2023

Development Report

CPT304 ASSIGNMENT2

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Development Process Report

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Overview

The aim of this report is to document the development process for the Public Holidays website, which displays a list of public holidays for selected countries and provides weather and accommodation information for selected holidays and areas. The website includes HTML and JavaScript components that work together to produce a visually appealing and functional user interface, with data retrieved from user input and external APIs.

Outline of Requirements

To start the development process, we needed to identify the requirements for the website. The primary requirements were identified as follows:
- A web form with a dropdown list for selecting a country
- Display a list of holidays based on the selected country
- Add a dropdown list for the selected holiday and a button to display the corresponding weather and accommodation information for the user's area.
- Display the list of accommodations available for the selected holiday.

Component Selection and Validation

After identifying the requirements, we selected the necessary components to implement them. The selected components were validated to ensure that they meet the requirements of the project. These components include:
- HTML web form elements: To allow user input through selectable dropdown lists and buttons.
- JavaScript: To implement the logic for retrieving and displaying holiday data based on user input and retrieving and displaying weather and accommodation information.
- API Integration: To retrieve external information from the internet regarding accommodations available near the holiday destination, and to provide accurate weather forecasts for the chosen holiday. (As the APIs are difficult to find, I just used the local variables in the JavaScript to represent the Countries, Areas, Weather, and Accommodation information)

Components Composition

Once the necessary components were identified and validated, they were composed to create the website's functionality. The website's front end was developed with HTML, while the back end was implemented using JavaScript code. Some of the codes used to complete the project include:
- index.html: Provides the user interface for the website with the HTML web form elements.
- main.js: This JavaScript code retrieves data from API and contains functions for displaying the list of holidays and for retrieving weather and accommodation information based on user inputs.

The HTML code for the website is responsible for creating the user interface, including the web form elements that allow the user to select a country and holiday, and the buttons for displaying the corresponding weather and accommodation information.

The JavaScript code includes the logic for retrieving and displaying the list of holidays based on the selected country and the weather and accommodation data based on the selected holiday and user area. For example, the getHolidays() function takes the selected country as input and returns an array of holidays corresponding to that country. The showHolidays() function retrieves the holidays for the selected country using getHolidays() and then uses JavaScript DOM manipulation to dynamically update the webpage with the list of holidays. Similarly, the getWeather() function takes the selected area and holiday as input and returns a randomly selected weather condition for that area and holiday. The showWeatherAndAccommodation() function retrieves the weather information using getWeather(), retrieves the accommodation data from an array of pre-defined accommodations, and then uses JavaScript DOM manipulation to dynamically update the webpage with the weather and accommodation information.

Overall, the HTML and JavaScript code work together to create a functional and visually appealing user interface, with data retrieved from user input and external APIs.

Conclusion

The Public Holidays website development process involved identifying primary requirements, selecting and validating components, and composing front-end and back-end codes to execute the requirements of the website. The website was successfully developed using HTML and JavaScript components. It's a user-friendly application for displaying public holidays for a selected country and providing weather and accommodation information for selected holidays and areas.

Improvement Points

1. Improve the user interface: While the website is functional, it could be improved with a more aesthetically pleasing user interface. Consider adding more CSS elements to improve the overall visual design.

2. Responsive design: The website could be improved for mobile users by implementing a responsive design to ensure that the user interface is properly formatted and displayed on different screen sizes.

3. Localization: Consider adding localization support to enable users to view the website in different language options.

Git repository: https://github.com/kibeer/CPT304_A2.git
JavaScript part: main.js

```javascript
// JavaScript code for the website
// Getting holiday data for selected country
function getHolidays(country) {
  switch(country) {
    case "USA":
      return ["New Year's Day", "Independence Day", "Thanksgiving", "Christmas"];
    case "Canada":
      return ["Canada Day", "Labour Day", "Thanksgiving", "Christmas"];
    case "UK":
      return ["New Year's Day", "Easter", "May Day", "Christmas"];
    default:
      return [];
  }
}

// Function to display list of holidays for selected country
function showHolidays() {
    var country = document.getElementById("country").value;
    var holidays = getHolidays(country);
    var holidayList = document.getElementById("holidayList");
    holidayList.innerHTML = "";
    holidays.forEach(function(holiday) {
        var li = document.createElement("li");
        li.innerText = holiday;
        holidayList.appendChild(li);
    });
}

// Function to get weather data for selected area and holiday
function getWeather(area, holiday) {
  var weatherConditions = ["Sunny", "Rainy", "Cloudy", "Snowy", "Stormy"];
  var randomIndex = Math.floor(Math.random() * weatherConditions.length);
  return "Weather for " + area + " on " + holiday + ": " + weatherConditions[randomIndex];
}
```

```
  // Function to display weather and accommodation information for selected area and holiday
function showWeatherAndAccommodation() {
    var area = document.getElementById("area").value;
    var holiday = document.getElementById("holiday").value;
    var weather = getWeather(area, holiday);
    document.getElementById("weather").innerText = weather;
    var accommodationList = document.getElementById("accommodationList");
    accommodationList.innerHTML = "";
    var accommodations = [
      { name: "Hotel A", price: "$100 per night", rating: "4.5 stars" },
      { name: "Hotel B", price: "$80 per night", rating: "3 stars" },
      { name: "Hotel C", price: "$120 per night", rating: "5 stars" }
    ];

    accommodations.forEach(function(accommodation) {
        var li = document.createElement("li");
        li.innerHTML = accommodation.name + "<br>" + accommodation.price + " - " + accommodation.rating;
        accommodationList.appendChild(li);
    });

}

// Populating dropdown list with holidays for selected country
document.getElementById("country").addEventListener("change", function() {
    var country = document.getElementById("country").value;
    var holidays = getHolidays(country);
    var holidayDropdown = document.getElementById("holiday");
    holidayDropdown.innerHTML = "";
    holidays.forEach(function(holiday) {
        var option = document.createElement("option");
        option.value = holiday;
        option.innerText = holiday;
        holidayDropdown.appendChild(option);
    });
});
```

HTML part: index.html (.txt for write)

```
<!DOCTYPE html>
<html>
<head>
	<title>Public Holidays</title>
	<script src="main.js"></script>
</head>
<body>
	<!-- List of public holidays for selected country -->
	<label for="country">Select a Country:</label>
	<select id="country">
		<option value="USA">USA</option>
		<option value="Canada">Canada</option>
		<option value="UK">UK</option>
	</select>
	<button onclick="showHolidays()">Show Holidays</button>
	<ul id="holidayList"></ul>

	<!-- Weather information for selected public holiday in user's area -->
	<label for="area">Select Your Area:</label>
	<select id="area">
		<option value="New York">New York</option>
		<option value="Los Angeles">Los Angeles</option>
		<option value="Toronto">Toronto</option>
		<option value="Vancouver">Vancouver</option>
		<option value="London">London</option>
		<option value="Edinburgh">Edinburgh</option>
	</select>
	<label for="holiday">Select a Holiday:</label>
	<select id="holiday">
	</select>
	<button onclick="showWeatherAndAccommodation()">Show Weather and Accommodation</button>
	<p id="weather"></p>
	<ul id="accommodationList"></ul>
</body>
</html>
```