# Synoptic Project B
# Maze Game

## Limitations & Improvements

Amy O'Toole

## Limitations

One limitation of my application is that in order to ensure the user's mouse started in the right place within the maze, I had to add a hidden button which is located on top of the 'Start maze' and 'Next Level' buttons. This means that only a certain area on these buttons is clickable since the button is in the same location and the same size of the black starting square on every maze. This could confuse a user since they could be under the belief they are clicking in the correct place and the form does not respond. Before starting this project, I wanted the user to be able to click anywhere on the 'Start Maze' and 'Next Level' buttons and the application would then place the cursor in the starting square. However, whilst constructing the game I decided that this might disorientate the user since the mouse would have jumped location without their input. This could lead to the user spending time trying to find the mouse or whilst locating the mouse they could go outside the maze boundaries and fail that level. When taking these factors into consideration I decided that in order to offer a more user friendly application, I would add a hidden button which ensures the user places the mouse in within the starting square when the form loads.

Another limitation of my 'Maze Game' is that the user is unable to save the score they have achieved. This makes the application less engaging and seem repetitive since the aspect of competition has been remove. Due to the game only having five levels and these five levels remaining constant, the user experiences little challenge and in turn this could lead to a lessened desire to play the game again. However, if I were to implement the ability to save the user's score and implement a leader board, this would lead to the user feeling challenged. The user would be able to see their personal high score and this could lead to the user having the desire to try and beat it. This may also lead to the user encouraging other users to gain access to the game by signing up to the website in order to try and beat each other's scores. Overall, I believe that the lack of ability to save a user's score provides a limitation to my game since it is a lack of functionality that is commonly expected from a digital game application.

A final limitation of my version of the 'Maze Game' is the lack of support for mobile devices and Internet Explorer. I took the decision not to implement support for mobile devices due to the time frame is was working within. In order to adapt the application to run on a mobile device it would require a redesign of the whole application. Every component used would need to be resized to fit pre-defined screen sizes and to do this it would require extra styling. From this, I decided that the time frame given to me would not afford me the time to resize and restyle each component a minimum of two times, once for mobile phones and once for tablets. The lack of support for Internet Explorer also stemmed from the same time frame issue. In order to enable Internet Explorer support it required installing additional packages to my application and configure the browser list settings within the package.json file. In addition, despite their being a workaround available it is heavily suggested that this is not an

advisable action as React.js is not designed to work within browsers that do not support ES5 methods. I therefore decided that it would take too much time to implement Internet Explore support and it was also not guaranteed that the application would render correctly once it was enabled.

## Future Improvements

One improvement I would implement within my version of the 'Maze Game' is adding the ability for the user to save their score. As stated above by adding this functionality it would add an extra dimension to the game which as it stands could seem repetitive. I believe that enabling the user to see their previous scores would make the game more engaging since it could create the desire to play the game repeatedly in order to beat their highest score. This is turn could lead to users recommending to other users gaining access to the game in the hopes of beating each other's high scores. Adding this functionality would require adding a database to my project to host the user's score that could just store the score or the user's name and score. I would also need to implement some logic which sorted the scores stored in descending order and then output these into an additional 'Leader Board' screen which the user could access.

Another improvement I would implement in the future is to add the support for mobile devices. This would be mildly time consuming since it would require research into the industry standards used for different screen sizes e.g. 400px width for mobile devices. As stated above, I would also need to recreate the styling for every component within the application a minimum of two times. This can be doing using the CSS rule '@media' which allows the programmer to control how the user interface looks on different devices. It uses simple logic to determine that if the screen width of the device is less than or equal to 400px, for example, then a tailored style sheet needs to be used. By adding this improvement, it would allow the game to be accessed by a wider audience and overall improves the game's accessibility. The way in which a consumer accesses a company's website is split roughly 50:50 between mobile device usage and desktop. This therefore means that my application could be missing roughly 50% of the website's total traffic and therefore could potentially fail the brief of increasing the number of visitors. Despite being a time consuming improvement I believe that taking the time to implement it would be greatly beneficial to the users of the application.

A final improvement I could implement in the future is adding the game's instructions to be displayed alongside the App's form. As it stands the application does not show the user how to play the game, how to navigate the application or how the user wins/loses. Whilst a user guide video has been provided, I believe that since it is not integrated with the application then the user is unlikely to access it. Therefore, by providing the same set of instructions as

the video to the user on the application itself, it will make the game for user friendly. This is because it would require no input from the user to learn how to play the game. There are two ways in which I could implement this improvement:

1. Create an image of the rules which can easily be imported into the project and displayed next to the App form
2. Add the instructions within the project's as a text component to be displayed to the right of the App's form

I believe the second option of including them as text within the application's code would be the better option for this. This is because if the instructions need to be altered at a later date then this can easily be done by editing them directly within the code. This way would also allow me to adjust to styling used within the application's CSS file. However, if I were to use option one then if the rules needed to be altered then I would have to recreate the image and reimport it back into project.