Online Assessments through Moodle Quiz

Problem statement and Solution proposal
Online Assessments in Education

Potential Exams

Assessment tests

- Entrance / Admission
- Internal / Semester
- Placements (Recruitment)
Online Assessments Platforms

- 800+ universities
- ~40,000 colleges
- ~10,000,000 schools

- Each seem to handle about 20 clients in education
Open source and Scalable Platforms?

Potential Exams

- Controller of Exams may wish to have “full control” of the platform
What Moodle Can?

Available capabilities

- User enrolment
- Question authoring
- Variety of Types
- Question Bank
- Randomisation
- Response Analysis
What Moodle Needs?

A Wishlist of Standard Practices

- Room management
- Time loss accounting
- Rich psychometrics
- Q & A Security
User Stories

As a Test Administrator, I would like to

- Restrict a candidate to a specific location
- Automatically grant extra time for lost-time due to hardware/network failures
- Manage configurations of multiple similar examinations
- Isolate authoring and delivery of questions (across servers/LANs)
Make moodle easily manageable by Controller of Examinations
Contributions from FOSSEE Project
IIT Bombay
Scenario 01

Setting up exam in a classroom
User-IP Mapping

- manage a given seating arrangement
- map users to a given terminal (IP address)
- pre-assign locations and announce to users
- commonly done for pen-paper exams
Scenario 02
Factoring Hardware and Network Failures
02 Auto increment quiz time limit

- Loss of time due to system failures
- User overrides need not be created manually

1 | User starts quiz
2 | Time lost due to network problem
3 | Quiz time extended automatically

No need to create user-overrides
Heartbeat Plugin
Implementation

Socket programming

- Moodle Quiz Access Rule Plugin
  - starts Node JS server
  - provides client.js
  - live monitoring of dead/alive
  - create user overrides
- User’s Browser client.js
  - Connects websockets
  - Maintains ping/pong
  - New socket for every quiz page
- Node JS server
  - Creates a “RoomID” for every user-quiz-attempt
  - Calculates lost time between disconnect and connect
IIT Bombay
Tests

Production Data

- PhD Recruitment 2018
- Placements 2018
- Job recruitments
Caveats?

- Socket testing with JMeter not realistic
- Code Refactoring
FOSSEE Moodle Team

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Provide Moodle Services to Exam Bodies

- Server Setup & Maintenance
- Training
- Contribute to Building a Robust Exam Code & Plugins
Thank You