registration page. The header has a logo and navigation links: Home, Leaderboard, How To Play, Login, and a Register button. The main content area contains a registration form titled "Register". The form has fields for Name (Silvia), Email (Silviaaminu25aprie@gmail.com), Password (Type you Password), Confirm Password (Confirm your password), Country (United Kingdom), and Enter Number (Enter number). A red error message "Password field is empty" is displayed above the Password field. A Register button is at the bottom right of the form. The footer contains links for About Us, Privacy Policy, and Terms and Conditions.

(Registration – Password field cannot be left empty otherwise the registration will not proceed, the user will be asked to enter a password.)

The screenshot shows the MATHS HUNT registration page. The header has a logo and navigation links: Home, Leaderboard, How To Play, Login, and a Register button. The main content area contains a registration form titled "Register". The form has fields for Name (Silvia), Email (Silviaaminu25aprie@gmail.com), Password (\*\*\*\*\*), Confirm Password (Confirm your password), Country (United Kingdom), and Enter Number (Enter number). A red error message "Your password must be at least 8 characters" is displayed above the Password field. A Register button is at the bottom right of the form. The footer contains links for About Us, Privacy Policy, and Terms and Conditions.

(Registration – Password must contain at least eight characters.)

 [Home](#) [Leaderboard](#) [How To Play](#) [Login](#) [Register](#)

Register

Your password must contain at least one capital letter.

Name:


Email:

Password:  Confirm Password:

Country:  Enter Number:  [Register](#)

[About Us](#) [Privacy Policy](#) [Terms and Conditions](#)

(Registraton – Password must contain at least one capital letter.)

 [Home](#) [Leaderboard](#) [How To Play](#) [Login](#) [Register](#)

Register

Your password must contain at least one digit.

Name:

Email:

Password:  Confirm Password:

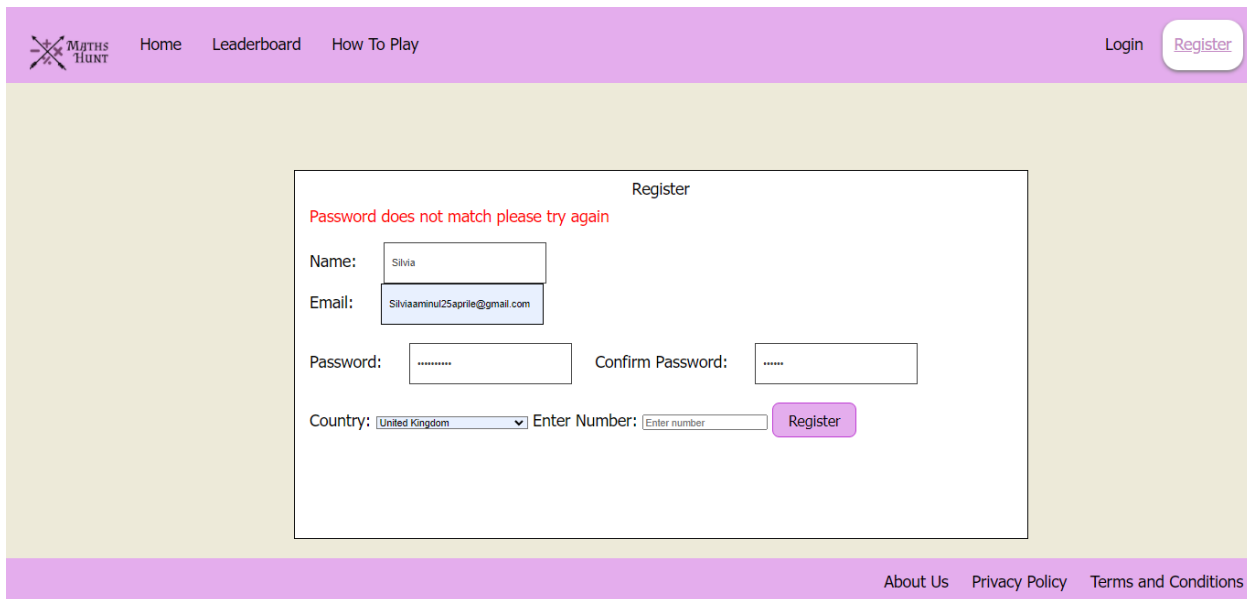
Country:  Enter Number:  [Register](#)

[About Us](#) [Privacy Policy](#) [Terms and Conditions](#)

(Registraton – Password must contain at least one capital letter.)



