Exam Management System - PROPOSAL

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Exam Management System

- Exam Management System
- מערכת ניהול מבחנים

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Customer

- Customer Name – Dr. Mayer Goldberg
- Customer Representative Person – Dr. Mayer Goldberg
  - Role – Lecturer, Head of Teaching Committee
  - Email – gmayer@little-lisper.org
  - Phone Number - 055-660-3392

Project's Motivation and Purpose

- General Problem:
  - With the increase in the size of the student body, it has become difficult to manage grading within the given time constraints. This has led many courses to adopt a multiple-choice format, which is faster to grade, and easier to analyze.
  - The creation of challenging multiple-choice tests in the sciences is a non-trivial task.
  - The creation of one-time-use questions is costly and unsustainable.
- Specific Problem:
  - Maintenance of a large and growing pool of questions is proving to be difficult.
  - Current implemented system is local, inaccessible and hard to learn.
  - Division of labor between TAs and test examiners is done by hand and is hard to track.
  - The possibility of tracking quality of questions & answers is crucially needed.
- What is the solution?
  - A web-based System for managing work, subjects, questions.
  - Intended to replace current offline system.

What already exists?

- The client, Mayer Goldberg, has developed a theory of meta-questions and their translation into multiple-choice questions.
- A scheme-based system was created to synthesize & generate multiple-choice and implement said theory.
- The existing system has now been in use for 6-7 years in a large number of courses.

- Current system's low accessibility is too hard for people without deep knowledge and understanding to use comfortably.

Customer's Vision

- Workflow Management System:
  - Support various roles (for TAs, graders, instructors, etc).
  - Manual+Algorithmical generation of tasks based on priority and needs.
  - Manual+Algorithmical spread of tasks throughout configured workforce.
  - Tracking over work velocity and output (= blame feature).
- UI:
  - Web-based system.
  - Dashboard based on Role.
- Content creation:
  - Manage content by subjects/keywords/classes.
  - Creation and management of stems, meta-questions, questions, appendices.
  - Creation and management of possible solutions/distractors per question.
- Output creation:
  - Flexible LaTeX-based creation of exams/keys/solutions.
- System:
  - Have both WMS and content handled in DB.
  - Version control of questions, handled in DB.
  - Easy install, migration, backup and cloning of the system.

Project Description

- Frontend+Backend - developed in JavaScript as it is widely user, stable, with frameworks that allow easy implementation of features.
- Simple, intuitive and smooth interface - better UX is key for adoption by new users.
- PostgreSQL based DB – stable and strong relational DB.
- Features – Detailed in org file.

User Interface

- Describe the UI
- User Study

Project’s Risk Assessment

Challenge	How to overcome? (Bonus)

Project’s Environments and Languages

- Describe in which environments and programming languages the project will be developed?
- Should you learn? How will you learn?
- ..
- Elaborate as much as possible – but in short items

Evaluation and Testing Plan

- Describe which types of tests will be performed

Project’s Steps and Timeline

- Use draw.io to describe a block diagram of the project steps, and in addition a chart of the timeline