05 Inji Based Digital Hall Ticket System for Students

Develop a secure, verifiable, and efficient ID solution for examinations around the world.

Complexity Level: Low

Overview: Losing physical hall tickets can force students to navigate time-consuming re-issuance processes and possibly pay extra fees. Solve that problem by creating a digital hall ticket system, offering a secure, instant, and hassle-free solution for students.

Participants are challenged to leverage MOSIP's Inji Stack components to modernise the traditional hall ticket process, using Verifiable Credentials (VCs) and QR codes accessible on smartphones. The solution will be built for two key phases: hall ticket generation by students, and subsequent verification by the invigilators at examination halls.

Recommended Tech Stack: Since this is an enhancement to the existing module, same tech stack as of the modules to be maintained.

1. Inji-web
2. Inji-certify
3. Inji-verify

Exact task:

Mandatory tasks:

- Hall Ticket Generation: Generate a Verifiable Credential (VC) representing their hall ticket, embedded with a QR code. This ticket can be downloaded via a Reference University Portal where Inji Web is integrated.
    - Integration Points from MOSIP- Inji Web: For the hall ticket VC generation and download.
- Hall Ticket Verification: Invigilators at the examination hall will use the Inji Verify portal to scan and validate the QR code on the student's hall ticket, ensuring authenticity and identity verification.

- Customise the UI/UX of the Inji Verify portal to reflect a fictitious "Hall Ticket Verification" theme. Use the QR code scanning feature for invigilators to validate hall tickets.
    - Integration Points from MOSIP- Inji Verify: For scanning and validating the QR code on the hall ticket, and logging the student entry details.
- Develop a Reference College Portal: Create a simple web portal where students can log in using their college registration number and password. This portal will integrate with Inji Web for hall ticket generation in the form of a PDF. (For students)
- Schema Definition for Hall Ticket VC: Define a basic schema for the hall ticket, including fields like Name, Batch, Branch, Roll Number, and Photo.
- Write a plugin for issuance
- Write a plugin for authentication

- eSignet Integration: Implement authentication using eSignet, ensuring that the hall ticket is only accessible after validating the student's roll number, name, and batch.KBI based authentication
- VC Generation with QR Code: Enable students to download their hall ticket as a VC with an embedded QR code, representing all relevant data.
- Reference University Portal:
    - A simple web portal using React/Node.js for students to log in and download their hall tickets.
    - Integration with Inji Web for VC download.

Good-to-have Tasks:

- Inji Web Integration:
    - To generate CBOR Identity data please refer Claim 169 implementation 169 - QR Code Specifications | MOSIP Docs 1.2.0
        - A standard CBOR-based QR Code that involves embedding a low-resolution image of the person with a minimal demographic dataset within the QR code. This QR code would be signed by the ID authorities (Issuer) and then printed on a physical card. Subsequently, the signed data within the QR code can be utilised for facial authentication. This approach also helps enhance interoperability.

Bonus Tasks:

- Audit Log and Reporting Mechanism:
    - Implement an audit log mechanism within the Inji Verify portal to track student entries during the exam to maintain a record of present and absent students, which can be used for end-of-semester result processing.

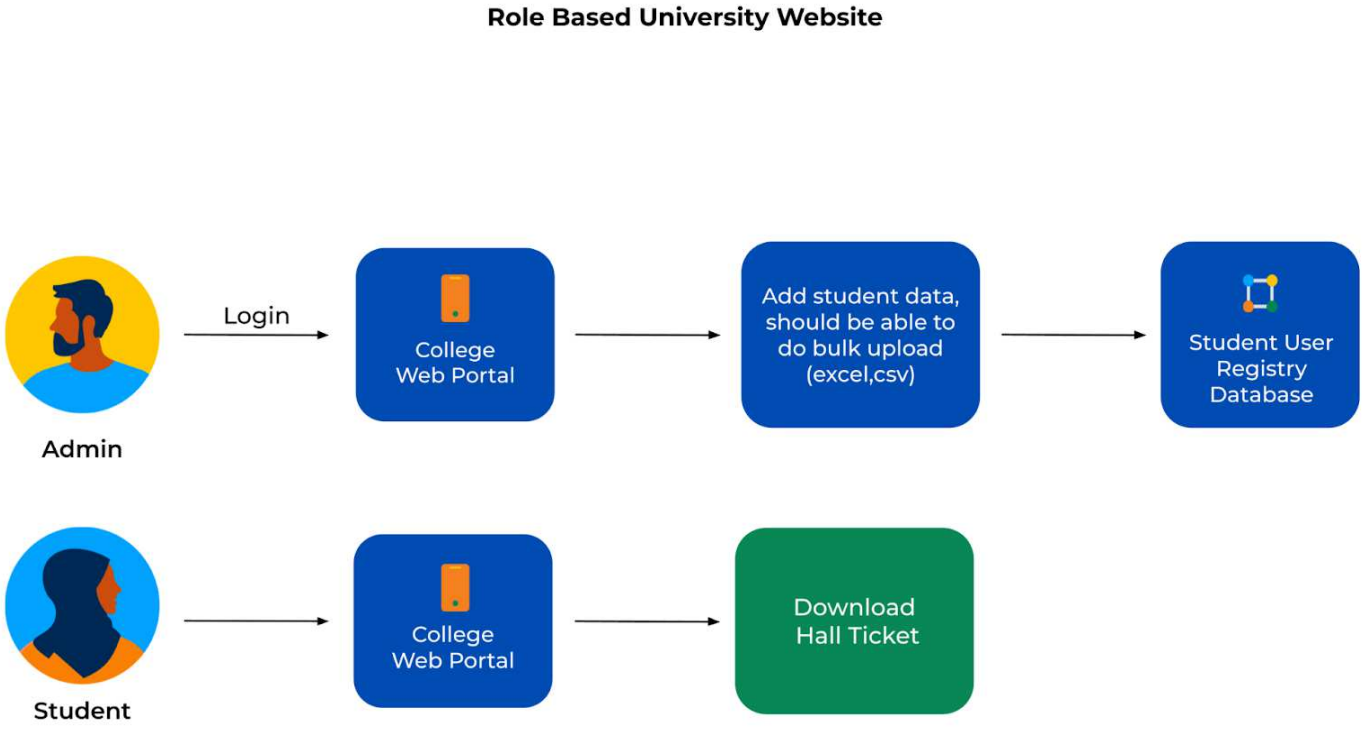
Deliverables:

- Source code of the solution on GitHub/GitLab.
- A demonstration video showcasing the solution in action.
- PPT with the approach, results, and potential impact.
- Documentation:
    - Detailed workflow documentation on the design and implementation approach of the tool such as Architectural Design, Data Flow Structure of the tool, Integration and installation guidance (if any)
    - API documentation (if any)
- Test case/ scenarios and test data (if applicable)

Resources:

- Inji documentation link: Inji | Inji
- Plugin: VC Issuance Plugin | eSignet
- Mimoto : Release v0.13.0 · mosip/mimoto

- Pixel Pass Library: npm: @mosip/pixelpass
- MOSIP Sandbox environment: MOSIP collab
- UIN request form: Link
- Collab user Guide link: Collab Environment Setup Guides | MOSIP Docs 1.2.0



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