



# Final Project: Student Database

Development Guide in Snap!

## 1 Introduction

---

We are going to develop a practical project to master the handling of data structures in **Snap!**. Learning will be guided and progressive.

### 1.1 Functionalities to implement

- **Save:** Insertion of new data.
- **Delete:** Removal of records.
- **Sort:** Logical organization of information.
- **Query:** Reading and searching for elements.
- **Modify:** Editing existing data.

### 1.2 Methodology

Progress will be incremental: first we will establish the basic structure and, upon it, add each operation until the system is complete.

## 2 Project development

---

### 2.1 Import the stage

Download and import the stage from:

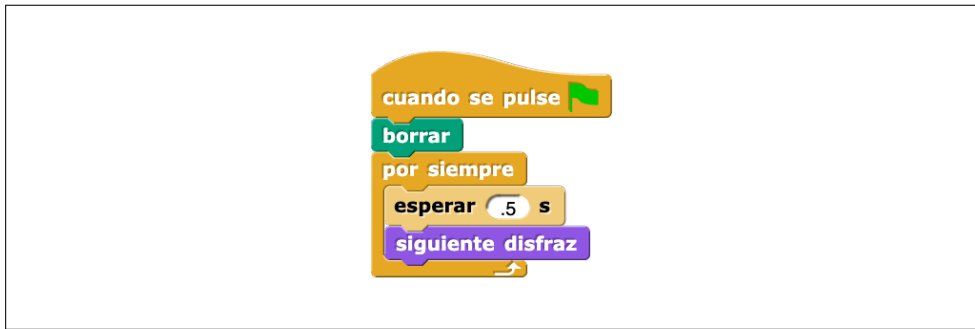
<https://github.com/costadamorte/snap-/blob/main/escenario.png>

### 2.2 Import the Terminal object

Import a new object called Terminal. To do this, go to Object > Costumes and drag the Terminal object. Download the **Terminal** object from:

<https://github.com/costadamorte/snap-/blob/main/Terminal.xml>

### Initial configuration of the Terminal object



### 2.3 Delete default object

Delete the object "Object", leaving only the terminal object **Terminal**.

### 2.4 Declare variable

Create the variable `alumnos`.

### 2.5 Load CSV data

Import data from a csv file that you download from a server. In the url section, you must add the following address: <https://gist.githubusercontent.com/costadamorte/1fcaea9b10c11e117ff0c4c904e2cc30tas.csv>

### Data Loading (Key "s")



### 2.6 Delete data

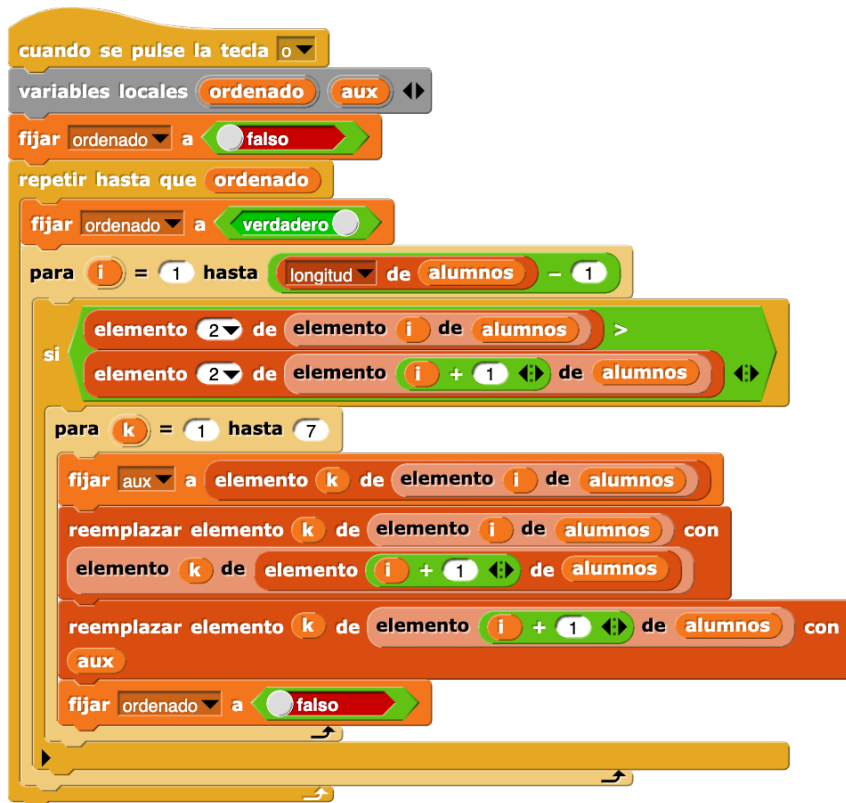
In case you wish to delete all records from the "alumnos" variable, you can implement the following algorithm.

