

EE3980 Algorithms

Homework 8. Selecting Courses

Due: May 10, 2020

A student is selecting courses to maximize his learning. Your assignment is to write a program to perform such a task. Since we are discussing the greedy method these couple of weeks, please use only greedy method to get the best result you can.

The available courses have been list in the files `courses.dat` file. The first line is the number of courses available, followed by the courses. Each line contains a single course: the course number, number of credits, capacity (number of students), time of the course and, finally, the name of the course.

The goal of the student is to get the maximum number credits possible. Of course, no two courses selected can occupy the same time. The output of your program should follow the format below.

Total credits: 36

Number of courses selected: 12

1: EE202000 3 T3T4R3R4 Partial Differential Equations and Complex Variables
2: EE211000 3 T7T8R7 Modern Physics
3: EE214001 3 M3M4W2 Electromagnetism
4: EE231000 3 M1M2R1R2 Introduction to Programming
5: EE240500 2 W7W8W9 Embedded System Laboratory
6: EE313000 3 W5W6R8R9 Optics and Photonics
7: EE335000 3 W3W4F4 Introduction to Solid-State Electronic Devices
8: EE336000 3 M7M8M9 Opto-electronic Devices
9: EE364000 3 M5M6RnR5 Communication Systems (I)
10: EE413500 3 T5T6F3 Principle of Lasers
11: EECS340000 3 RaRbRc Satellite Electrical System Design
12: MATH202001 4 T1T2F1F2 Advanced Calculus II

Weekly schedule:

	1	2	3	4	n	5	6	7	8	9	a	b	c
M	V	V	V	V	.	V	V	V	V	V	.	.	.
T	V	V	V	V	.	V	V	V	V	.	.	.	.
W	.	V	V	V	.	V	V	V	V	V	.	.	.
R	V	V	V	V	V	V	.	V	V	V	V	V	V
F	V	V	V	V	.	.	.	.	.	.	.	.	.

In your report, please describe the greedy method you implemented. Why it should produce the best result? And, if it is the optimal solution?

Notes.

1. One executable and error-free **C** source file should be turned in. This source file should be named as **hw08.c**.
2. A **pdf** file is also needed. This report file should be named as **hw08a.pdf**.
3. Submit your **hw08.c** and **hw08a.pdf** on EE workstations using the following command:

```
$ ~ee3980/bin/submit hw08 hw08.c hw08a.pdf
```

where **hw08** indicates homework 8.

4. Your report should be clearly written such that I can understand it. The writing, including English grammar, is part of the grading criteria.
5. CPU time needs not be report for this homework, but you should still discuss the complexities of your program.

