



**TASK**

# Capstone Project I

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# Introduction

## WELCOME TO THE FIRST CAPSTONE PROJECT OF THIS LEVEL!

Now that you know how to use React to create an attractive and functional web application, you are going to apply your knowledge in this task to create a web application that you can add to your developer portfolio.



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Remember that with our courses, you're not alone! You can contact an expert code reviewer to get support on any aspect of your course.

The best way to get help is to login to Discord at <https://discord.com/invite/hyperdev> where our specialist team is ready to support you.

Our team is happy to offer you support that is tailored to your individual career or education needs. Do not hesitate to ask a question or for additional support!



## THE TASK AT HAND

For this Capstone Project, you will be tasked to create a simple game using React. To be able to successfully do this, you will need to consolidate all the concepts you have learned about React, JSX, and JavaScript so far.

Create a React app that allows users to play Minesweeper. Minesweeper is a simple game where a user clicks on tiles to reveal whether there is a mine behind the tile or not. If a tile that hides a mine is clicked, the mine explodes, the user loses, and the game is over. If you are not familiar with Minesweeper, try it out [here](#).

It is not compulsory that the game you create be Minesweeper; you are free to create another game (such as Sudoku, Mahjong, a memory game, etc.) of your choice. Note, however, that Tic-tac-toe (detailed in the additional reading links directly preceding the compulsory Task) is not a suitable choice!

Any game that you create should meet the following criteria:

1. It should be created using CRA (Create React App).
2. It should include attractively styled components (at least 4 different types of components) that respond to user interaction. Feel free to use React-Bootstrap or another library and/or your own custom stylesheets.
3. A number of components should be rendered using the `array.Map()` method. Each component rendered in this way should have a key that uniquely identifies it (see Task: React II).
4. User interaction should modify the state of some components.
5. The state of two or more components should be synced.
6. The user should be able to restart the game.
7. The user should be clearly informed if they have won or lost the game.
8. The user should easily be able to request help (that will inform them about the rules of the game) from the UI.
9. The UI should be attractive, easy to use, and intuitive.
10. The submission should include a file called "readMe.md" which explains the rules of the game. This file should also provide clear instructions that an end user will be able to follow to be able to install and run your app on their local machine.
11. Your code reviewer should be able to launch your app by typing 'npm start' from the command line interface.
12. The file structure of the project should be well organised in line with the guidelines for structuring React projects given [here](#).
13. Your code should be well documented with appropriate comments. The code should also be easy to read, adhering to [Google's style guide](#) about indentation, meaningful variable and component names, etc.

# Instructions

- The React-related tasks will involve creating apps that need some modules to run. These modules are located in a folder called 'node\_modules', which is created when you run the following command from your command line or terminal: 'npx create-react-app my-app-name' or similar. Please note that this folder typically contains hundreds of files which, if you're working directly from Dropbox, has the potential to **slow down Dropbox sync and possibly your computer**. As a result, please follow this process when creating/running such apps:
  - Create the app *on your local machine* (outside of Dropbox) by following the instructions in the compulsory task.
  - When you're ready to have a code reviewer review the app, please *delete the node\_modules folder*.
  - Compress the folder and upload it to Dropbox.The code reviewer who is reviewing your work will, in turn, decompress the folder, install the necessary modules and run the app from their local machine.
- Additional reading:
  - <https://codepen.io/gaearon/pen/gWWZgR?editors=0010>
  - <https://reactjs.org/tutorial/tutorial.html>

## Compulsory Task 1

Follow these steps:

- Create Minesweeper or another game of your choice (not Tic-Tac-Toe) using the Create React App Starter Kit.
- Ensure that the game meets ALL the criteria listed previously for this Capstone Project.
- Once this project is complete, push it to GitHub.

If you are having any difficulties, please feel free to contact our specialist team [on Discord](#) for support.

## Completed the task(s)?

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**Reference:**

React.js. (2020). Getting Started – React. Retrieved 6 August 2020, from <https://reactjs.org/docs/getting-started.html>