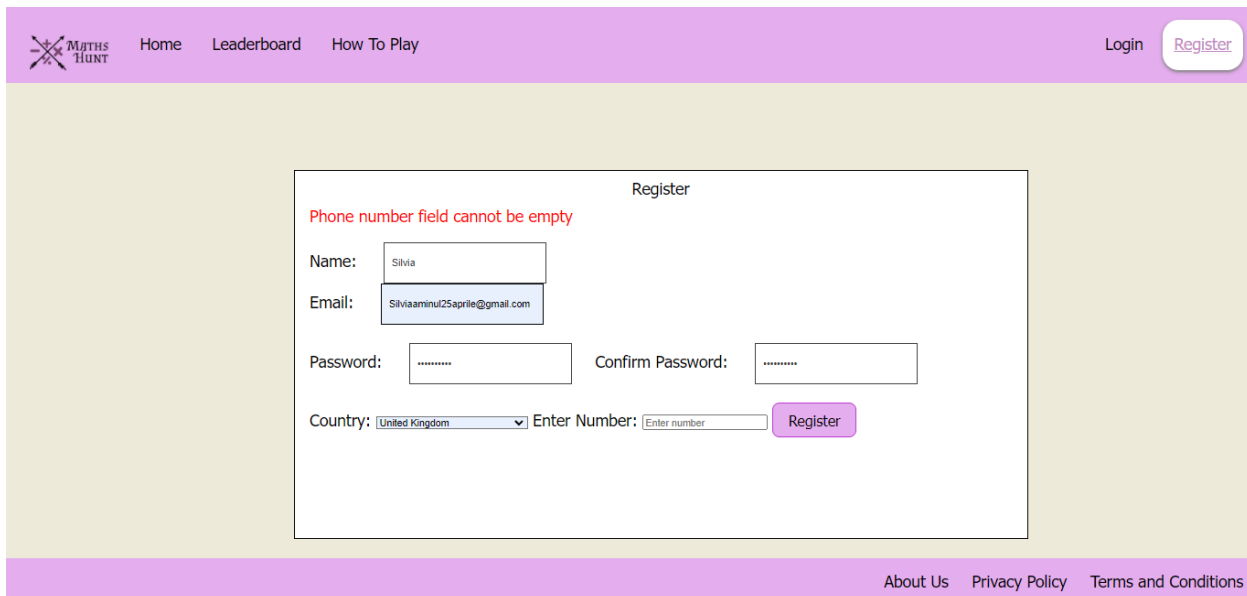
## Password Confirmation



The screenshot shows the 'Register' form on the 'MATHS HUNT' website. The form is titled 'Register' and contains the following fields: Name (Silvia), Email (Silviaaminul25aprie@gmail.com), Password (masked with asterisks), Confirm Password (masked with asterisks), Country (United Kingdom), and Enter Number (Enter number). A red error message 'Password does not match please try again' is displayed at the top of the form. A purple 'Register' button is located at the bottom right of the form. The website's navigation bar includes 'Home', 'Leaderboard', 'How To Play', 'Login', and 'Register'.

(Registraton – Password confirmation must match with password)

## Phone Number



The screenshot shows the 'Register' form on the 'MATHS HUNT' website. The form is titled 'Register' and contains the following fields: Name (Silvia), Email (Silviaaminul25aprie@gmail.com), Password (masked with asterisks), Confirm Password (masked with asterisks), Country (United Kingdom), and Enter Number (Enter number). A red error message 'Phone number field cannot be empty' is displayed at the top of the form. A purple 'Register' button is located at the bottom right of the form. The website's navigation bar includes 'Home', 'Leaderboard', 'How To Play', 'Login', and 'Register'.

(Registraton – Phone number cannot be empty.)

