**User Authentication Success Criteria**

Number 1:

1. In the login menu, the user should be able to see the username and password entry field
2. The user should also be able to see 3 buttons: “show password”, “log in” and “sign up”
3. The labels of the password and username entry fields and text on the buttons should have a font size of 9px, colour of black and font Segoe UI
4. The background of the login menu and the buttons should be #f0f0f0
5. The buttons should also be white (#ffffff) on the top and bottom and black (#000000) on the bottom and right to give the illusion of depth
6. The title of the login menu should be “Maze Program”
7. The background colour of the header of the program should be #ffffff (The header is where the title “Maze Program” is seen)

Number 2:

1. In the login menu, when the user types in the username box, they should see their text
2. When the user types in the password box, the characters they typed should be obfuscated with \*\*\*\*
3. The text displayed inside the username and password boxes should have a font size of 9px, colour of black and font Segoe UI

Number 3:

1. In the login menu, when the user clicks on the “show password” button, it should reveal the password and no longer obfuscate it with stars (\*\*\*)
2. The text of the button when clicked should change from “show password” to “hide password”
3. This new text should inherit the font size of 9px, colour of black and font Segoe UI
4. Clicking on the button once again when it says “hide password” should obfuscate it with stars and make it unreadable once again

Number 4:

1. In the login menu, clicking on the “sign up” button should open a new “sign up” window

Number 5:

1. In the sign up window, the user should be able to type in their username and have it displayed
2. The user should also be able to type in their password into the password field
3. The password should be obfuscated with stars (\*\*)
4. There should be a “Show password” button
5. When clicking on the “Show password” button, the password text field should no longer be obfuscated
6. When clicked on the “show password” button, the button text should have changed to “hide password”
7. The labels of the username and password entry fields, as well as the text displayed inside of those fields and the text on the buttons should have a font size of 9px, colour of black and font Segoe UI
8. The background of the sign up menu and the buttons should be #f0f0f0
9. The buttons should also be white (#ffffff) on the top and bottom and black (#000000) on the bottom and right to give the illusion of depth
10. The title of the signup menu should be “Sign Up”
11. The background colour of the header of the program should be #ffffff (The header is where the title “Sign Up” is seen)

Number 6:

1. The user should be able to sign up with a new account by pressing the “Sign up” button if the username is unique
2. If the sign up was successful, an information dialogue should open informing the user that their sign up was successful.
3. The information dialogue should have one option, “OK” which when clicked should close both the information dialogue and the sign up window.

Number 7:

1. When logging in with the same username as already present in the database, and a matching password, the user should be granted access to the program

Number 8:

1. Signing up with a username that already exists should not be possible
2. In this case, an error dialogue should pop up informing the user that their signup failed and why it has failed
3. The error dialogue should have one option, “OK”, which when clicked should close the error dialogue

Number 9:

1. Entering admin login details “admin123” for both password and username should open the admin console instead of opening the program
2. This admin console should have a list of all currently registered users
3. Additionally, it should have an option to delete individual users
4. It also should have functionality that allows it to delete all users at once
5. For security reasons, the password of the users should not be stored
6. All the text in the admin console including the button texts, user etc. should have a font size of 9px, colour of black and font Segoe UI
7. The background of the admin panel and the buttons should be #f0f0f0
8. The buttons should also be white (#ffffff) on the top and bottom and black (#000000) on the bottom and right to give the illusion of depth
9. The title of the admin panel should be “Admin Panel”
10. The background colour of the header of the program should be #ffffff (The header is where the title “Admin Panel” is seen)
11. The admin panel should only have the space for a scrollbar, but no scrollbar should appear if all the elements fit on the screen

Number 10:

1. Each displayed user should have a delete button next to their username
2. The delete button should remove the user from the database completely

Number 11:

1. The button “Delete All Users” should open a confirmation box when pressed, ensuring that the admin has not misclicked
2. The confirmation box should have two options, “yes” and “no”
3. Clicking “no” should close the confirmation box
4. Clicking “yes” should delete all users from the database
5. If there are no users in the database, the program should not attempt to delete users, and instead tell the admin that there are no users to delete

**Main Maze Program Success Criteria**

Number 12:

1. When the user clicks “Make maze” a menu should open displaying settings to generate a maze
2. There should be 2 horizontal sliders visible, ranging from 15 to 75 both, labelled “height” and “width”
3. 5 buttons should be visible “Perfect”, “Randomize”, “Generate Maze”, “Go Back”, “Quit”
4. All the text, including the titles of the sliders, the values of the sliders, the text in the 5 buttons, and the number above the sliders telling the user the currently selected number in the maze creation menu should have a font size of 9px, colour of black and font Segoe UI
5. The background of the make maze menu and the buttons should be #f0f0f0
6. The buttons should also be white (#ffffff) on the top and bottom and black (#000000) on the bottom and right to give the illusion of depth
7. The title of the make maze menu should be “Maze Program”
8. The background colour of the header of the program should be #ffffff (The header is where the title “Maze Program” is seen)
9. The sliders should have background colour of #C8C8C8, the sliders themselves should be white on top #ffffff, black on bottom #000000 and have the main colour of #f0f0f0 (Same as button)

