world skills Colombia

Test Project

Module A (Speed-Test)
Web Technologies

WSC2024_TP17

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Table of Contents

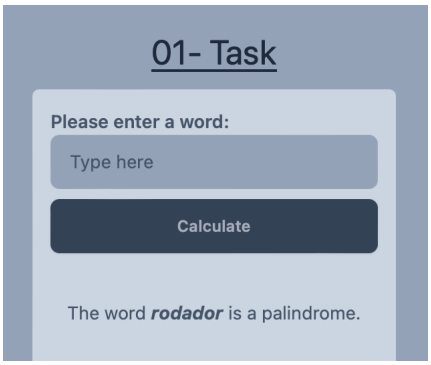
Introduction

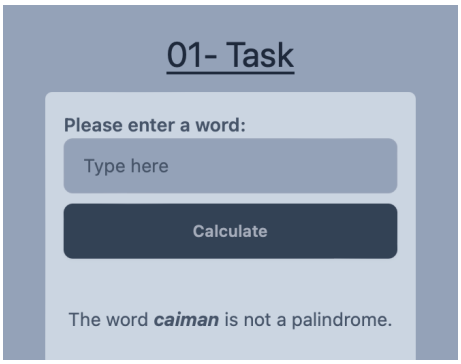
This module will test your ability to apply your HTML, CSS, and JavaScript knowledge effectively and creatively. You will be required to complete several tasks within 2 hours. There will be both easy and routine tasks as well as more complex ones. Typically, you can spend between 10 to 20 minutes on each task.

Tasks to Complete

Task 1: JS Palindromes (Easy)

A JavaScript solution is needed for a programming challenge that determines if an entered word is a palindrome. The function must accept a string and return a message indicating whether the word is a palindrome, which means it reads the same forward and backward.

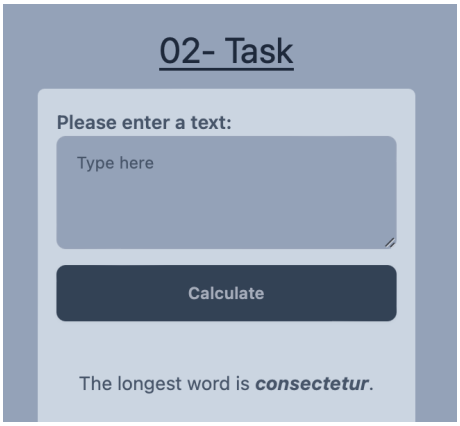




Examples of palindrome words: (radar, level, civic, rotator, madam).

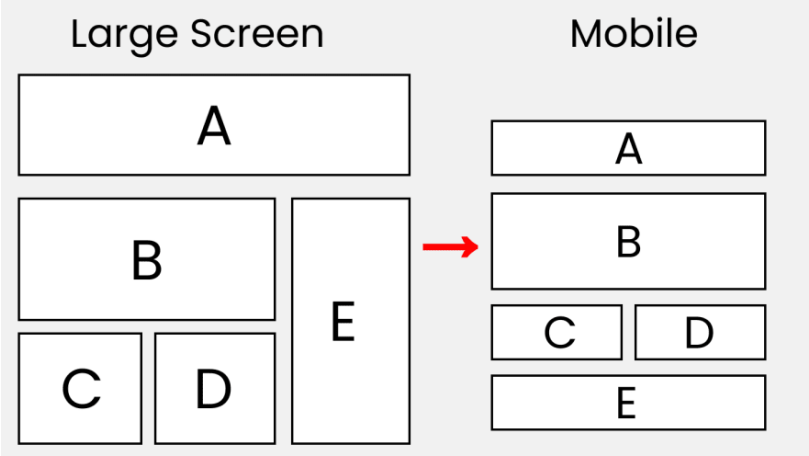
Task 2: JS Longest Word (Easy)

A JavaScript solution is needed for a programming challenge that identifies the longest word in a given text. The function must accept a string and return a message with the word of the greatest length.



Task 3: HTML/CSS Grid Layout (Easy)

Your task is to create the following design using HTML and CSS. The design must be responsive and work on both large screens and mobile devices as shown in the image below. The breakpoint should be at 768px screen width.



Task 4: JS Rotate Strings (Medium)

Write a function that receives two strings and returns the number of characters needed to rotate the first string forward to match the second.

Please work in the file: js/shiftedDiff.js.

Example:
Take the strings "fatigue" and "tiguefa". In this case, the first string can be rotated 5 characters forward to produce the second string, so 5 would be returned. These are the steps:

- no rotations: "fatigue"
- 1st rotation: "efatigu"
- 2nd rotation: "uefatig"
- 3rd rotation: "guefati"
- 4th rotation: "iguefat"
- 5th rotation: "tiguefa"

If the second string is not a valid rotation of the first, the method should return -1.