## Successful Registration

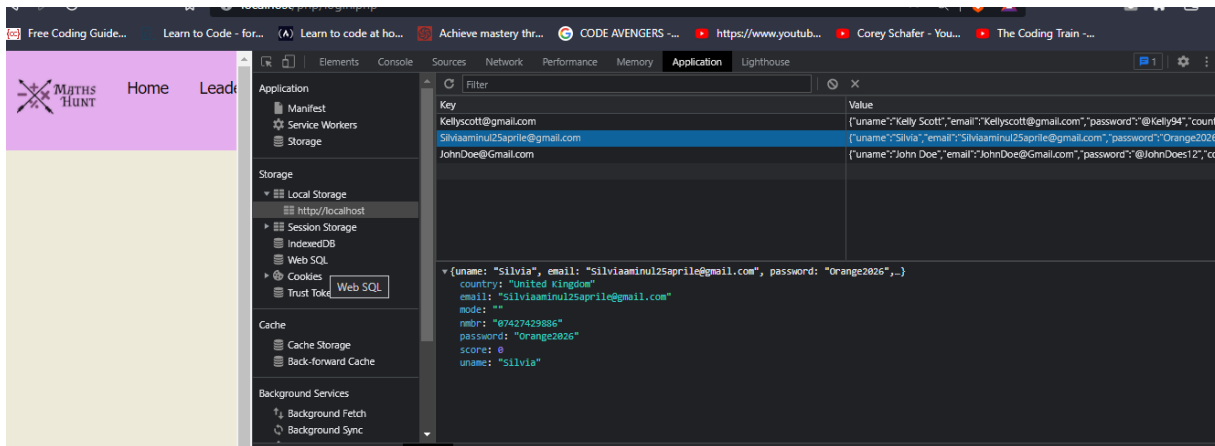
The screenshot shows the Math Hunt website's registration page. The header is purple with the Math Hunt logo and navigation links: Home, Leaderboard, and How To Play. On the right, there are links for Login and Register. The main content area is a light beige color. In the center, there is a white box titled 'Register' containing a green message: 'Registration successful.' Below this message, the registration details are displayed: Name: Silvia, Email: Silviaaminul25aprile@gmail.com, Password: (masked with dots), Confirm Password: (masked with dots), Country: Afghanistan (selected from a dropdown), and Enter Number: 945092. A purple 'Register' button is located at the bottom right of the form. The footer is purple and contains links for About Us, Privacy Policy, and Terms and Conditions.

(Registration – If the users successfully register they will be notified with a success message which will disappear after five seconds before loading the login page.)

## Local Storage

The following details are recorded in the local storage Name – If nothing is entered in this field user will be notified that they must enter a name, the name also must be more than one character otherwise the user will be notified again to enter an appropriate name.

- Email
- Password
- Country
- Number



(Local Storage – an example of what local Storage looks like once successfully registered)

## Login

The Login page consists of the following

- Email – If email inputted is wrong then login form will notify user that users' email is not recognised
- Password – If password is typed incorrectly user will be asked to try again
- Success – If successful before loading the game page the user can check their status in the login page where if the user is logged in it will be shown as "user" is logged in

## Email



(Login – if the users' email is not recognised it produces the message above)

