CS565 - Business Process Management Systems Spring Semester 2022

2nd Assignment

Delivery Date: Tuesday 3 May 2022

General description and required knowledge: In this assignment you will be familiar with the working environment of the tool Camunda Modeler (link), Camunda Platform (https://camunda.com/download) and Postman (https://www.postman.com/) for the purpose of modeling and implementing business processes.

Note: For the modeling you should use BPMN 2.0 Business Process Diagrams and for the implementation the JAVA API (link) used by Camunda. It is also recommended to understand the material of the tutorial, before the beginning of the assignment.

Scenario: Your role in this exercise is to model and implement the driver licensing process described below.

A candidate driver goes to a driving school and attends 20-hour theory classes. Once he has completed the theoretical courses, the secretary of the Driving School applies to the information system of the Ministry of Transport for admission to the theoretical examination. Within a few weeks the answer comes to the Driving School, so the secretary informs the candidate driver. The candidate then arrives at the examination center, where he answers 30 random questions within 30 minutes. If he answers at least 29 questions correctly (checked by the examiner), the competent department of the Ministry of Transport sends the certificate of successful completion of the theoretical exam to the secretary of the driving school, from where the candidate driver will receive it within 3 days. If it fails, the test is repeated until it is successfully passed.

In addition to the theoretical examination, the candidate driver must complete 25 hours of driving practice. He does the lessons together with the driving instructor and completes them in 4 weeks. When she completes the practical courses, the secretary of the Driving School makes an application to the Ministry of Transport and waits for an answer on the date of the candidate's examination. As soon as it receives the confirmation of the date, it informs the candidate driver.

On the pre-arranged date the candidate driver arrives at the examination point and together with the driving instructor and two examiners goes through the driving process lasting 30 minutes. Unless he makes a driving mistake during the exam, the examiners give the teacher the certificate of successful completion. Otherwise the prospective driver takes some extra hours of lessons within a week with the driving

instructor and the test is repeated. This process is repeated until the candidate driver succeeds in the examination.

Once he has successfully completed both the theoretical and the practical exercise, he presents to the secretary of the driving school a copy of his identity card, 2 photos, 2 medical certificates from an ophthalmologist and a physician and a fee of 120 euros from the tax office. All these documents are submitted by the secretary of the Driving School to the Ministry of Transport and in 2 weeks the diploma is sent to the Driving School, from where the new driver receives it.

Obviously, there is no single or correct diagram of this particular business process. The objective is to understand the difficulties of modeling. The description given to you does not take into account all the possible parameters, so you will need to make some assumptions of your own.

Demands

- **Part One (60/100)**
  Capture in Camunda Modeler the complete business model described above. You have to take advantage of BPMN Forms, Service Tasks, User Tasks, Send Tasks, (their implementation is required in the second part), as well as events, gateways, pools / lanes, etc

- **Part Two (40/100)**
  - Implement the tasks related to the interaction of the secretariat and the Ministry of Transport (Service and Send Tasks) as external service tasks, with the functionality described in the exercise scenario. For example, the secretariat applies to the Ministry of Transport for a theoretical examination.
  - Deploy your model on the Camunda Platform and find successful deployment through Cockpit. In order to deploy properly, the correct configuration must be done and all service and send tasks must be implemented.
  - POST request(s) to Camunda's REST API using the Postman tool to create process instance(s) with the appropriate variables. Show and describe the flow of the driving license process by providing the appropriate screenshots in the intermediate stages. In the case of User Task (there must be at least one e.g check the form of theoretical questions of the examinee by the examiner), you must show the procedure you follow in the Task List for completing and completing the form.

Deliverables

A folder will include the following:

- Any file involved in the modeling process, e.g. .bpmn, .form.
- The project of question 2 exported (recommend to use Eclipse)
  - File > Export > General > File System
- A detailed report in .pdf format, including explanations of the modeling process (part 1) and implementation (part 2). Everything you say should be supported by relevant **screenshots**.

Compress the folder and name it "cs565_mylogin_assignment2.zip". Send the .zip file to hy565@csd.uoc.gr until Tuesday, May 3, 2022.