IOT BASED SMART WATER

PHASE 4: DEVLOPMENT PART 2

Development part for smart water management project using IoT involves several key steps:

1. *Define Project Scope: Determine the objectives of your smart water management system. Identify the parameters you want to monitor, such as water flow, quality, or leak detection.*

2. *Hardware Selection: Choose appropriate IoT devices and sensors for data collection. This could include flow meters, water quality sensors, and leak detectors. Ensure these devices are compatible with your IoT platform.*

3. *IoT Platform: Select an IoT platform to collect, store, and analyze data from your sensors. Platforms like AWS IoT, Google Cloud IoT, or Microsoft Azure IoT offer various tools for managing IoT devices and data.*

4. *Connectivity: Choose the right communication protocols (e.g., MQTT, CoAP) and network technology (Wi-Fi, LoRa, NB-IoT) for connecting your IoT devices to the cloud.*

5. *Data Collection: Implement the code for your IoT devices to collect data from sensors. This may involve programming microcontrollers (like Arduino or Raspberry Pi) to read sensor values and send them to the IoT platform.*

6. *Data Processing and Storage:Set up data processing pipelines to clean, aggregate, and store the sensor data. Use databases or data lakes to store the processed data securely.*

7. *Data Analysis: Implement algorithms to analyze the collected data. Machine learning models can help predict water usage patterns, detect anomalies, and optimize water distribution.*

8. *User Interface: Develop a user-friendly interface (web or mobile app) for end-users and administrators to visualize the water usage data, receive alerts, and control devices if necessary.*

   8.Alerts and Notifications: Implement alerting systems to notify users and administrators in real-time when irregularities such as leaks or water quality issues are detected.

9. *Security:Ensure the security of your IoT system. Use encryption, secure APIs, and authentication mechanisms to protect data and devices from unauthorized access.*

10. *Testing and Calibration: Thoroughly test the entire system to ensure accurate data collection and analysis. Calibrate sensors regularly to maintain accuracy.*

11. *Maintenance and Updates:Plan for regular maintenance and updates of both hardware and software components to keep the system running smoothly and securely.*

OVERVIEW:

Smart Waters is an unprecedented application that streamlines your boating experience by changing the rules: it connects key players of the yachting world, centralizes boat data as never before and enables the birth of synergetic relationships.

