ITESM CCM | TC1014

Programming fundamentals

Aug – Dec 2018



Integrative practice

Create a program that helps teachers to manage the grades of assignments and projects within their classes. Among other things, the program will allow the teacher to perform and know the following:

- Enter student data (up to 20 students).
- Enter the grades of the students for their assignments (4), partial exams (2), final project (1) and final exam (1).
- Obtain reports to show: final average of each student, final average of the group, average per activity (assignment, exam, project, etc.).
- Know the performance of the group: variance, standard deviation, number of failed and approved.

When you start the program, you should create a matrix similar to the following:

Alumno1	Tarea1	 Tarea4	ExPar1	ExPar2	ProyFinal	ExFinal	Final
Alumno2	Tarea1	 Tarea4	ExPar1	ExPar2	ProyFinal	ExFinal	Final
Alumno3	Tarea1	 Tarea4	ExPar1	ExPar2	ProyFinal	ExFinal	Final
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Alumno20	Tarea1	 Tarea4	ExPar1	ExPar2	ProyFinal	ExFinal	Final

The matrix should be pre-filled with random numbers between 50 - 100 :

Student1	78	87	98	67	87	89	90	76
Student2	89	97	65	47	67	87	90	76
Student3	78	87	98	67	87	89	90	76
Student4	89	97	65	47	67	87	90	76
Student5	78	87	98	67	87	89	90	76

In this diagram you can find the main menu options and their corresponding submenus. The image is in spanish but your texts should be in english:

		1. Ingresar nombre del alumno
		 Ingresar nota de tarea 1 Ingresar nota de tarea 2 Ingresar nota de tarea 3 Ingresar nota de tarea 4 Ingresar nota de examen parcial 1
1. Ingresar datos del alumno	Seleccionar alumno (1-20)	6. Ingresar nota de examen parcial 2
	Seleccionar alumno (1-20)	7. Ingresar nota de proyecto final
2. Ingresar calificación	Selectional alumno (1-20)	8. Ingresar nota de examen final
3. Reportes por alumno	Seleccionar alumno (1-20)	1. Promedio final
4. Reportes por actividad	Seleccionar actividad (1-9)	2. Nota de actividad Seleccionar actividad (1-8)
5. Desempeño del grupo		1. Promedio
6. Imprimir la matriz	1. Promedio del grupo	2. Varianza de la actividad
7. Salir	2. Varianza del grupo.	3. Desviación estándar de la actividad
	3. Desviación estándar del	grupo.
	4. Número de aprobados y	reprobados

Considerations:

- 1. If a student's data is entered, the information in that student's data should be overwritten. That is, if you enter student 1 with name "Juan" and then re-enter student 1 with name "Luis" you must overwrite the previous name.
- 2. The same goes for all the homework notes, exercises, exams, etc. Each time a note is added, you should overwrite the previous note.
- 3. To calculate the final grade of each student (last column) consider: Tasks 40%, Partial exams 15%, Final project 25% and final exam 20%;