Number 13:

1. The horizontal height slider should be adjustable to have any value in range from 15 to 75 (inclusive) and be able to be set to any value in-between
2. Same applies to the vertical slider, which should be between the values 15 to 75 and can be set to any value in-between

Number 14:

1. In the make maze menu (the menu with the sliders), the “Generate maze” button should generate a maze
2. The maze should be the specified height and width supplied by the height and width slider
3. The “generate” button’s text should have a font size of 9px, colour of black and font Segoe UI
4. The “generate” button should also be white (#ffffff) on the top and bottom and black (#000000) on the bottom and right to give the illusion of depth

Number 15:

1. Once the maze has been created, there should be a “Find path” button
2. The “Find path” button allows a path to be found in the maze between the top left cell and the bottom right cell
3. Additionally, it should overlay the path on top of the maze to be visible
4. The path should have #0000FF (blue) colour
5. The “Find path” button should have text with a font size of 9px, colour of black and font Segoe UI
6. The background of the menu where the maze has been created and the buttons should be #f0f0f0
7. The buttons should also be white (#ffffff) on the top and bottom and black (#000000) on the bottom and right to give the illusion of depth
8. The title of the maze menu should be “Maze Program”
9. The background colour of the header of the program should be #ffffff (The header is where the title “Maze Program” is seen)

Number 16:

1. In the maze menu, there should also appear a “Go back” button
2. This button should send the user to the previous menu (Make maze menu)
3. The “go back” button’s text should have a font size of 9px, colour of black and font Segoe UI
4. The “go back” button should also be white (#ffffff) on the top and bottom and black (#000000) on the bottom and right to give the illusion of depth

Number 17:

1. In the maze creation menu, a button “Randomize” should be seen
2. When this button is pressed, it should generate a maze with random height and width in the range 15-75
3. This random value should be calculated separately for the height and the width
4. The “randomize” button should have a font size of 9px, colour of black and font Segoe UI
5. The “randomize” button should also be white (#ffffff) on the top and bottom and black (#000000) on the bottom and right to give the illusion of depth

Number 18:

1. In the maze creation menu, there should be a button which has the text “Perfect” at first
2. When this button is clicked, it should open a dropdown menu with two options: “Perfect” and “Non-perfect”
3. Selecting “non-perfect” maze should generate a maze that looks more natural , a maze that uses prim’s algorithm instead of recursive backtracker
4. The “Perfect” and “non-perfect” text should have a font size of 9px, colour of black and font Segoe UI
5. The “perfect” and non-perfect button should also be white (#ffffff) on the top and bottom and black (#000000) on the bottom and right to give the illusion of depth

Number 19:

1. When the maze has been created, there should be a “Regenerate” button
2. This button should re-generate the maze to have the same height, width and use the same algorithm (perfect or non-perfect) but look differently and have a different solution
3. The “regenerate” button should have a font size of 9px, colour of black and font Segoe UI
4. The “regenerate” button should also be white (#ffffff) on the top and bottom and black (#000000) on the bottom and right to give the illusion of depth

Number 20:

1. There should also be a button called “Save”
2. This button should save the maze to the database
3. When a maze is saved, its parameters should be recorded, such as the time it was saved, the height and width of the maze, the exact way the maze looked
4. Additionally each saved maze should have an assigned ID
5. The “save” button should have a font size of 9px, colour of black and font Segoe UI
6. The “save” button should also be white (#ffffff) on the top and bottom and black (#000000) on the bottom and right to give the illusion of depth

Number 21:

1. In the main menu, there should be a “My mazes” button
2. This button should open the Saved mazes menu
3. Inside of this menu, all currently saved mazes should be displayed alongside their information
4. The information the mazes are displayed with should be the time the maze was saved, the height and width of the maze, whether the maze was perfect or non-perfect, and exact layout of the maze
5. All the text in the saved mazes menu should have a font size of 9px, colour of black and font Segoe UI, including all the information such as the time the maze was saved and the height and width of the maze
6. The background of the stored mazes menu and the buttons should be #f0f0f0
7. The buttons should also be white (#ffffff) on the top and bottom and black (#000000) on the bottom and right to give the illusion of depth
8. The title of the my mazes menu should be “Maze Program”
9. The background colour of the header of the program should be #ffffff (The header is where the title “Maze Program” is seen)