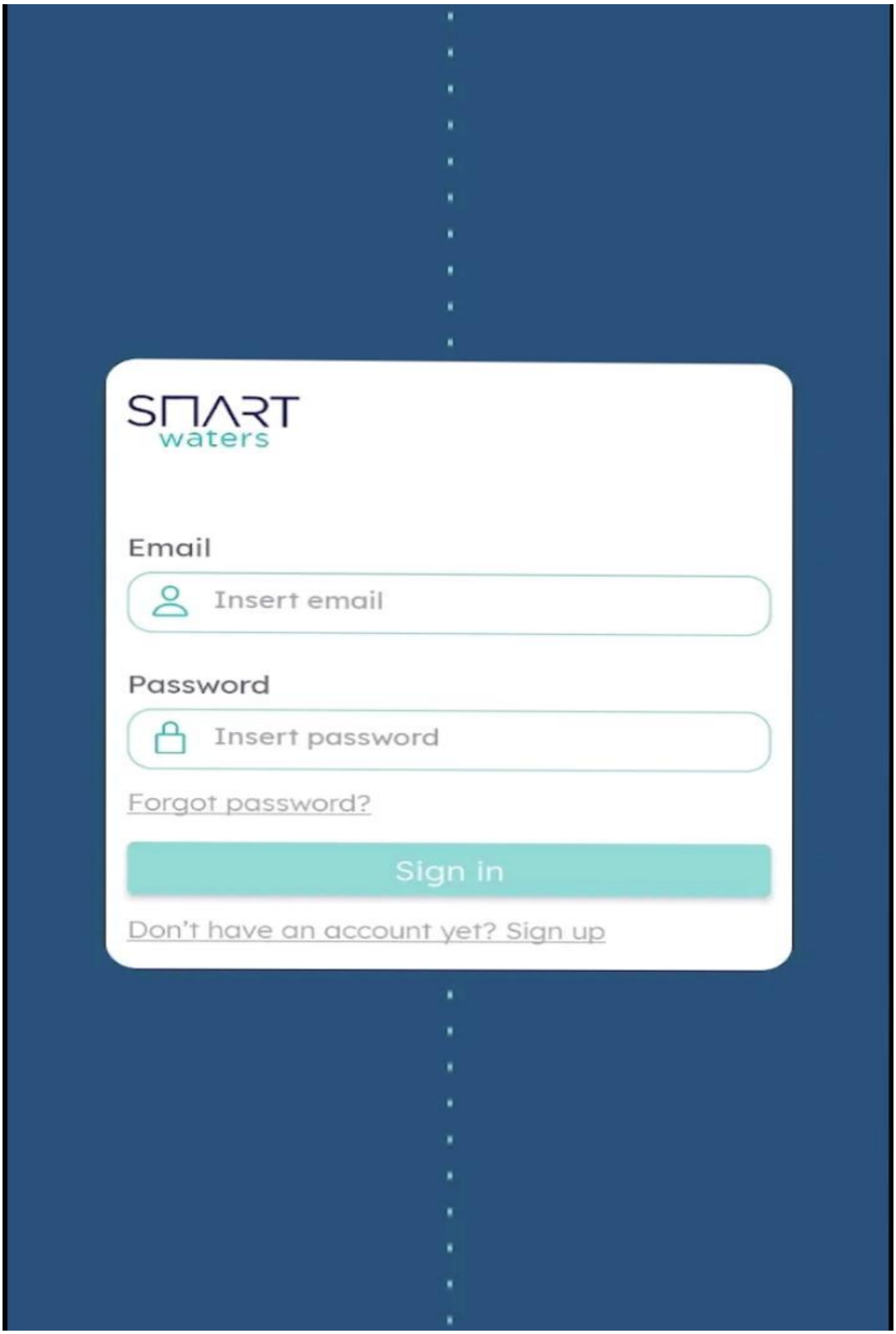
CODING:

