Home Exercise #3 Design and Architecture

Intended learning outcome
After passing this exercise the students can explain and apply some of the most common ways of specifying different views of a system architecture.

Problem description
Your company is developing a web-based travel agency for demanding travelers who want complete arrangements for tailor-made tours to different countries or regions. The traveler using the system is guided through a dialogue where he/she can search for certain destinations, transportations, hotels, activities, or things to see. During the dialogue the system continually creates a travelling schedule based on the input, but the system can also give suggestions, for instance interesting things to see close to the hotel, or taking trips in different order to lower the price. One of the reasons for your success is that you have a very clever algorithm that can determine the users’ preferences and interests. In the back-end of the system you have a good collection of web-services from providers of services you combine into your customer offer. That network is also maintained by a clever selection algorithm.

Task
Your tasks this week are:

a) Now it is your task to make an overall architecture description of the system. You don’t need to use UML; box-and-line diagrams will do. Describe the resulting architecture in terms of advantages and disadvantages for the quality factors security and usability. Which view of the system does your architecture show? Write a short motivation

b) Draw a UML sequence diagram with at least 5 roles and 10 messages describing an entire booking of an arrangement. The messages can be on a high level, so you don’t need to take signaling protocols and exact parameter types into account. (Hint: you probably need more than the minimum model elements to make a complete description)

You may make more assumptions of features of the system than those given in the Problem description, but in that case you shall explain your assumptions in the solution.

Report
Motivations and descriptions of all diagrams. Architecture view diagram. Sequence diagram. The report consists of diagrams and explaining texts. The total volume of the texts is 1-2 A4 pages.

Pass criteria
Understandable motivations. Understandable diagrams. UML diagrams are syntactically and semantically correct.

The technical solutions depicted in your diagrams do not have to be optimal.