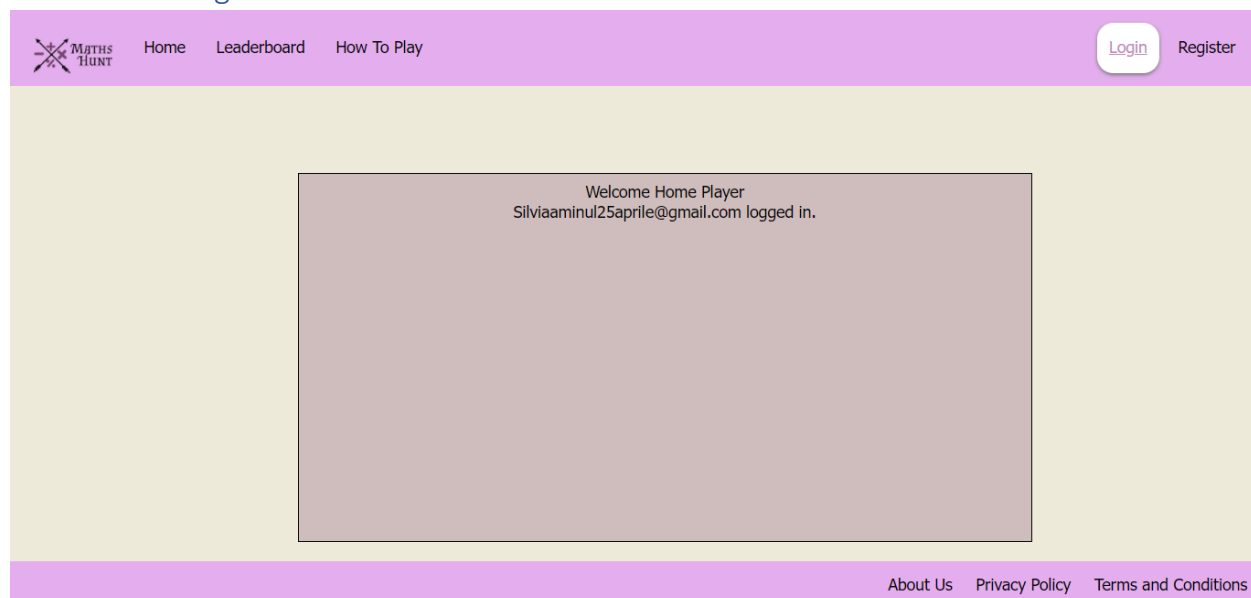
## Password



The screenshot shows the Math Hunt website's login interface. The header is purple with the Math Hunt logo and navigation links: Home, Leaderboard, and How To Play. On the right, there are 'Login' and 'Register' buttons. The main content area has a light beige background. A central grey box contains the login form. At the top of this box is the text 'Welcome Home Player'. Below it, the 'Email' field is filled with 'Silviaaminul25april@gmail.com'. The 'Password' field is empty. A purple 'Login' button is positioned below the password field. A red error message, 'Password not correct. Please try again.', is displayed below the button. At the bottom of the page, a purple footer contains links for 'About Us', 'Privacy Policy', and 'Terms and Conditions'.

(Login – if the users' password is not recognised it produces the message above)

## Success Message

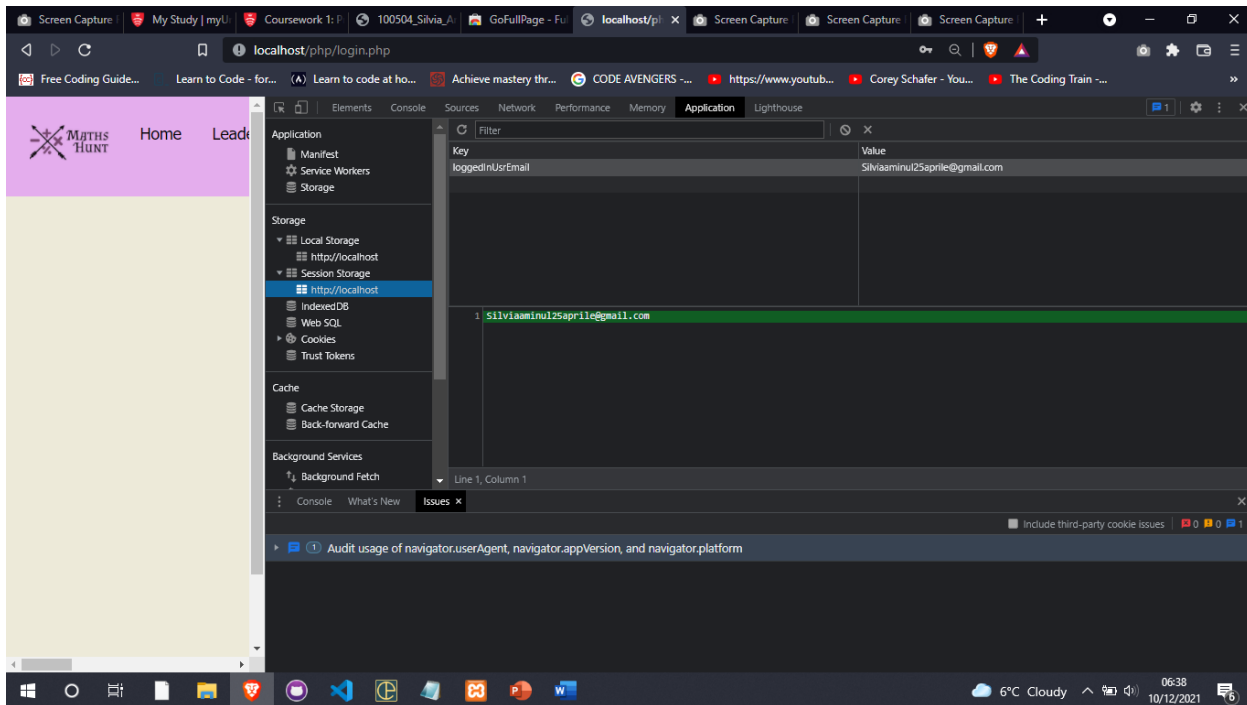


This screenshot shows the same Math Hunt login page as above, but with a successful login message. The 'Email' field still contains 'Silviaaminul25april@gmail.com', but the 'Password' field is now empty. The 'Login' button is still present. The message 'Welcome Home Player' is followed by 'Silviaaminul25april@gmail.com logged in.' in a smaller font. The rest of the page layout, including the header, footer, and error message area, remains the same.