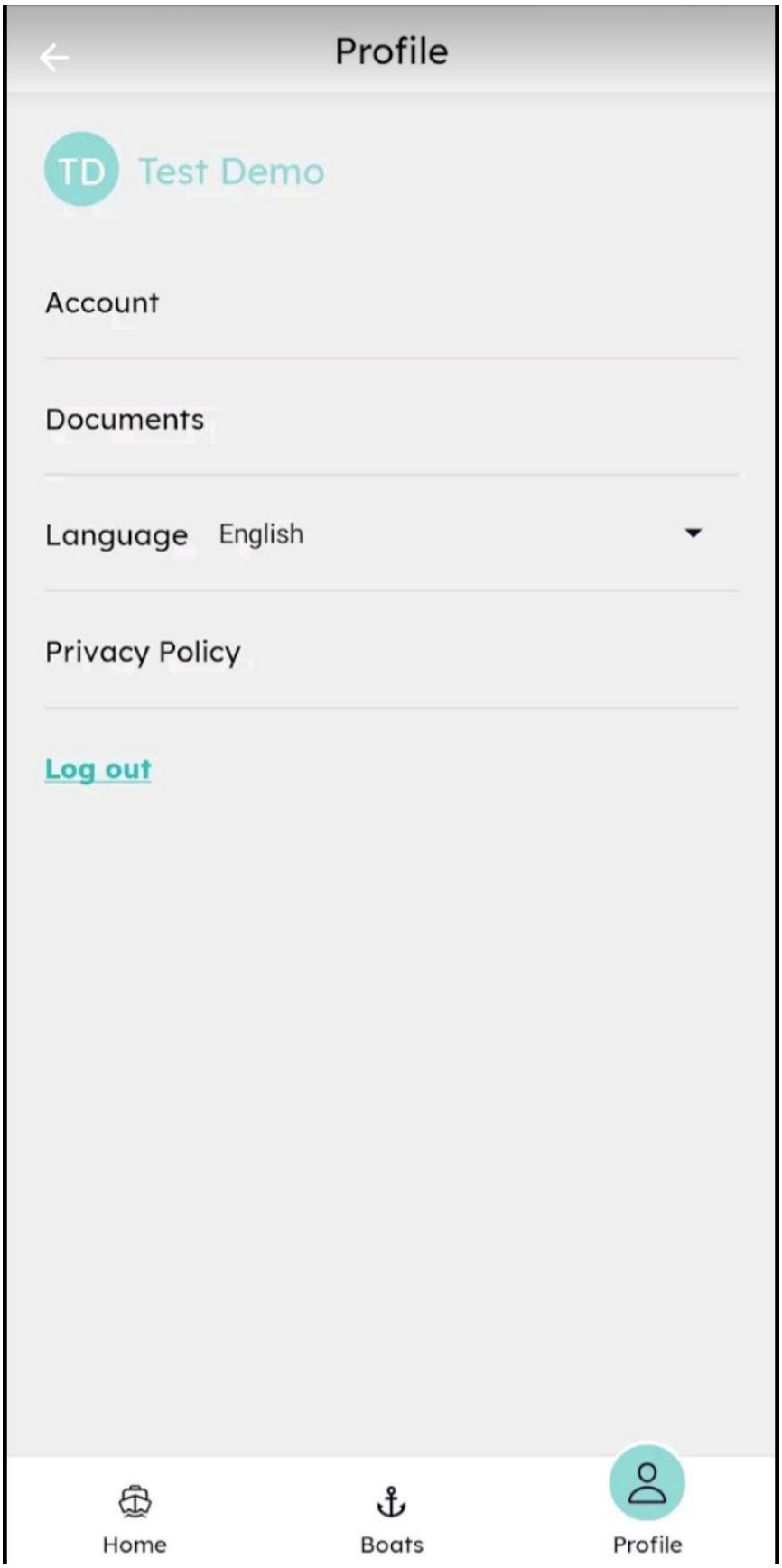
```html
<!DOCTYPE html>
<html lang="en">

<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Smart Water Management System</title>
```

```
    <style>
        Body {
            Font-family: Arial, sans-serif;
            Margin: 20px;
        }

        .container {
            Max-width: 600px;
            Margin: 0 auto;
        }

        .data-card {
            Border: 1px solid #ccc;
            Padding: 20px;
            Margin-bottom: 20px;
            Border-radius: 5px;
        }
    </style>
</head>

<body>
    <div class="container">
```

```
    <h1>Smart Water Management System</h1>

    <div class="data-card">
        <h2>Water Usage Information</h2>
        <p><strong>Current Flow Rate:</strong> <span id="flow-rate">0 L/min</span></p>
        <p><strong>Total Usage:</strong> <span id="total-usage">0 Liters</span></p>
    </div>
</div>

<script>
    // Dummy data (for demonstration purposes)
    Const dummyData = {
        flowRate: 2.5,  // in liters per minute
        totalUsage: 1500  // in liters
    };

    // Update UI with dummy data
    Document.getElementById('flow-rate').textContent = dummyData.flowRate + ' L/min';
    Document.getElementById('total-usage').textContent = dummyData.totalUsage + ' Liters';
```

```
    </script>
</body>

</html>
```


SMART
waters
Email
Insert email
Password
Insert password
Forgot password?
Sign in
Don't have an account yet? Sign up


