Foodify System
Based on the previous RE workshop solution

The company “Foodify” has already working web service that allows customers to order food in advance, book tables and pay up front. The company has found now that they need to offer their service through native mobile applications as well to increase customer satisfaction. Their current system already has the data about restaurants and the authentication logic for users. In current scope is the development of both iOS and Android mobile applications that connect to existing backend. Backend and web service development are out of scope. The applications will be available in Google Play Store and Apple App Store. The application should comply with GDPR and all of the communication has to be sent over HTTPS.

The application will be used both by the company’s customers, who should be able to select restaurant, add meals to order and pay for it up front. Other functionalities include booking a table, store user information, view order history, registration and authentication. Foodify administrator should be able to enter to the system the information about available services.

The mockup prototype of the Foodify system is available here:
<https://youtu.be/E1dNYHdA-bs>

Tasks

Before starting with your solutions, read all the tasks. All tasks are interconnected and basically you need to define one solution by preparing answers to different tasks.

**Task 1:** In the given scenario define the **Scope!** How large is your problem? You do not need to analyze all the scenario (if you do so, you will not have time to complete all the tasks). Answer to this task is a written paragraph, where you explicitly state what you analyze in other tasks.

(10 points)

**Task 2:** Create a business process diagram using the BPMN modelling language. In other words – design your base scenario (according to the defined scope), where, for example, interactions between three pools (e.g., Foodify Chief, Customer, and Foodify System) and their activities are defined.

(20 points)

**Task 3:** Business asset identification and security requirements definition – (i) identify and write business assets (and its attributes) and (ii) determine and write down security objectives.

(10 points)
**Task 4:** Security requirements elicitation. Use security risk-oriented patterns (SRPs) on the business process model defined in Task 3: (1) identify pattern occurrences, (2) extract security models, (3) derive security requirements.

(50 points)

**Task 5:** From your analysis (see tasks 1 to 4) select/identify one security risk and fill in Table 1.

(10 points)

### Table 1: Security Risk Management template

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In summary, the solution should include:
- For task 1: a paragraph describing problem scope;
- For task 2: business process diagram in BPMN capturing the Foodify scenario (within the scope defined in Task 1);
- For task 3: description of the business asset and security objectives;
- For task 4: results of SRP applications:
  - SRP1: Security model (i.e., RBAC model) and derived list of security requirements;
  - SRP2: Security model (i.e., communication model) and derived list of security requirements;
  - SRP3: Derived list of security requirements (describing the input filtering);
  - SRP4: Security model (i.e., class diagram) and derived list of security requirements (describing the requirements for the firewall architecture);
  - SRP5: Security model (i.e., RBAC model regarding the database) and derived list of security requirements (including auditing and information hiding requirements);
- For task 5: filled in security risk management template (Table 1) for one security risk.

**Submission:** your solution should be submitted using the course Website, Upload function. The submission will be opened until 14:20; but it is highly recommended to do submission at 14:00. Alternatively, you could email your solution to <rma@ut.ee> but your email should come no later than 14:05 (please use Subject [SSD examination]). Solution submitted / emailed after the identified deadline will not be accepted.

It is appreciated with *PDF file* is submitted; but other format files will also be accepted. In case of several files, please archive (e.g., zip) all files.

You can use all material (e.g., course Website, course book), **but the solutions must be prepared individually.**