

# AED 2223 - Group 12

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# Problem Description

Develop a system capable of helping in FEUP's timetable management system (visualizing and changing).

# Solution description

- Use of appropriate classes and correct data structure
- Writing and reading files, including the display
- Use of efficient algorithm for each problem

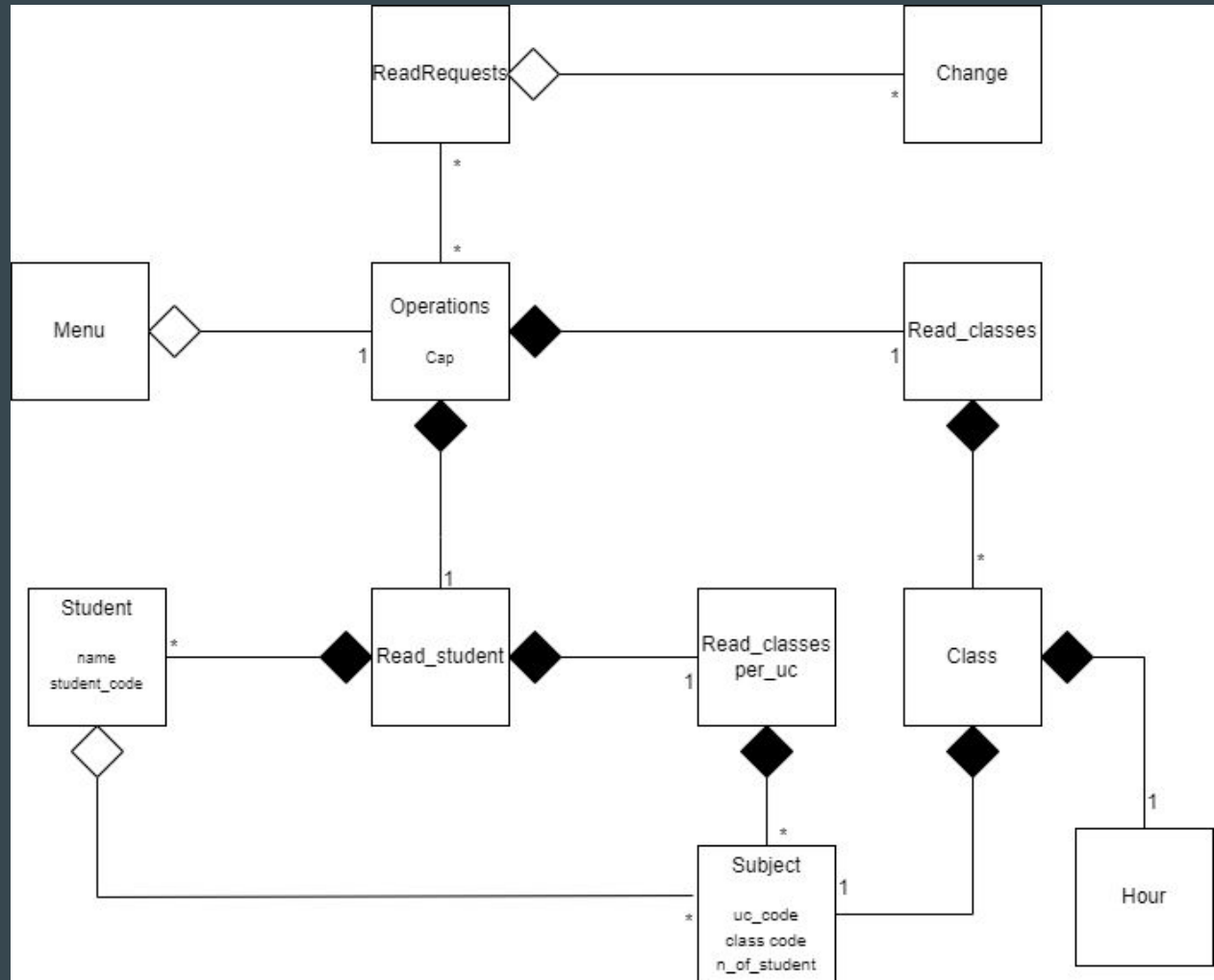
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# Relevant algorithms

