

**Digitising Our Examination Process with Moodle**

**Part A – Executive Plan (Non-Technical, 2 Pages)**

**1. Vision**

Create a single **online testing centre** where any partner-organisation can:

* Upload its own study documents
* Register employees in seconds
* Assign the right subjects and quizzes automatically
* Supervise exams with simple photo-based proctoring  
  All of this will run on **free, open-source Moodle**, so there are no licence fees.

**2. How It Works (Plain-English Overview)**

🏢 Our Moodle Site  
┌────────────┬───────────────────────────────────────────────┐  
│Organisation│What they see inside their private “floor” │  
├────────────┼───────────────────────────────────────────────┤  
│Courses │Each subject (e.g., IT-Basics, HR-Policies) │  
│Units │Chapters inside a course │  
│Quizzes │Short tests at the end of each unit │  
│Documents │One drop-box to upload handbooks & guidelines │  
└────────────┴───────────────────────────────────────────────┘

1. **Company admin pastes a CSV list** of employees and picks their job specialisation (IT, HR, Finance).
2. Moodle automatically **drops each employee into the right subject** using “cohorts” (bulk groups)[[1]](#fn1).
3. At exam time learners open the quiz; Moodle quietly **snaps webcam photos every 30-60 seconds** with the free *Moodle Proctoring* plugin[[2]](#fn2).
4. Optionally, a **lock-down browser (Safe Exam Browser)** stops tab-switching for high-stakes tests[[3]](#fn3).
5. After the quiz, managers see **instant scores and flagged photos** in a simple report.

**3. Why This Is Robust & Future-Proof**

* Built on Moodle 4 LTS – proven at thousands of universities worldwide.
* All extensions chosen are GNU GPL and free to use.
* No personal videos stored; only lightweight images (tiny PNG files), saving server space[[2]](#fn2).
* Scales from one to many organisations by simply adding new “floors” (categories) – no re-coding.

**4. Key Benefits for Stakeholders**

|  |  |
| --- | --- |
| Stakeholder | Benefit |
| HR / L&D | One portal for every exam; automatic marks; audit trail |
| IT | No paid licences; Linux/PHP/MySQL stack; easy backups |
| Employees | Clear dashboard of their own subjects; consistent exam experience |
| Compliance | Identity verified by photos; lock-down browser option; full logs |

**5. Step-by-Step Roll-Out (High Level)**

1. **Week 1–2 – Foundation**  
    - Spin up Moodle in the cloud (or on-prem)  
    - Create sample company floor; add two test courses
2. **Week 3 – Content & Groups**  
    - Build unit quizzes; set up cohorts for IT, HR, etc.
3. **Week 4 – Document Drop-Box**  
    - Add “Documents” course; train company examiners to upload files.
4. **Week 5 – Proctoring & Security**  
    - Enable Moodle Proctoring and Safe Exam Browser.
5. **Week 6 – User Training & Go-Live**  
    - Run pilot exam; gather feedback; open to first real organisation.

**6. Success Measures**

* 100% of new employees enrolled via CSV within 10 minutes
* 95% photo matches in proctoring report
* <3 seconds average page load with 200 concurrent users
* Zero paid plugin costs in first year

**Part B – Technical Implementation Blueprint (2 Pages)**

**1. Platform Stack**

|  |  |
| --- | --- |
| Layer | Tool / Version |
| OS | Ubuntu 22.04 LTS |
| Web | Nginx + PHP-FPM 8.2 |
| DB | MariaDB 10.11 |
| LMS | Moodle 4.4 LTS |
| SSL | Let’s Encrypt (free) |

**2. Moodle Configuration Steps**

1. **Categories = Organisations**  
    - Site Admin ▶ Courses ▶ Manage Categories → add “Company-A”, “Company-B”…
2. **Courses = Subjects** (inside each company category)  
    - Use the **Course Copy** tool for identical subjects.
3. **Sections = Units** with embedded **Quiz** activities.
4. **Custom Profile Fields**  
     - organisation (text) - specialisation (menu) - employeeID (text)
5. **Cohorts & Auto-Enrol**  
    - Create cohort “CompanyA-IT” in the Company-A category.  
    - Enable **Cohort Sync** in each IT course so all cohort members auto-enrol[[1]](#fn1).
6. **Document Upload Course**  
    - Hidden course “CompanyA-Documents” → Assignment activity “Upload Materials” (examiner role only).
7. **Roles**  
    - Clone “Manager” ➜ “Org Admin” (can upload docs, upload users, but only inside own category).

**3. Proctoring & Security (Free Tools)**

|  |  |  |
| --- | --- | --- |
| Need | Free Solution | Key Settings |
| Identity check + screenshots | *quizaccess\_proctoring* plugin[[2]](#fn2) | Capture every 30 s; match to profile image; 4-warning threshold |
| Lock-down environment | Safe Exam Browser (built-in rule)[[3]](#fn3) | “Require SEB” in Quiz ➜ paste Browser Exam Key |
| Data isolation | Category context roles | Org Admin role cannot cross categories |
| Bulk enrol | CSV Upload (core) | Columns: username, password, organisation, specialisation, cohort1 |

**4. Data Flow Diagram (ASCII)**

CSV Upload ──▶ Cohort “CompanyA-IT” ──▶ Auto-Enroll ──▶ IT Course ──▶ Quiz  
 ▲ │  
Profile Photo ────────┘ │  
 (proctor plugin reads & compares) ◀──────────┘

**5. Backup, Maintenance & Scaling**

* Nightly Moodle database dump + weekly Moodledata rsync to S3/Backblaze.
* Enable Redis session cache and OPcache for 500+ users.
* Quarterly Moodle core upgrade; run **Site Admin ▶ Security Overview** after each patch.
* Add secondary web node behind HA-Proxy if concurrent users exceed 1 000.

**6. Future-Proof Enhancements**

* REST API for HR systems to push employee lists.
* Multi-language course copies via Moodle’s **Language Packs**.
* Optional live proctoring using Jitsi integration (also free).

**References**

Cohort synchronisation for bulk enrolment[[1]](#fn1) - Safe Exam Browser integration in Moodle quizzes[[3]](#fn3) - Free Moodle Proctoring plugin for webcam photo capture[[2]](#fn2)

This combined 4-page pack delivers both the **business-friendly roadmap** and the **hands-on technical recipe** needed to digitise our examinations using only free, sustainable tools.

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1. <https://docs.moodle.org/en/Cohort_sync>

1. <https://moodle.org/plugins/quizaccess_proctoring>

1. <https://docs.moodle.org/37/en/Safe_exam_browser>