(Login – If user is successfully logged in then it will produce the message above until user closes browser, when closed data from session storage is removed.)

## Session Storage

User' email is temporarily in the session storage



(Session Storage- this is where users email is temporarily stored in the session storage )

## Game

The game starts with a start button which is always displayed at the beginning of every game.



## Levels

Once start button is clicked three levels are displayed.

### Easy

Easy questions consist of only operators “+” or “-” with the minimum random number being from one to the maximum number being ten

### Medium

Medium questions consist of only operators “+”, “-” and “\*” with the minimum random number being from one to the maximum number being thirty.

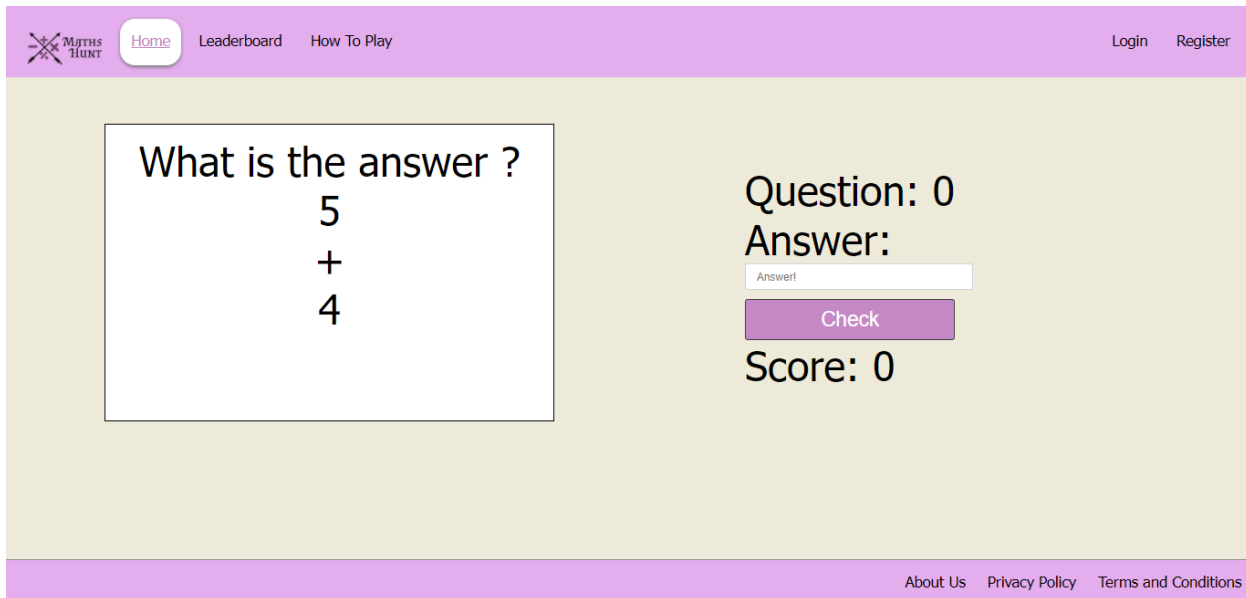
### Hard

Hard questions consist of only operators “+” or “-” with the minimum random number being from one to the maximum number being fifty