Profile
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Test Demo
Account
Documents
Language
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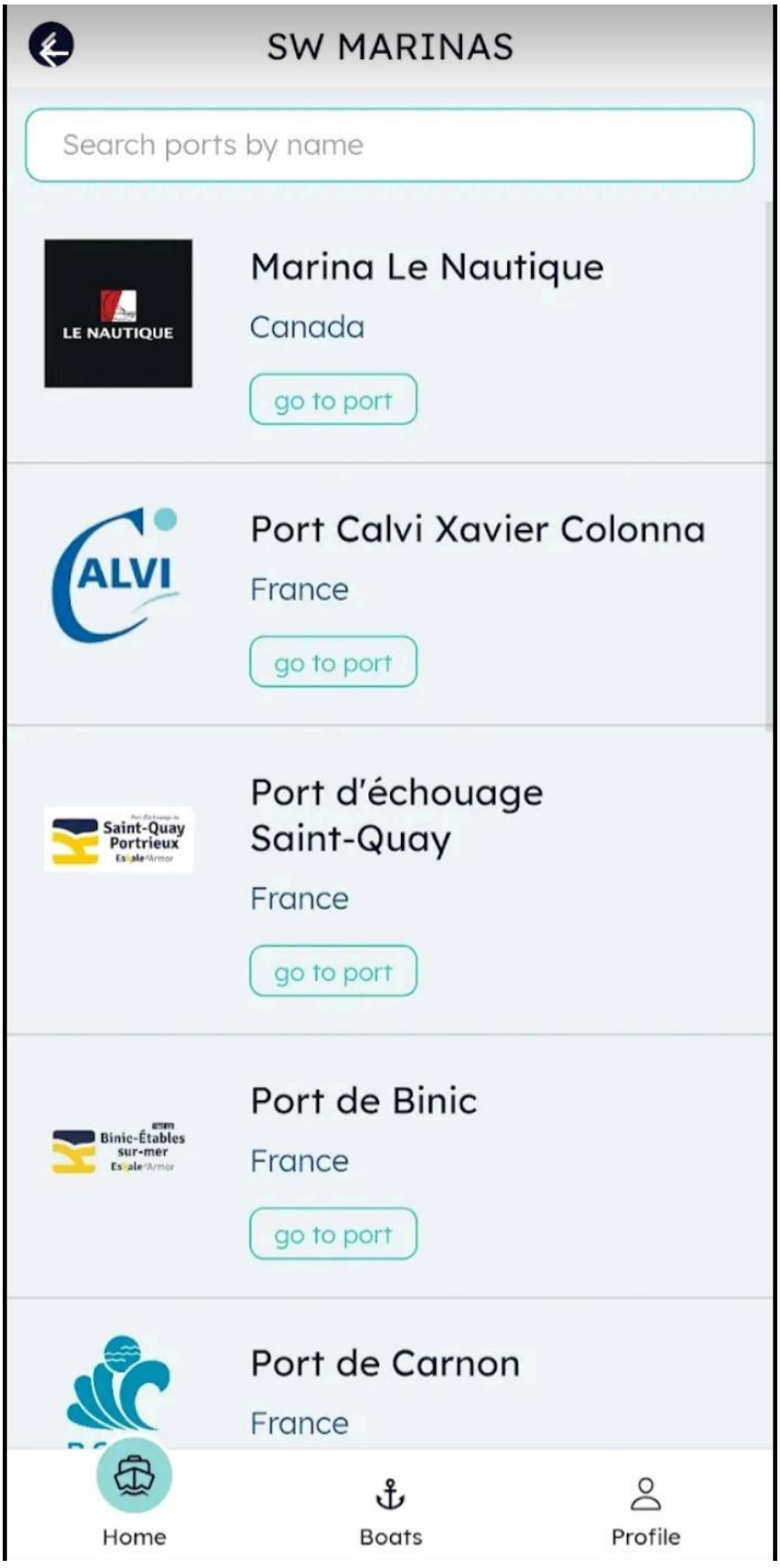
Privacy Policy
Log out
Home
Boats
Profile


SW MARINAS
Search ports by name
Marina Le Nautique
Canada
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France
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Boats
Profile

