



Università  
della  
Svizzera  
italiana

Faculty of  
Informatics

Institute of  
Computing  
CI

## Numerical Computing

2022

Student: FULL NAME

Discussed with: FULL NAME

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## Solution for Project 6

Due date: Wednesday, December 21, 2022, 11:59 PM

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### Numerical Computing 2022 — Submission Instructions

(Please, notice that following instructions are mandatory:  
submissions that don't comply with, won't be considered)

- Assignments must be submitted to iCorsi (i.e. in electronic format).
- Provide both executable package and sources (e.g. C/C++ files, Julia). If you are using libraries, please add them in the file. Sources must be organized in directories called:  
*Project\_number\_lastname\_firstname*  
and the file must be called:  
*project\_number\_lastname\_firstname.zip*  
*project\_number\_lastname\_firstname.pdf*
- The TAs will grade your project by reviewing your project write-up, and looking at the implementation you attempted, and benchmarking your code's performance.
- You are allowed to discuss all questions with anyone you like; however: (i) your submission must list anyone you discussed problems with and (ii) you must write up your submission independently.

The purpose of this project is to implement the Simplex Method to find the solution of linear programs, involving both the minimisation and the maximisation of the objective function.

### 1. Graphical Solution of Linear Programming Problems [20 points]

### 2. Implementation of the Simplex Method [30 points]

### 3. Applications to Real-Life Example: Cargo Aircraft [25 points]

### 4. Cycling and Degeneracy [10 points]