## Game page

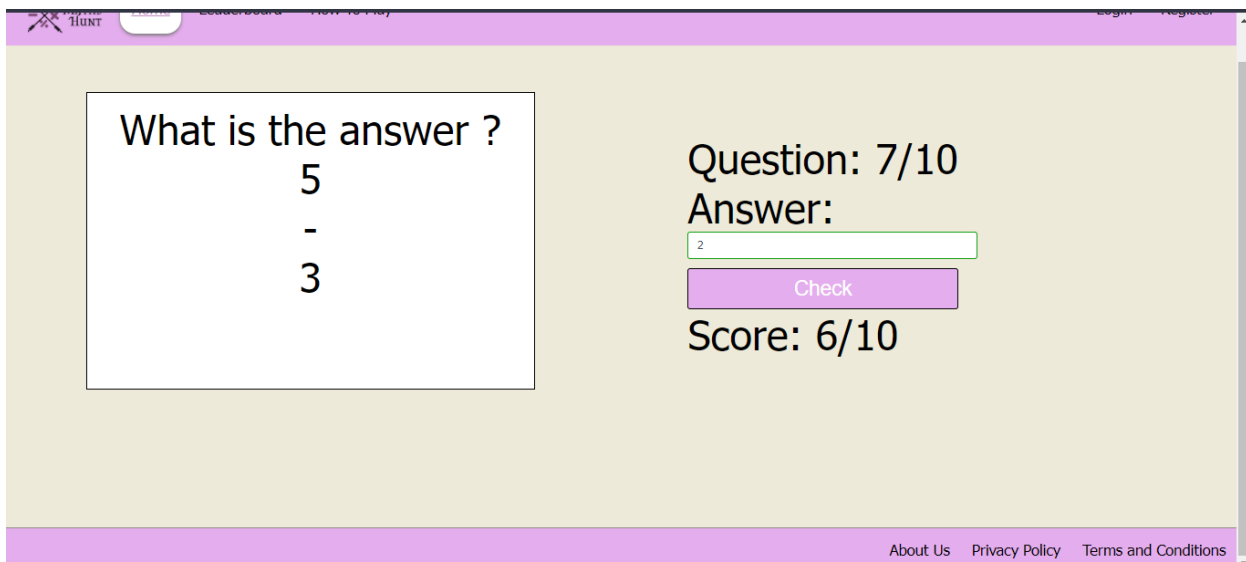
Game page depending on mode selected will display randomly generated maths questions. The questions increment as each question id loaded to give the user an idea as to when the game will end. The score on the other hand will only increment whether the user have answered the question correctly or not.



The screenshot shows the Maths Hunt game interface. At the top, there is a purple navigation bar with the Maths Hunt logo, a 'Home' button, and links to 'Leaderboard' and 'How To Play'. On the right side of the bar are 'Login' and 'Register' links. The main content area has a light beige background. On the left, a white box contains the question 'What is the answer ?' followed by the math problem 
$$\begin{array}{r} 5 \\ + \\ 4 \end{array}$$
. On the right, the text 'Question: 0' and 'Answer:' is displayed. Below 'Answer:' is a text input field with the placeholder 'Answer!'. A purple 'Check' button is positioned below the input field. The score 'Score: 0' is shown at the bottom right of the main area. A purple footer bar at the very bottom contains links for 'About Us', 'Privacy Policy', and 'Terms and Conditions'.

## Correct

If question is answered correctly the question box will increment after clicking check button (as it loads the next question) the answer box border will go green for a few seconds before it goes back to normal, the score number will also increment.



This screenshot shows the game page after a correct answer. The navigation bar and footer are identical to the previous screenshot. The question box on the left now displays 'What is the answer ?' followed by the math problem 
$$\begin{array}{r} 5 \\ - \\ 3 \end{array}$$
. On the right, the text 'Question: 7/10' and 'Answer:' is shown. The text input field now contains the number '2' and has a green border. The purple 'Check' button remains below it. The score has updated to 'Score: 6/10'. The footer bar at the bottom still contains the 'About Us', 'Privacy Policy', and 'Terms and Conditions' links.

Wrong

The screenshot shows a quiz interface with a purple header and footer. The main content area has a light beige background. On the left, a white box contains the question "What is the answer ?" followed by the arithmetic problem  $8 + 2$ . On the right, the text "Question: 8/10" and "Answer:" is displayed. Below "Answer:" is a text input field containing the number "34", which has a red border. Below the input field is a purple button labeled "Check". Below the button, the text "Score: 6/10" is shown. The footer contains links for "About Us", "Privacy Policy", and "Terms and Conditions".

If the user answers question incorrectly the question answer will increment regardless after clicking the check button the answer box border will turn red and as for the score will not be incrementing by one.

Empty

The screenshot shows a quiz interface with a purple header and footer. The main content area has a light beige background. On the left, a white box contains the question "What is the answer ?" followed by the arithmetic problem  $4 - 7$ . On the right, the text "Question: 9/10" and "Answer:" is displayed. Below "Answer:" is a text input field containing the word "Answer!", which has a red border. Below the input field is a purple button labeled "Check". Below the button, the text "Score: 6/10" is shown. The footer contains links for "About Us", "Privacy Policy", and "Terms and Conditions".

If user decides to input nothing in the answer box my code will deem it as incorrect and therefore treated just like a wrong question, the border will turn red the question number will increment and the score number will not.



## End Page



After completing the game user will be take to a new page whereby they can view their overall score the button below the score number leads to either playing again or leads to the leaderboard.