### Data Deletion (Key "r")



## 2.7 Sort students

### Sorting Algorithm (Key "r")



## 2.8 Calculate average grade and qualification

### Main Block (Key "m")

```
cuando se pulse la tecla m
  variables locales n1 n2 n3 md
  insertar media en 6 de elemento 1 de alumnos
  insertar Nota en 7 de elemento 1 de alumnos
  para i = 2 hasta longitud de alumnos
    fijar n1 a elemento 3 de elemento i de alumnos
    fijar n2 a elemento 4 de elemento i de alumnos
    fijar n3 a elemento 5 de elemento i de alumnos
    fijar md a calculoPromedio n1 n2 n3
    insertar md en 6 de elemento i de alumnos
    insertar calculoNotaFormatoTexto md en 7 de elemento i de alumnos
```

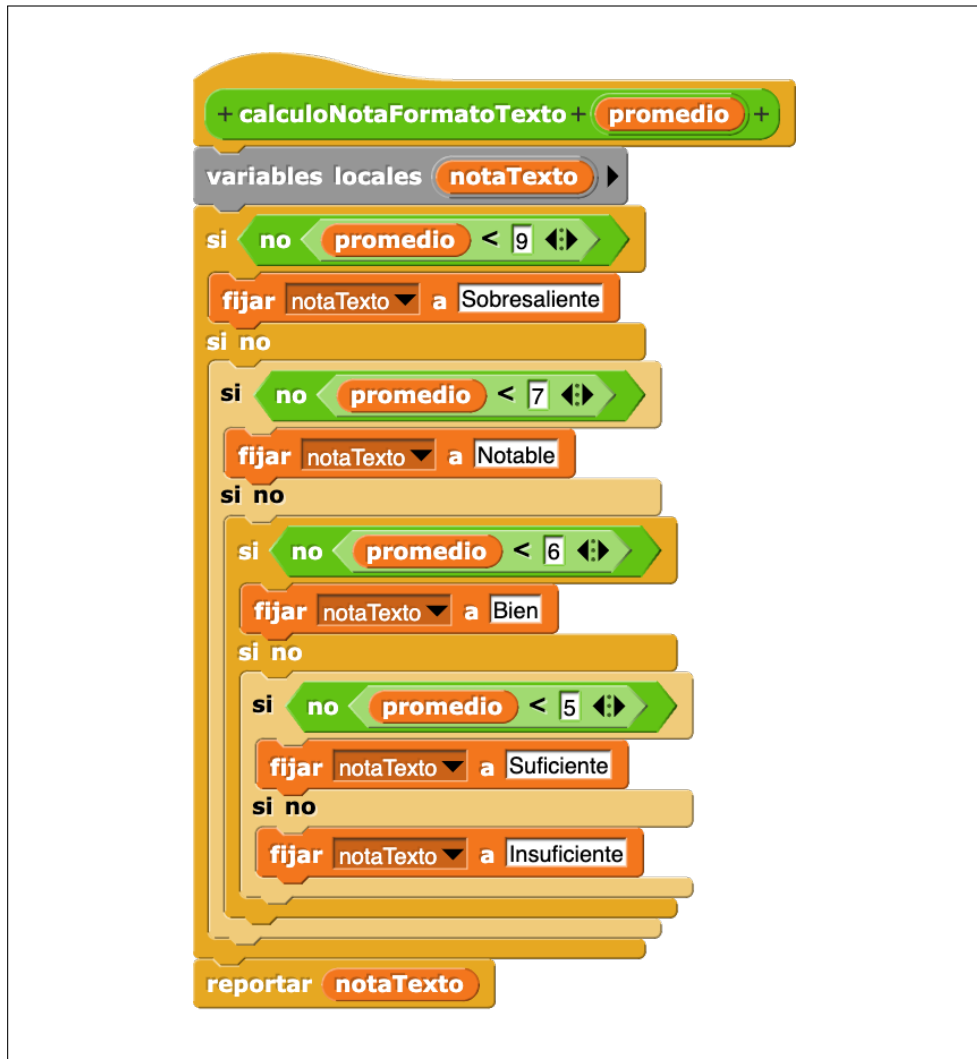
### 2.8.1 Custom blocks

Create the following custom block, responsible for calculating the arithmetic mean and returning the result to the main function.

### calculoPromedio Function

```
+ calculoPromedio + n1 + n2 + n3 +
variables locales promedio
fijar promedio a n1 + n2 + n3
reportar redondear promedio / 3 x 100 / 100
```

## calculoNotaFormatoTexto Function



## 2.9 Search for student

With this last block you will learn how to search for a student within the list by their name. If the student exists, the system will display all their information on the screen:

Name

Last Name

Average grade

Final grade in text format (Fail, Pass, Good, Very Good, or Excellent)

## Student Search (Key "b")

```
cuando se pulse la tecla b
  borrar
  ir a x: -150 y: -130
  variables locales a encontrado
  fijar encontrado a falso
  preguntar Introduce el nombre del alumno/a y esperar
  fijar a a respuesta
  repetir hasta que encontrado = verdadero
    para i = 1 hasta longitud de alumnos
      si elemento 1 de elemento i de alumnos = a
        fijar encontrado a verdadero
        escribir unir elemento 1 de elemento i de alumnos con tamaño 12
        escribir unir elemento 2 de elemento i de alumnos con tamaño 12
        ir a x: -150 y: posición y - 15
        esperar .5 s
        escribir
          unir elemento 6 de elemento i de alumnos
          unir elemento 7 de elemento i de alumnos
          con tamaño 12
        ir a x: -150 y: posición y - 15
```

This document is published under license  
© Creative Commons Attribution 4.0 International (CC BY 4.0)