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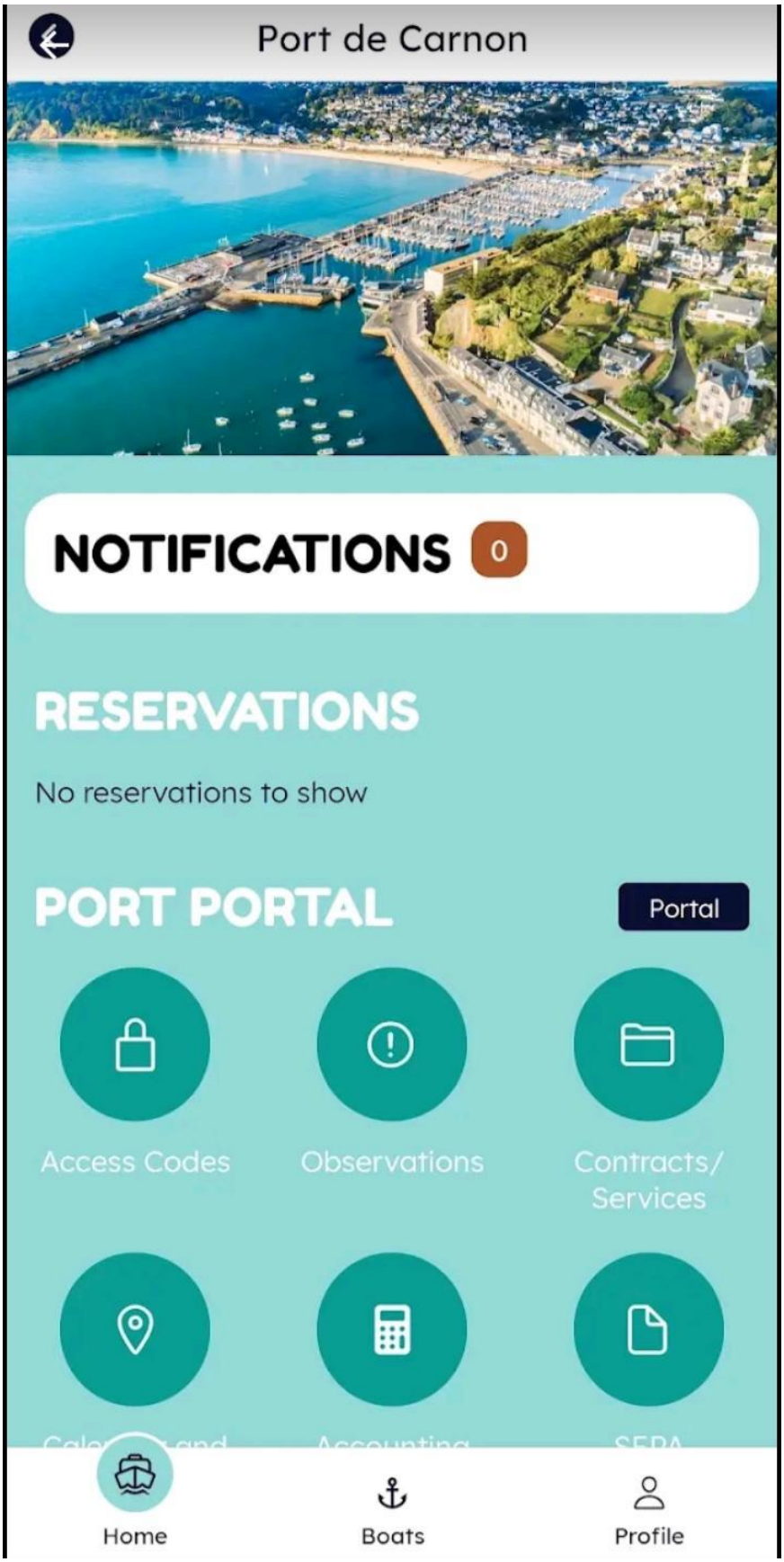
Port de Carnon
NOTIFICATIONS 0
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