Date: Monday, April 3, 2023

Yaşar University
Spring, 2022-2023
SE2224 – Software System Analysis
MIDTERM EXAM
Starting Time: 18:40, Duration: 90 Minutes
Instructor: Asst. Prof. Dr. Deniz Özsoyeller

1. Short answer questions:

A1. For each of the requirement below, write if it is a **functional (F) or nonfunctional requirement (NF)**. **(16 pts.)**

a) The system should be updated with pending offers on vehicles every 15 minutes.
b) The system will allow the salespeople to know whether an offer is pending on a specific vehicle.
c) The system will allow the user to view a preview of the pages before printing.
d) The system defect rate shall be less than 1 failure per 1000 hours of operation.
e) The user can change the margins, paper size and orientation on the page.
f) The system should connect to printers wirelessly.
g) Only the owner and sales manager can approve the customer offers.
h) 95% of the users will be able to complete representative tasks without requiring assistance.

A2. The questions below are for eliciting nonfunctional requirements. For each question, write the appropriate category from one of the following four categories: **Usability**, **Reliability** (including robustness, safety, and security), **Performance**, and **Supportability** (including maintainability and portability). **(6 pts.)**

a) How many hours should the system be available for use in a day?
b) How should the system handle exceptions?
c) What documentation should be provided to the user?
d) What are the foreseen extensions to the system?
e) How many concurrent users should the system support?
f) Who has authorized access to the system?

A3. Write the type of each of the following interview questions: **open-ended, closed-ended or probing. (4 pts.)**

a) You mentioned two different solutions. Please give an example how you think each differs.
b) On average, how many food orders does the system receive monthly?
c) How can order processing be improved in your opinion?
d) How many times a week is the project repository updated?

2. Consider that a restaurant takes the food orders of its customers manually. That is, the waiter/waitress writes the orders on his/her notebook and then gives it as a note to the kitchen. The restaurant management realizes that this process is very slow especially on busy days, also causes some of the orders to be lost or mixed. Morever, the restaurant is having difficulties in analyzing its service quality. Perform a **technology analysis** to identify new ways to help the restaurant improve their "taking the orders of the customers" process. **(15 pts.)**

3. Suppose that you will develop a web-based book shopping system that allows the users to purchase books and download ebooks (electronic books) with a certain payment. For this system, answer the following questions below.

a. What **requirement elicitation methods** would you use for this system? Explain why you would use them and their advantages. **(12 pts.)**

b. Write four **functional requirements** of this system. **(8 pts.)**

c. Write three **nonfunctional requirements** of this system. At least one of these requirements should be in the "Performance" category. **(9 pts.)**

d. Write four possible **actors** that interact with this system. **(4 pts.)**

e. Write **a use case scenario** between the user and the system. Write all the flow of events, including any feedback that the system provides the user. **(12 pts.)**

f. Create a **complete use case form** for a single **use case** that you determine for this system. Note that, a complete use case form includes the following sections: Use Case Name, Actor, Description, Trigger, Preconditions, Normal Course of Events, and Postconditions. **(14 pts.)**