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# COMP1216. Software Modelling and Design (2021-22)

## Lab 1: Requirements Analysis

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## Part 1. An Email System

The following is a simple requirements specification for an *e-mail system*.

1. Users can send emails to each other
2. A user should be able to read emails that have been sent to them
3. The average delivery time for emails should be less than 5 seconds
4. Emails are sent and received via mail servers
5. Mail servers are connected via SMTP messages
6. Users must provide a password to access their email
7. Inform the user if a message transmission fails
8. In case of transmission failure, sending should be re-tried after 4 hours
9. Messages can be composed in plain text or in formatted text
10. The format of an SMTP message is
    - 1 or more headers (recipient, return address, routing, etc)
    - Body of message in text or html

You can use the following MS Form to answer this question.

### Question 1. Requirements Classification

Categorise these into *Functional* (**F**), *Non-Functional* (**NF**), and *Design* (**D**) requirements.

## Part 2. A Train Ticket System

A system must be specified for the automated purchase of train tickets from a ticket distributor. It is possible for the traveller to buy single or return tickets to available destinations, as well as weekly and monthly season tickets. The traveller will interact with the machine to specify ticket type, select destination, select payment mode (cash or credit card). A ticket purchase transaction may fail for various reasons: the distributor is out of change, out of ticket paper, credit card fails to validate, etc.

### Question 2. Defining Scope

Identify the scope of the ticket system, i.e., *Need*, *Goals*, *Business Case*, *Stakeholders*, *High-level operational concepts*, etc.

### Question 3. Operational Scenarios

Specify two operational scenarios for this system for

1. a successful ticket purchase, and
2. a failed ticket purchase.

### Question 4. Writing Requirements

Based on the scenarios in Question 3, write down the list of requirements for the ticket system. Label and number the requirement accordingly, e.g., **ASM** for assumptions, **FUN** for functional requirements.