Examples:
• "coffee", "eecoff" => 2
• "eecoff", "coffee" => 4
• "moose", "Moose" => -1
• "isn't", "'tisn" => 2
• "Esham", "Esham" => 0
• "dog", "god" => -1

Task 5: JS Fastest Runners (Medium)

You are given an array of runners that contains their paces for each kilometer after a 7 km race in the following format (pace values are in mm
format):

```
[
        {
        "name": "Alice",
        "paces": ["5:50", "6:00", "6:06", "6:07", "6:08", "6:19", "6:28"]
        },
        ...
]
```

Return an array that only contains the runners who completed the race in less time than the average of all runners. The array should be ordered by finish time, with the runner who finished first in the array.
Include only the name, average pace, and fastest pace of each runner. The result should be in the following format:

```
[
        {
        "name": "Alice",
        "averagePace": "6:10",
        "fastestPace": "5:50"
        },
        ...
]
```

Work in the file: js/fastestRunners.js.
You can find sample data in: js/runners.json.

Task 6: CSS Counter (Hard)

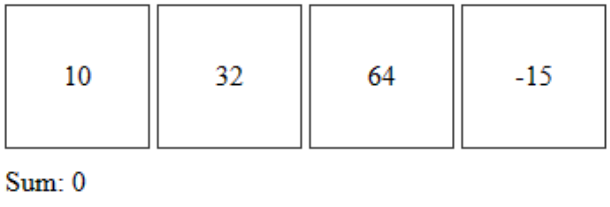
Create the following application using only HTML and CSS.

Create 4 boxes, with the following numbers in them consecutively: 10, 32, 64, -15. Each box should function as a checkbox: when the user clicks on it, it will be highlighted with a gold background color, and if clicked again, the highlight will be removed.

Below the boxes, show the sum of the numbers that are currently checked.

Example:

Default state:

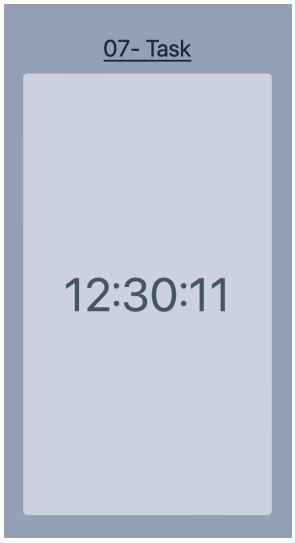


After clicking on 10 and 64:

Sum: 74

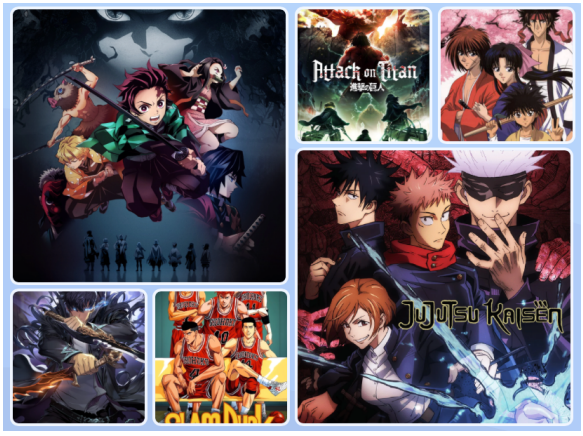
Task 7: JS Digital Clock (Medium)

Using HTML and JavaScript, create a digital clock that displays the current time (hours:minutes:seconds). The clock must update every second.



Task 8: CSS Grid Areas (Medium)

A CSS solution using grid areas is needed. The final design must be exact to the provided sample image.



Task 9: JS Sum Two Largest Integers (Medium)

Write a function that takes an array of integers as input and returns the sum of the two largest integers in the array. The function should return 0 if the array has fewer than two elements.

Input	Output
`[1, 2, 3, 4, 5]`	`9`
`[5, 5, 5, 5, 5]`	`10`
`[1]`	`0`
`[]`	`0`

Task 10: CSS Steps (Easy)

A CSS solution is needed to create an animation using the steps() property. A sprite image will be provided, and you must create an animation that uses the appropriate steps to show the image sequence correctly.

Competitor Instructions

Follow these instructions to submit your work.

1. On your desktop, you will find a folder named "**ModuleA-XYZ**". Rename the part "XYZ" with the name of your region (e.g., ModuleA-Amazonas). This directory contains 10 subfolders named "Task-01 to Task-10", where you will develop the speed tests.

2. You must create a file named "**index.html**" within the main directory "**ModuleA-XYZ**" where you will create a basic menu to link to the different tasks (the links will open in a new window).

Marking Scheme

SECTION	CRITERION	JUDGEMENT	MEASUREMENT	TOTAL
A1	Task 1	0	2,5	**2,5**
A2	Task 2	0	2,5	**2,5**
A3	Task 3	0	2,5	**2,5**
A4	Task 4	0	2,5	**2,5**
A5	Task 5	0	2,5	**2,5**
A6	Task 6	0	2,5	**2,5**
A7	Task 7	0	2,5	**2,5**
A8	Task 8	0	2,5	**2,5**
A9	Task 9	0	2,5	**2,5**
A10	Task 10	0	2,5	**2,5**
		0	25	**25**