## Leaderboard

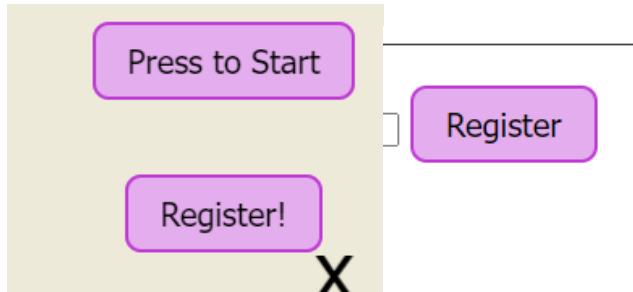


This is where the users' game details will be recorded if they are registered in which case if they are then my code will compare scores if the has previously played and their old score is higher it will not updated however if the users new score is higher than the old score saved in the local storage it then the users' then the score will be updated in the leaderboard, in the case that the user is new to the game and have never played before the score that they have gotten from the first game will be the score it will be compared next time the user decides to play.

## Speacial Features

### Bootstrap

I have added bootstrap for my buttons, to improve design and user experience.



### Class

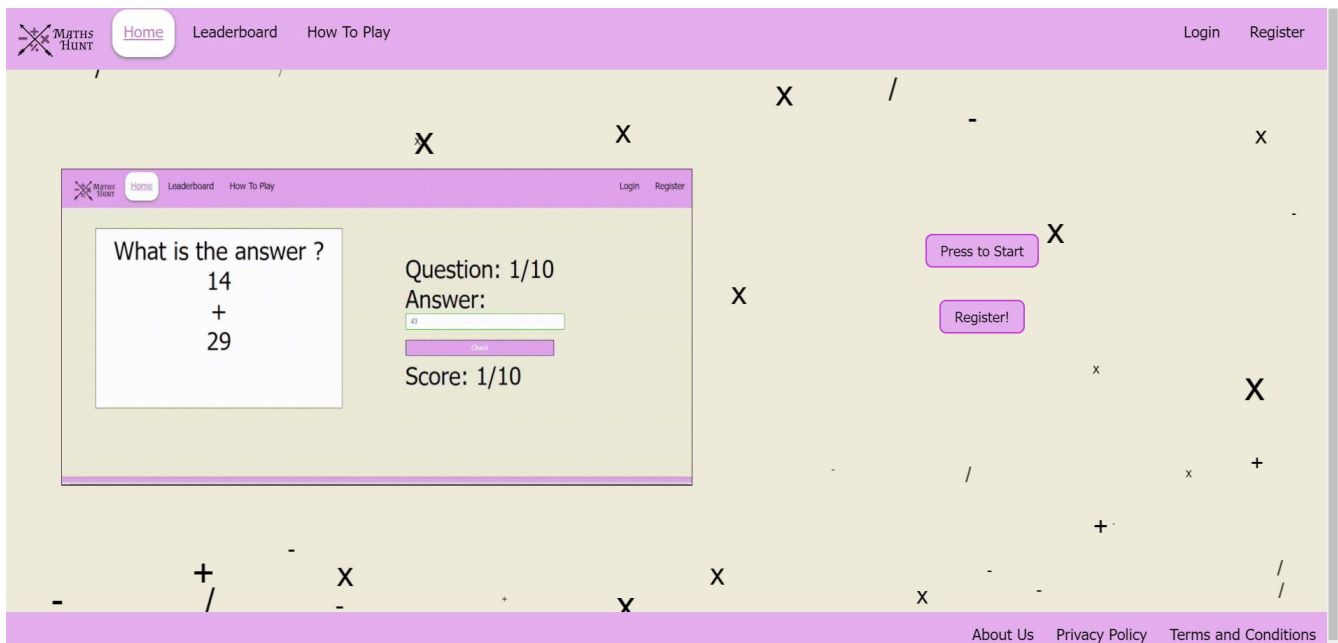
Class was used in my game in order to connect the buttons and call the variables that dynamically generate numbers. Depending on which button is picked it calls game levels by levels and text. The class also contains a constructor which initialises the field members depending on the user interaction in essence clicking level button.

### Canvas

Canvas was used in my main page as I mentioned earlier in Main Page - "the background with maths operations is moving in the website, this has been done through using canvas whereby a set of maths operations are selected at random once the window is loaded they have been positioned to bounce back and forth inside the body. The animation box besides the two buttons called Press to Start and Register! Is a looping animation (a gif to be specific) of what the game looks like while playing. Users can login or register to play, if registered their scores will be updated in the leaderboard if user is not registered scores will not be saved."

### Animation

A looping animation has also been added to my main page, which is using graphic interchange format technology to provide motion to a sequence of images.

