**Java script Assignment on scopes**

1. **Build a simple 3-question quiz app that:**

* **Tracks score using a global variable.**
* **Each question is asked inside a function, and a local variable is used to evaluate the answer.**
* **Demonstrates the difference between function declarations and function expressions.**
* **Show behavior when using variables before declaration (hoisting effect).**

**Bonus: Add a "review score" button that tries to access a score variable declared inside a question function (should not be accessible).**

**Rubrics for Evaluation**

| Criteria | Marks | Remarks |
| --- | --- | --- |
| Use of Function Scope | 2 | Differentiate between local and global variables |
| Use of Function Declaration and Expression | 2 | At least one of each used correctly |
| Correct Demonstration of Hoisting (var/function) | 2 | Shows understanding through console behaviour. |
| Output Logic and Score Calculation | 2 | Quiz runs, score is calculated and displayed |
| Code Readability and Commenting | 2 | Clean code, meaningful names, helpful comments |

1. **Your college wants a mini web-based tool where students can input their activity scores (sports, clubs, coding contests, etc.), and the system evaluates their rank and category (Star Performer, Active, Inactive).**

**Requirements:**

1. **Global Variables**:
   * Declare student name and an array of activity scores (e.g., [10, 20, 15, 5]).
2. **Function Declaration**:
   * calculateTotal() – Calculates the sum of all scores.
3. **Function Expression**:
   * evaluateRank – Based on total score:
     + > 40 – Star Performer
     + 30–40 – Active
     + < 30 – Inactive
4. **Anonymous Function**:
   * Store in a variable: calculates average score.
5. **Lexical Scope Task**:
   * Inside a function generateReport(), define a nested function showDetails() that uses variables from its outer function.
6. **Hoisting Experiment**:
   * Use a variable before declaration (e.g., console.log(category) before declaring it with var) to show it's undefined.
7. **Scope Isolation Test**:
   * Declare a var inside an if or for block and access it outside the block to demonstrate function scope (not block scope).

**Expected Output (Console Based):**

Student: Anika

Activity Scores: [10, 20, 15, 5]

Total Score: 50

Average Score: 12.5

Rank: Star Performer

Report:

Student: Anika

Rank: Star Performer

Message: Great job on co-curriculars!

### ****Evaluation Rubric (Total 10 Marks):****

|  |  |
| --- | --- |
| | Criteria | Marks | Remarks (Use These While Grading) | | --- | --- | --- | | Global vs Local Scope Demonstrated | 2 | Global variables used clearly for student data and local vars within functions. | | Use of Function Declarations, Expressions & Anonymous Functions | 2 | All three types used correctly with meaningful logic. | | Demonstrated Lexical Scope with Nested Function | 2 | Inner function correctly accesses outer function’s variables (e.g., showDetails() inside generateReport()). | | Hoisting Concept Shown Clearly | 2 | Variable or function used before declaration, behavior explained via undefined or error. | | Code Completeness & Output Accuracy | 2 | All calculations (total, average, rank) done correctly with meaningful console outputs. | |  |
| **Submission Format:**   * A single .js file or .html file with embedded JS. * Include a comment block at the top with:   + Name, USN,Section   + A short paragraph explaining what you learned about scope   <https://forms.gle/i6Y17PkKj91Cvkvh6> |  |