**Data Structures and Algorithms Project Report**

**1. Deadlines**

**Final Submission Deadline:**

* The final project report, along with all associated materials, must be submitted by **27/08/2024**. No extensions will be granted unless in exceptional circumstances, which must be approved in advance.

**2. Submission of Project Materials**

**Required Materials:**

* **Project Report:** A detailed document explaining the problem, methods, analysis, and conclusions.
* **Codebase:** A complete and well-documented codebase, including all scripts and supporting files.
* **Presentation:** A summary presentation (PowerPoint or similar) that highlights key aspects of the project.
* **Additional Files:** Any datasets, configuration files, or other resources used in the project.

**Submission Process:**

* All materials should be submitted via the **Moodle** **only** in a single compressed folder named following the format YourName\_ProjectTitle.zip.
* Ensure that all files are clearly named and organized into relevant directories (e.g., /Code, /Report, /Data).

**3. Report Content and Style Guide**

**Report Structure:**

1. **Title Page:**
   * Project Title
   * Student Name
   * Student ID
   * Date of Submission
2. **Abstract:**
   * A brief summary of the project, including the problem, methodology, and main findings (150-200 words).
3. **Introduction:**
   * Explanation of the chosen topic and its relevance to data structures and algorithms.
   * Objectives of the project.
4. **Literature Review:**
   * Review of existing work and research related to the topic.
5. **Methodology:**
   * Detailed description of the approaches, algorithms, and data structures used.
6. **Implementation:**
   * Explanation of how the methodology was implemented, including any challenges faced.
7. **Results and Analysis:**
   * Presentation and interpretation of the results obtained from the project.
8. **Conclusion:**
   * Summary of findings and possible future work.
9. **References:**
   * Proper citation of all sources used in APA or IEEE style.

**Formatting Guidelines:**

* **Font:** Times New Roman, 12 pt.
* **Spacing:** 1.5 line spacing.
* **Margins:** 1-inch margins on all sides.
* **Headings:** Use consistent and clear headings for each section.

#### 4. Choosing a Topic

**Criteria for Topic Selection:**

* The topic must be directly related to data structures and algorithms.
* It should pose a clear problem that can be addressed through the implementation of data structures and algorithmic solutions.
* The topic should be of sufficient complexity to demonstrate an understanding of advanced concepts.
* Examples of topics might include:
  + Implementing and analyzing different sorting algorithms.
  + Comparing various data structures for a specific application (e.g., graph traversal).
  + Optimizing search algorithms for large datasets.

**5. Report Evaluation (Rubrics)**

**Evaluation Criteria (Total Marks: 15):**

1. **Understanding of the Topic (4 points):**
   * Depth of understanding and clear articulation of the problem.
2. **Implementation and Methodology (5 points):**
   * The effectiveness of the algorithms and data structures used.
   * Quality and functionality of the implementation.
3. **Analysis and Results (3 points):**
   * Quality of analysis and interpretation of results.
4. **Presentation and Style (2 points):**
   * Clarity, coherence, and organization of the report.
   * Adherence to the style guide.
5. **Originality and Innovation (1 point):**
   * The creativity and originality of the approach.

**Report Evaluation:**

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| --- | --- | --- |
| **Evaluation Criteria** | **Description** | **Marks** |
| **Understanding of the Topic** | Depth of understanding and clear articulation of the problem. | **4 points** |
| **Implementation and Methodology** | The effectiveness of the algorithms and data structures used.  Quality and functionality of the implementation. | **5 points** |
| **Analysis and Results** | Quality of analysis and interpretation of results. | **3 points** |
| **Presentation and Style** | Clarity, coherence, and organization of the report.  Adherence to the style guide. | **2 points** |
| **Originality and Innovation** | The creativity and originality of the approach. | **1 point** |