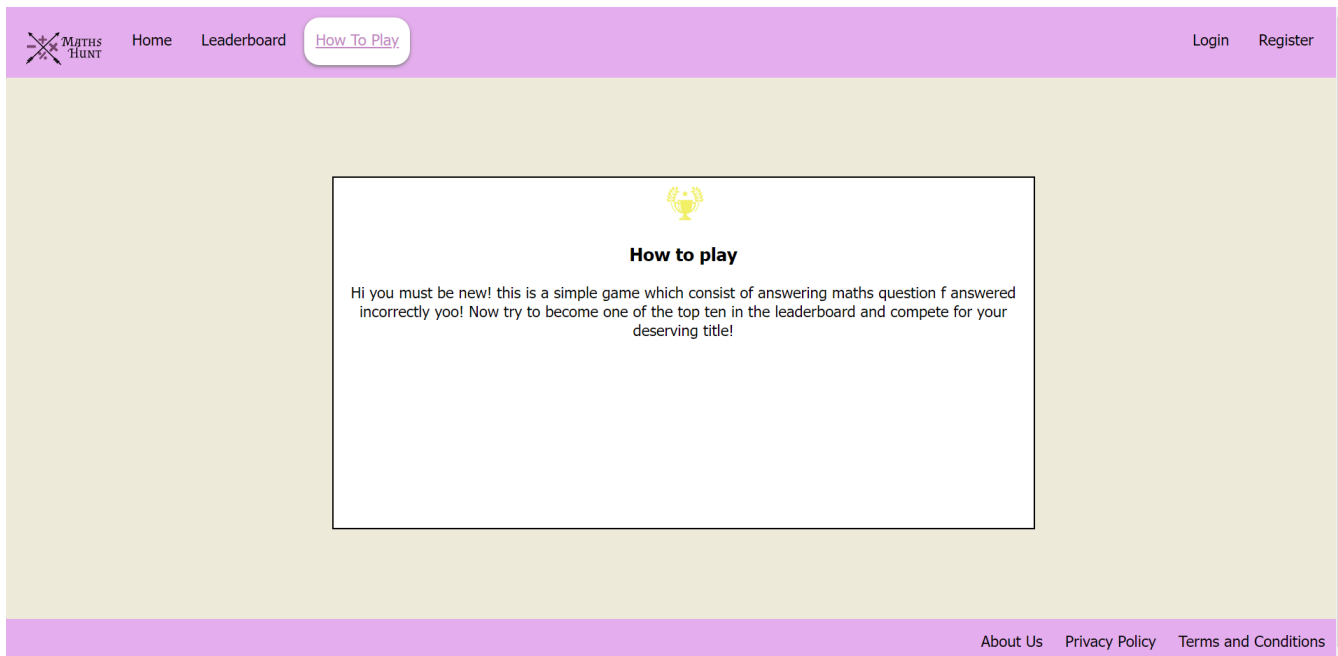


## Sound

A looping sound has been added in my common.php so that on clicking anywhere in the website on any of the pages sounds is played in a looping motion.

## Screenshots

### Game Instruction Page



## About me Page

 [Home](#) [Leaderboard](#) [How To Play](#) [Login](#) [Register](#)





### About Me

Hi! I am Computer Science Student who's learning a lot in MDX !  
this is one of my coursework project a maths game for for kids  
who enjoy mentally challenging themselves.If you want to know more  
about my juourney in CS Follow me on Social Media .....  
feel free to message me about your queries on....

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## Privacy Policy

 [Home](#) [Leaderboard](#) [How To Play](#) [Login](#) [Register](#)





### Our Privacy Policy

Please read this Privacy Policy carefully as it contains important information about the following: What information we may collect about you; How we will use information we collect about you; Whether we will disclose your details to anyone else; and Your choices and rights regarding the personal information you have provided to us. In respect of the Game(s): In respect of the Support Centre: The Online Services may contain hyperlinks to services owned and operated by third parties. These third party services may have their own privacy policies and we recommend that you review them. They will govern the use of personal information that you submit or which is collected by cookies and other tracking technologies whilst using these services. We do not accept any responsibility or liability for the privacy practices of such third party services and your use of these is at your own risk. We may make changes to this Privacy Policy in future, which will be posted on this page. You should check this page from time to time to ensure you are aware of any changes. Where appropriate we may notify you of changes through the Games.

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## Terms and Conditions

 [Home](#) [Leaderboard](#) [How To Play](#) [Login](#) [Register](#)



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