Acme Poll 2.0

Acme Poll, Inc. is requesting maintenance of their project. This document provides an informal description of their requirements; ask your lecturers for clarifications and details.

C-level requirements

Information requirements

1. Pollers have to pay bills for their polls, as long as they have become active and their end date has passed. For every bill, the system must store the amount due, the date when it's due, whether it's been paid or not, and a copy of the corresponding receipt. For a bill to be considered paid, it must have a receipt and it must be endorsed by an administrator.

Functional requirements

2. An actor who is authenticated as a poller must be able to:
    1. List his or her bills.
    2. Add a receipt to a bill that is unpaid. Adding the receipt requires double confirmation, since it cannot be changed later.
3. An actor who is authenticated as an administrator must be able to:
    1. Create a bill for a poll. The amount to be paid is determined by administrators building on a variety of factors that are not easy to formalise, but are correlated to the number of instances. Typically, the amount ranges from a minimum of €1.00 up to €100.00 in cases in which a poll has millions of instances.
    2. List the bills that have to be endorsed.
    3. List the bills that have been endorsed.
    4. Endorse a bill for which the corresponding poller has added a receipt.
    5. Display a dashboard with the following information:
        - The ratio of bills that have to be endorsed.
        - The ratio of bills that have been endorsed.
        - The ratio of bills that are overdue.
        - The average, the maximum, and the minimum amount to be paid.

Non-functional requirements

4. Receipts are stored as PDF documents in external storage services like consigna.us.es or dropbox.com. The system must store their URL only.

B-level requirements

Information requirements

5. The actors of the system can exchange messages. Every actor has the following system folders, whose names cannot be modified at all: inbox, outbox, trashbox, and spambox. When an actor receives a message, it gets to the inbox unless the system flags it as spam, in which case it gets to the spambox. When he or she sends a message to another user, a copy is saved to the outbox. When an actor removes a message from a folder other than trashbox, it is moved to folder trashbox; when an actor removes a message from the trashbox folder,

it is then removed from the system. The system flags a message as spam if it contains any of the keywords that an administrator has configured; by default, the keywords must include, but must not be limited to, "viagra", "cialis", "jes extender", and "sex". Actors can create their custom folders and manage them. For every message, the system must keep track of the sender, the recipient, the moment when it was sent, the subject, the body, and its priority. Priorities are HIGH, NEUTRAL or LOW; no other values are expected.

Functional requirements

6. An actor who is authenticated must be able to:
    1. Exchange messages with other actors of the system.
    2. Manage his or her message folders, which includes creating, listing, modifying, and deleting them.
    3. Manage his or her messages, which includes writing and sending them, deleting them, moving them from one folder to another one, and the like.
7. An actor who is authenticated as an administrator must be able to:
    1. Display a dashboard with the following information:
        - The average number of folders per actor.
        - The average number of messages in the system folders.
        - The average number of spam messages per actor.

Non-functional requirements

Intentionally blank.

A-level requirements

Information requirements

8. Instances must have tickers, which are strings of the form "XX-99999", where "XX" is a two-letter code and "99999" is a five-digit code.   Tickers are unique in the system.

Functional requirements

9. An actor who can answer a poll must be able to:
    1. Retrieve his or her instance of the poll later by entering the corresponding ticker. He or she must be allowed to modify it as long as the poll is active.
10. An actor who is authenticated as an administrator must be able to:
    1. Display a dashboard with the following information:
        - The average number of edits per instance.
        - The poll whose instances have been edited the most (in average).

Non-functional requirements

Intentionally blank.

A⁺-level requirements

Information requirements

Intentionally blank.

Functional requirements

Intentionally blank.

Non-functional requirements

11. The communications must be secured by using HTTPS where appropriate. A short report to explain how this A$^+$ has been implemented is required.
12. Graphic histograms must be used when displaying the results of a poll. It's strongly recommended that Chart.js be used, but other components are welcome. A short report to explain how this A$^+$ has been implemented is required.