1. Binary Search
2. Lower bound search
3. Insertion sort
4. Sort(STL)

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# Class diagram



# List of implemented functions

1. Timetable for Student
2. Timetable for UC
3. Number of students in class
4. Number of students in year (total and per UC)
5. Number of students in UC (total and per class)
6. List of students in class/year/UC
7. List students with more than 'N' UCs
8. Students with specific name
9. Process requests to change classes

\*Everything completed

\*Lists have sorts by name, student code, UC Code, class code, number of UCs and number of students

# Features

1. Menu
2. Log file (records results of requests)
3. Setting file (set settings of program)



# Main difficulties

- Analyze input data
- Data visualisation and user friendly interface



# Execution example - Menu

=====	
Students	Classes
=====	
See data from specific student [11]	See data from specific classes [21]
Get number of students in a year [12]	
List Students with specific name [13]	
Show Students in year [14]	
=====	
UC's	Requests
=====	
See data from specific UC [31]	Request to change class [41]
Show students with more than 'X' UCs [32]	Process requests (end of day) [42]
=====	
Other operations	
=====	
Exit [0]	
=====	

Please choose an option:11

# Execution Example - Print time table

Enter an student code: 202074702

Choose an option:

1 - Print time table

1

Monday	Tuesday	Wednesday	Thursday	Friday
8:00				
8:30 L.EIC025;3LEIC14 TP	L.EIC024;3LEIC08 T	L.EIC024;3LEIC08 TP	L.EIC025;3LEIC14 T	L.EIC021;3LEIC14 TP
9:00 .....	.....	.....	.....	.....
9:30 .....	.....	.....	.....	.....
10:00 .....	.....	.....	.....	.....
10:30 L.EIC023;3LEIC08 T	L.EIC022;3LEIC14 TP		L.EIC023;3LEIC08 PL	L.EIC022;3LEIC14 T
11:00 .....	.....		.....	.....
11:30 .....	.....	L.EIC021;3LEIC14 T	.....	.....
12:00 .....	.....	.....	.....	.....
12:30				
13:00				
13:30				
14:00				
14:30				
15:00				
15:30				
16:00 L.EIC021;3LEIC14 T				
16:30 .....				
17:00				
17:30				
18:00				
18:30				
19:00				

# Execution example - Print of Student list

Justo	202063567	has 6 subjects
Jose Baltazar	202063907	has 6 subjects
Jose Rafael	202063992	has 6 subjects
Manuel Filipe	202064247	has 6 subjects
Jose Filipe	202064332	has 6 subjects
Manuel Gabriel	202064502	has 6 subjects
Manuel Tadeu	202064587	has 6 subjects
Leonor	202020217	has 7 subjects
Francisca	202020897	has 7 subjects
Bianca	202022002	has 7 subjects
Marta	202023532	has 7 subjects
Valentina	202024212	has 7 subjects
Nicole	202024552	has 7 subjects
Bruna	202024807	has 7 subjects
Filipa	202025402	has 7 subjects
Eunice	202025487	has 7 subjects

# Execution example

## Print of classes in UC with number of students

```
Enter an UC code: L.EIC014
Choose an option:
1 - Get number of students in UC
2 - See students in UC
3
How would you like to sort the list?
1 - Sort by class code ascending
2 - Sort by class code descending
3 - Sort by number of students ascending
4 - Sort by number of students descending
3

L.EIC014,2LEIC08 20
L.EIC014,2LEIC11 20
L.EIC014,2LEIC01 20
L.EIC014,2LEIC06 21
L.EIC014,2LEIC09 22
L.EIC014,2LEIC12 22
L.EIC014,2LEIC14 22
L.EIC014,2LEIC15 22
L.EIC014,2LEIC04 22
L.EIC014,2LEIC02 22
L.EIC014,2LEIC10 23
L.EIC014,2LEIC13 23
L.EIC014,2LEIC16 23
L.EIC014,2LEIC05 23
L.EIC014,2LEIC03 23
L.EIC014,2LEIC07 24
Total students in the UC: 352
```

# Execution example - Print of number of students in year per UCs

```
Please enter the year (1, 2 or 3):1
How would you like to sort the list?
1 - Sort by class code ascending
2 - Sort by class code descending
3 - Sort by number of students ascending
4 - Sort by number of students descending
1

L.EIC001:32
L.EIC002:85
L.EIC003:74
L.EIC004:71
L.EIC005:50
Total students in year:140
```

# Effort of each member of the group

Ian Beltrão - 50%

Mansur Mustafin - 50%