Computer project
SSD & WS

R. Absil

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This document describes the features of the computer project you have to implement for the course. Basically, the idea is to build up a secured online agenda. The project can be implemented by groups of maximum two students, and has to be submitted on 15 January 2021 at 11:59pm.

Contents

1 Introduction

The goal of this project is to implement a small system allowing users to securely handle agendas, under a client / server architecture. A lot of freedom is given to you regarding the security protocols to use, as well as the programming language to choose.

You don't have to provide a graphical user interface for your implementation (you can, but will receive no additional marks for it). On the other end, you can chose to code a desktop application, or a web application (but not a mobile application). WEB or DESKTOP?

Note that although the vast majority of choices is left to your discretion, you are responsible for these choices.

2 Characteristics of actors

Server

The server cannot be considered as a trusted entity: while any client knows, at any time, its IP address as well as any information used to securely set up a connection with his server, some form of certification must be provided.

Server is not trusted entity? Don't save anything in plaintext. maybe another server is trying to get the password

The server has three main objectives:

- allowing users to create an event to their agenda,
- allowing users consult their agendas, as well as the agendas they are allowed to,
- persistently store the agendas.

It will be necessary to implement a system of rights

- to log in the server,
- for accessing features such as creating an event.

Such system will be described per user on Section 3. Note that it is expected that the server can sometimes be deliberately shut down. Consequently, there must be a way to restart it in the state if was before.

Clients

There is only one type of client : a regular user who can manages its own agenda, and the ones it has access to. Such a user logs in an appropriate way, left to your discretion.

3 System components

Event

An event has five characteristics:

- a title and a description,
- an owner (the user who created it),
- a starting and ending date.

All this information is considered sensitive.

You must also implement some way to describe who can view the event, or edit its characteristics.

ask about perimssions to view AND edit
as a unit or separately

Agenda

The agenda of a user is the set of events that both he created and can view.

User

The characteristics of a user are as follows:

- it has a unique identifier,
- it has first and last name.

You must also implement some way for a user to see its agenda, as well as edit the events he created or has the rights to edit.

4 Submission

This project is a *group project*, a single submission per group of 2 students is enough. The deadline is set on 15 January 2021 at 11:59pm.

In order *not* to have 0/20, you must

1. submit *on time* by email a link to a gitlab[1] repository where you will have added me (`rabsil`) with administrator rights[2];
2. submit a desktop or web application (*not* a mobile one);
3. provide a `MAKEFILE` in order to build your project[3];
4. provide a `README` file explaining how to use your project, and listing the members of your group;
5. provide what is needed so there are some events and users already existing in the system.

[1] That means, not github.

[2] I need administration rights in order to reverse your project to the last version submitted on time should you modify it after the deadline. Reversing your project will be penalised.

[3] This includes compiling your scripts as well as installing third party missing libraries

Note that is is expected that your project ensures confidentiality, non repudiation and integrity where it is needed. It is also expected that your project is resistant against any attack seen in the course, such as replay attacks, broken access control, buffer overflow, rainbow and dictionary attacks, etc.

auth method: gives us the programming language

permission: gives us the file form

Implement 2FA?