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Tarea Integradora 2

**STAGE 1:**

1. **Identification of the problem**

We want to develop a software prototype that allows you to manage CRUD operations in a database on the American continent.

**Needed:**

* The simulation of creating a close number of records of the population of the American continent for 2020 (around one billion people).

**Problem:** Efficient database storage, each record must be editable and removable.

1. Research

Functional requirements:

1. Add a new user to the database. The following data must be taken into account: code, name, surname, sex, date of birth, height, nationality and photograph.
2. Update a person's record in the database. All user information must be editable, except for the code that is automatically generated.
3. Delete a person's record from the database.
4. Search for a person in the database by any criteria name, surname, full name (name + surname) and code.

**AVL:** The AVL tree takes its name from the initials of the surnames of its inventors, Georgii Adelson-Velskii and Yevgeniy Landis. They made it known in the publication of an article in 1962, "An algorithm for the organization of information" ("An algorithm for the organization of information").

AVL trees are always balanced in such a way that for all nodes, the height of the left branch does not differ by more than one unit from the height of the right branch or vice versa. Thanks to this form of balance (or balancing), the complexity of a search in one of these trees is always kept in order of complexity O (log n). The balance factor can be stored directly at each node or computed from the heights of the subtrees.

References:

Tree AVL definition.

<https://sites.google.com/a/espe.edu.ec/programacion-ii/home/arboles/arboles-avl>

**STAGE 2:**

theoretical framework: TODO

**STAGE 3:**

**Brainstorming:**

**TODO**

Alternative 1:

Alternative 2:

Alternative 3:

Alternative 4:

Alternative 5:

Alternative 6:

**STAGE 4:** DESCARTAR IDEAS. DEJAR 3. AGREGAR INFO.

**TODO**

**Evaluation and selection of the best solution**

**STAGE 5:**

**TODO**

**Criterion A:**

* **[1 points]**
* **[2 points]**
* **[3 points]**

**Criterion B:**

* **[1 points]**
* **[2 points]**
* **[3 points]**

**Criterion C:**

* **[1 points]**
* **[2 points]**
* **[3 points]**

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| --- | --- | --- | --- | --- |
| **SOLUTION** | **Criterion A** | **Criterion B** | **Criterion C** | **Total points** |
| Alternative 1 |  |  |  |  |
| Alternative 2 |  |  |  |  |
| Alternative 3 |  |  |  |  |