Number 22:

1. Additionally, there should be a “delete” button next to every stored maze.
2. This button should delete the individual maze when clicked.
3. The “delete” button text should have a font size of 9px, colour of black and font Segoe UI
4. The “delete” button should also be white (#ffffff) on the top and bottom and black (#000000) on the bottom and right to give the illusion of depth

Number 23:

1. Next to every saved maze, there should also be a “Generate” button
2. This button will precisely re-generate the exact maze that was saved, giving the identical layout as it was saved
3. The generated maze should also have the same path as the previously stored maze.
4. The “generate” button text should have a font size of 9px, colour of black and font Segoe UI
5. The “generate” button should also be white (#ffffff) on the top and bottom and black (#000000) on the bottom and right to give the illusion of depth

Number 24:

1. In the saved mazes menu, there should also be a button “Delete all”
2. This button should first ask for confirmation by opening a confirmation dialogue
3. The confirmation dialogue should have two options, “Yes” and “No”.
4. Clicking on the “No” will close the confirmation dialogue.
5. Clicking on “Yes” will delete all stored mazes from the database.
6. The “delete all” button text should have a font size of 9px, colour of black and font Segoe UI
7. The “delete all” button should also be white (#ffffff) on the top and bottom and black (#000000) on the bottom and right to give the illusion of depth

Number 25:

1. When there are no mazes stored in the database, none should be deleted when the “Delete all” option is selected
2. Instead, an information dialogue should open telling the user that there are no mazes to delete
3. The information dialogue should have only one option “OK”
4. Clicking on the “OK” option should close the information box

Number 26:

1. In the saved mazes menu, there should also be a “Quit” button
2. This button should instantly halt the program when pressed
3. The “quit” button should have a font size of 9px, colour of black and font Segoe UI
4. The “quit” button should also be white (#ffffff) on the top and bottom and black (#000000) on the bottom and right to give the illusion of depth

Number 27:

1. The main menu should also have a “quit” button
2. When this button is pressed, the program should also halt
3. The “quit” button should have a font size of 9px, colour of black and font Segoe UI
4. The “quit” button should also be white (#ffffff) on the top and bottom and black (#000000) on the bottom and right to give the illusion of depth

Number 28:

1. In the maze creation menu, there should be a “quit” button as well
2. This button will halt the program when its pressed
3. The “quit” button should have a font size of 9px, colour of black and font Segoe UI
4. The “quit” button should also be white (#ffffff) on the top and bottom and black (#000000) on the bottom and right to give the illusion of depth

Number 29:

1. In the screen where the maze is displayed, there should be yet another “quit” button
2. If this button is pressed, it should halt the program
3. The “quit” button should have a font size of 9px, colour of black and font Segoe UI
4. The “quit” button should also be white (#ffffff) on the top and bottom and black (#000000) on the bottom and right to give the illusion of depth

Number 30:

1. In the saved mazes menu, there should be a scrollbar only when all elements can’t fit on the screen
2. If there is no scrollbar, then the scrollbar’s frame should still be visible
3. This scrollbar should allow the menu to scroll up and down if it is overloaded with elements and it is not possible to display all stored mazes at once
4. The scrollbar should be draggable and dynamically update its visual
5. The scrollbar should have a background colour of #F0F0F0 and the scrollbar itself should have a colour of #858585
6. When the scrollbar is not actively being dragged it should appear thin in size
7. While the scrollbar is being dragged, it should appear 2-3x bigger in width

Number 31:

1. In the admin panel, there should also be a scrollbar but only when all elements can’t fit on the screen
2. If there is no scrollbar, then the scrollbar’s frame should still be visible
3. The scrollbar should allow the admin panel to scroll up and down if it is also overloaded with elements and it is not possible to display all the usernames stored in the database all at once
4. The scrollbar should be draggable and dynamically update its visual too
5. The scrollbar should also have a background colour of #F0F0F0 and the scrollbar itself should have a colour of #858585
6. When the scrollbar is not actively being dragged it should appear thin in size
7. While the scrollbar is being dragged, it should appear 2-3x bigger in width

Number 32:

1. When signing up, only usernames within 3-16 characters should be accepted
2. When signing up, only usernames that have characters a-z, A-Z, 0-9, -, \_ should be accepted
3. When a condition for the username fails, an error dialog should open telling the user what condition their username has failed

Number 33:

1. When signing up, only passwords within 3-16 characters should be accepted
2. When signing up, only passwords that have characters a-z, A-Z, 0-9, -, \_ should be accepted
3. When a condition for the password fails, an error dialog should open telling the user what condition their password has failed