

## Lab4: project management

The goal of this lab is to apply the concepts of effort, calendar time, cost in project management.

### Exercise 1

You plan to do a long trip (2-3 months) to visit South America, using all kind of transport means.

1 Define the WBS

2 Define the deliverables and milestones (ex, your tourist visa has max 30 days duration, after which you need to ask for an extension)

3 Define a GANTT chart for your trip

## **Exercise 2**

A new software project has an estimated size of 210.000 lines of code. Past similar projects in the same company had a productivity of 30 locs / person day.

1 Estimate the effort for the new project

2 Estimate the duration of the project, assuming to have 4 people available to work on it.

3 On average the cost of a person day is 150 Euros. Estimate the cost of the project.

### Exercise 3 – development of an application to support direct democracy

News from the press - [https://www.huffingtonpost.it/entry/m5s-dice-addio-a-rousseau-da-settimana-prossima-il-via-alla-nuova-piattaforma\\_it\\_606f53fdc5b6948212672d18](https://www.huffingtonpost.it/entry/m5s-dice-addio-a-rousseau-da-settimana-prossima-il-via-alla-nuova-piattaforma_it_606f53fdc5b6948212672d18)

*Summary of the article, by the teacher.* A new application to support direct democracy within the Italian M5S movement will be developed. Development will be performed by 5 people. Development will take around 2 calendar months. Cost of development will be around 300K Euro. Cost of maintenance, after development, will be around 200K euro per year.

*Notes by the teacher:* The current application, to be replaced by the new one, offers functionalities for certified voting by members of the movement on defined questions, communication and networking between members (discussion blogs and chats), delivery of news and communications to all members.

The current application supports around 100K-200K members, and should be able to support a growing number of them in the future.

1. *Compute the effort (person hours) estimated for development, according to the article (assume a person works 140 hours per calendar month)*
  
  
  
  
  
  
  
  
  
  
2. *Compute the cost per person hour, during development*
  
  
  
  
  
  
  
  
  
  
3. *Discuss the estimates of time and cost for development*
  
  
  
  
  
  
  
  
  
  
4. *Using the cost per person hour at point 2, compute the person hours estimated for the maintenance phase, per year*

#### Exercise 4 – development of an application to manage vaccinations

News from the press – [https://milano.corriere.it/notizie/cronaca/21\\_marzo\\_26/piattaforme-cieche-bachi-fretta-cosi-si-inceppato-sistema-aria-37da3386-8e68-11eb-8542-ee1d410d331e.shtml](https://milano.corriere.it/notizie/cronaca/21_marzo_26/piattaforme-cieche-bachi-fretta-cosi-si-inceppato-sistema-aria-37da3386-8e68-11eb-8542-ee1d410d331e.shtml)

*Summary of the article, by the teacher.* A new application to manage vaccinations (schedule appointments for citizens, considering availability of vaccines, of medical personnel and of places to perform safely the vaccination, communicating with citizens, storing information related to the vaccinations) has to be developed. The application should serve the Lombardia region (around 9M people).

The start of operation for the application is decided at February 15 (subscription of citizens over 80 willing to be vaccinated). The start of vaccinations is at February 18.

The application is commissioned to ARIA (the development contractor) on February 7.

*Notes by the teacher:* The cost of the project (documents of Regione Lombardia) is estimated, on the period February – July 2021, to 3.4 MEuro for IT, 11.5 MEuro for the call center.

1. *Compute the calendar time estimated to deliver the first running version of the project*
  
  
  
  
  
  
  
  
  
  
2. *Compute the effort (person hours) estimated for the whole project, IT part (February to July – assume one person hour = 30 euros)*
  
  
  
  
  
  
  
  
  
  
3. *Discuss the estimates of time and cost*