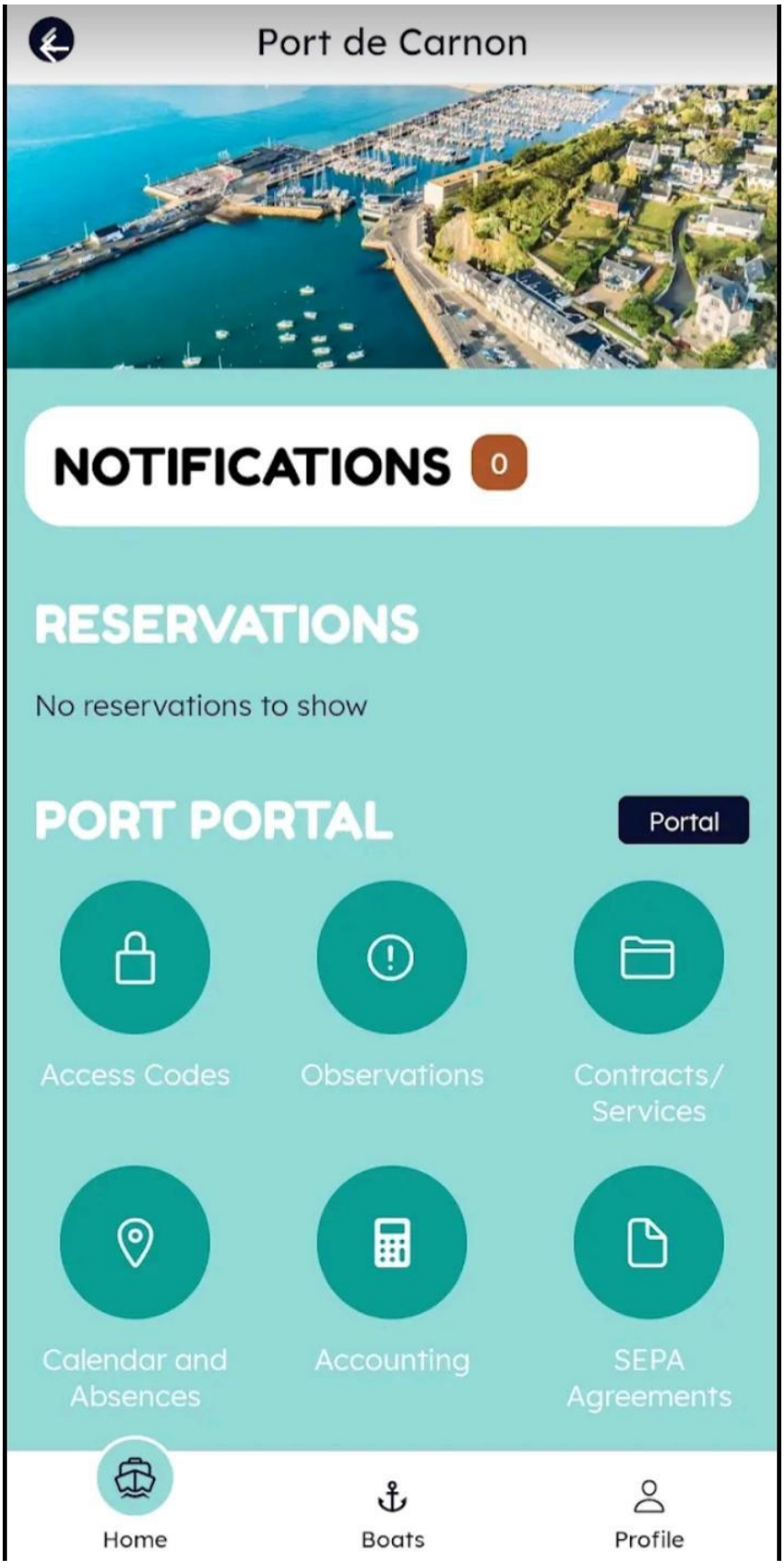
Observations
Contracts/ Services
Home
Boats
Profile


Port de Carnon
NOTIFICATIONS 0
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Home
Boats
Profile