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REGISTRATION NUMBER-21BCE2942

ACXC163N - Recent Trends in Refrigeration and Air Conditioning

Event Task 1: Cooling Load Calculator of a Building

SCOPE Student

Objective: Create a Python program that calculates the cooling load for a building based on user input.

GITHUB LINK:- https://github.com/yaswanth14062003/21BCE2942

CODE:-

```
outdoor_temp = float(input("Enter the outdoor temperature (in Celsius): "))
indoor_temp = float(input("Enter the indoor desired temperature (in Celsius): "))

cooling_load = calculate_cooling_load(area, num_occupants, building_type, outdoor_temp, indoor_temp)

print(f"The sensible cooling load is: {cooling_load} W")

recept ValueError as e:

print(f"Error: {e}")
```

OUTPUT:-

```
Enter the area of the building (in square meters): 500
Enter the number of occupants in the building: 10
Enter the type of building (residential/commercial): residential
Enter the outdoor temperature (in Celsius): 45
Enter the indoor desired temperature (in Celsius): 17
The sensible cooling load is: 421000.0 W

...Program finished with exit code 0
Press ENTER to exit console.
```

WEBPAGE:-

2942.html:-

```
C: > Users > yaswa > Desktop > ↔ 2942.html > ...
      <!DOCTYPE html>
           <title>Cooling Load Calculator</title>
               body {
                   font-family: Arial, sans-serif;
               .container {
                   max-width: 400px;
                   margin: 0 auto;
                   padding: 20px;
                   border: 1px solid ■#ccc;
                   border-radius: 5px;
               label {
                   display: block;
                   margin-bottom: 5px;
               input {
                   width: 100%;
                   margin-bottom: 10px;
```

```
<label for="area">Area of the building (in square meters):</label>
   <input type="number" id="area" required>
   <label for="num_occupants">Number of occupants in the building:</label>
   <input type="number" id="num_occupants" required>
   <label for="building_type">Type of building:</label>
   <select id="building type" required>
       <option value="residential">Residential</option>
       <option value="commercial">Commercial</option>
   <label for="outdoor_temp">Outdoor temperature (in Celsius):</label>
   <input type="number" id="outdoor_temp" required>
   <label for="indoor_temp">Indoor desired temperature (in Celsius):</label>
   <input type="number" id="indoor_temp" required>
   <button onclick="calculateCoolingLoad()">Calculate</button>
   <div id="result"></div>
<script>
   function calculateCoolingLoad() {
```

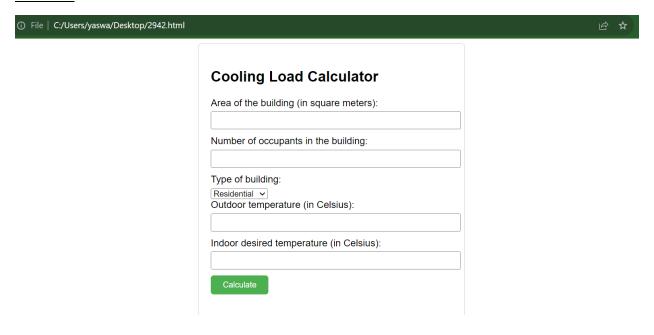
```
const area = parseFloat(document.getElementById("area").value);
const num_occupants = parseInt(document.getElementById("num_occupants").value);
const building_type = document.getElementById("building_type").value;
const outdoor_temp = parseFloat(document.getElementById("outdoor_temp").value);
const indoor_temp = parseFloat(document.getElementById("indoor_temp").value);

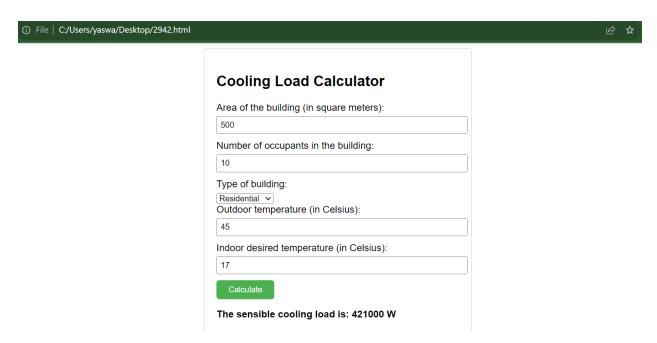
const coolingLoad = building_type === "residential" ? 100 * num_occupants : 150 * num_occupant const uCoefficient = 30;
const qConduction = uCoefficient * area * (outdoor_temp - indoor_temp);
const sensibleCoolingLoad = qConduction + coolingLoad;

document.getElementById("result").innerText = `The sensible cooling load is: ${sensibleCooling}

//script>
//script>
//script>
//script>
//script>
//script>
```

OUTPUT:-





S.SAI YASWANTH REDDY

21BCE2942