

2024-2025

ABC CTE CODE JAM

PROJECT BOOKLET

OVERVIEW



We created this booklet to help you get some *ideas for your projects* this year. These are basic frameworks for projects that have been aligned to the theme to help you get some inspiration. Feel free to get some inspiration from these, but remember, your project should be your own original work! This is an interactive document. Any links will take you to our project demos.



BEGINNER PROJECT

This project creates a simple, interactive breathing timer to guide users through calming breathwork exercises.

Key Features:

- Timer: Tracks inhale, hold, and exhale phases, with custom durations.
- Audio: Plays soothing nature sounds (ocean waves) to enhance relaxation.
- Interface: Simple, user-friendly design with start/restart functionality.
- Visuals: Calming background image of a beach scene with a soft blur effect.

```
index.html
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4   <meta charset="UTF-8">
5   <meta name="viewport" content="width=device-width, initial-scale=1">
6   <title>Breathing Exercise Timer</title>
7   <style>
8     body {
9       font-family: 'Arial', sans-serif;
10      text-align: center;
11      margin: 0;
12      padding: 0;
13      background: linear-gradient(to top, #add8e6, #99ff99); background-size: 100% 100%;
14      height: 100vh;
15      color: white;
16    }
17
18    h1 {
19      font-size: 36px;
20      margin-top: 40px;
21      font-family: 'Monospace', serif;
22      color: #fff;
23    }
24
25    p {
26      font-size: 20px;
27      margin-top: 20px;
28      font-style: italic;
29      color: #fff;
30    }
31
32    .timer {
33      font-size: 24px;
34      margin-top: 10px;
35      color: #fff;
36    }
37  }
38  </style>
39  </head>
40  <body>
41    <h1>Breathing Exercise Timer</h1>
42    <p>Inhale - Hold - Exhale</p>
43    <p>Start</p>
44  </body>
45 </html>
```

[Link](#)

How It Relates to the Theme:

Helps users reduce stress and improve focus by offering a moment of mindfulness, available anytime they need a calming break.

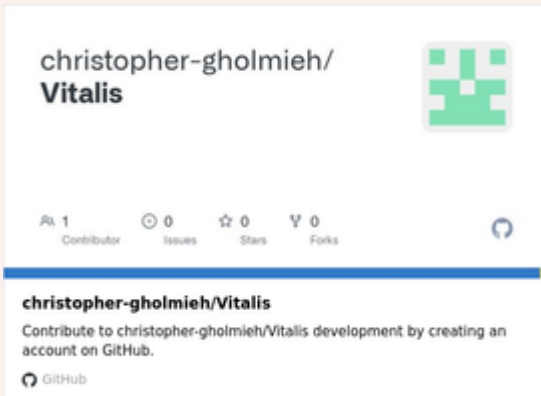


INTERMEDIATE PROJECT

This project develops a dashboard designed to allow for easily shared patient information between hospitals

Key Features:

- Dashboard: Patient information on dashboard
- Customization: Contains pagination and custom actions
- Authentication: Features like next-auth, with a custom alert that pops up upon faulty authentication.



[Link](#)

How It Relates to the Theme:

Health is important, and mistakes can happen. That is why it is important for hospitals to have easy, streamlined access to patient information to allow for correct care.



ADVANCED PROJECT

This project develops a machine learning model to classify fetal health status based on cardiotocography data.

Key Features:

- **Dataset:** Uses fetal health data with 21 medical features.
- **Model:** Random Forest Classifier for high accuracy and interpretability.
- **Preprocessing:** Standardized feature scaling for optimal model performance.
- **Performance:** Achieves 92.7% accuracy, with strong recall for normal and pathological cases.
- **Use Case:** Assists medical professionals in early detection of fetal distress, improving prenatal care.



[Link](#)

How It Relates to the Theme:

Helps patients understand their fetal health with the aid of machine learning (AI) in order to create preventative strategies and ensure successful deliveries and births from the early stages of pregnancy.

Happy Coding!



There are endless possibilities of creations you can make with code! You are not limited to make projects based solely what is in this booklet. Explore, learn, and have fun!