Object Oriented Programming CSC8101
Class Presentation Refugee Biodata Verification API System

National Social Security Fund Verification Portal – Accessing data from Office of the Prime Minister –Department of Refugees Database.

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The Problem Context

❑ The National Social Security Fund (NSSF) needs a secure, automated method to verify refugee identities.

❑ Current verification via email is: Slow, Manual and error-prone, Not suitable for real-time systems

❑ The solution: Create an API that connects NSSF systems directly to the Office of the Prime Minister's (OPM) refugee databases:

Why is this Project Important?

❑ Enables NSSF to open savings accounts for refugees legally working in Uganda.

❑ Supports employers who remit monthly contributions.

❑ Allows identity verification before money is deposited, especially for returning refugees.

❑ Complies with: Uganda Data Protection and Privacy Act (2019), Security and confidentiality rules in the Terms of Reference

❑ Protects sensitive refugee information.

Project Scope

- ❑ Develop a FlaskAPI for verifying refugee biodata.
- ❑ Create synthetic (fake) data resembling OPM's databases.
- ❑ Implement secure API key authentication.
- ❑ Build verification logic returning: "Match" "No Match" Basic biodata fields

Technical Approach

- ❑ Programming Language: Python
- ❑ Framework: FastAPI
- ❑ Database: SQLite + SQLAlchemy
- ❑ Validation: Pydantic
- ❑ Server: Uvicorn
- ❑ Configuration: python-dotenv
- ❑ This combination ensures: Fast API performance, Easy data modeling, Strong validation, Lightweight deployment

Database Design and Landing Page

- individual_number
- process_status
- family_group_number
- full_name
- family_size
- age
- gender
- country_of_origin
- legal_status
- location_address
- date_of_birth
- registration_date
- created_at

How the APP handles Closed cases illustration

If the case has a process status of closed, irrespective whether they are refugees or asylum seekers, it rejects the case and returns a message saying individual is nolonger a refugee in Uganda. Process status is closed meaning they nolonger enjoy protection of the Ugandan government hence they do not qualify for any services in Uganda including NSSF. Snapshot below shows that pop-up.
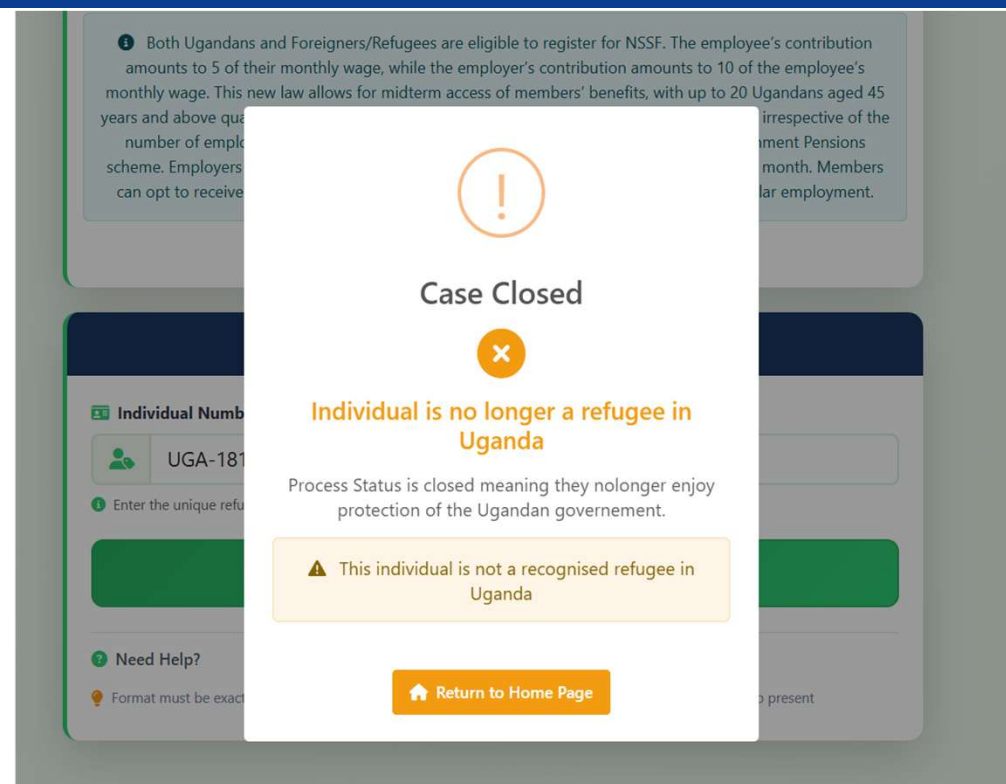
How it handles Asylum Seekers
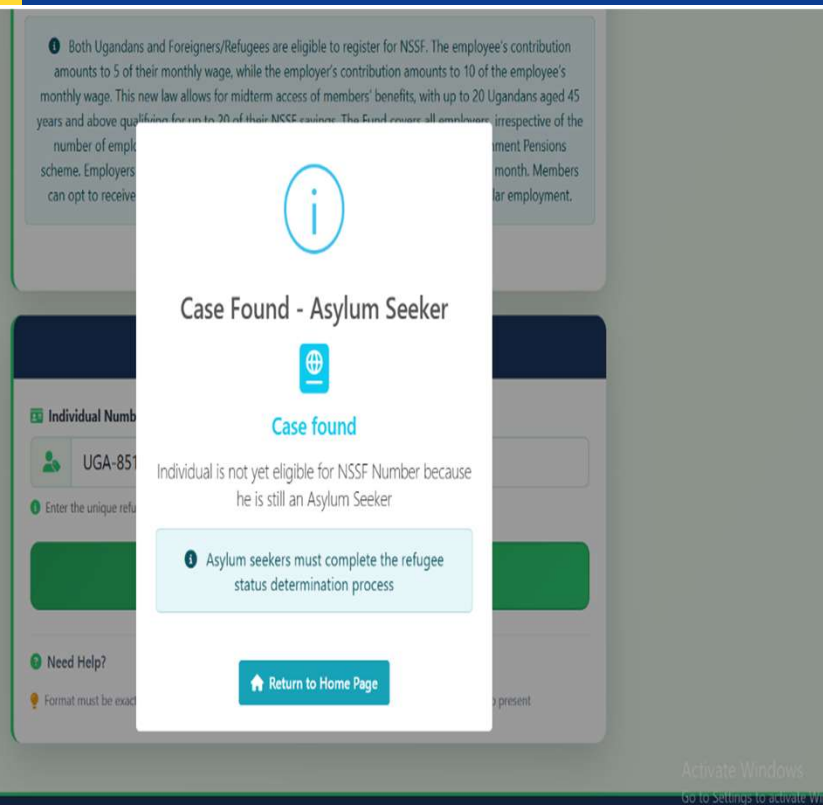
If the case is Active (process_status) and legal_status is an Asylum seeker it displays "case found -Asylum seeker and since Asylum seekers are not eligible for NSSF Numbers, it says "individual is not eligible for NSSF Number because he is an asylum seeker, asylum seekers must complete the refugee status determination process. It rejects the case nevertheless.

If case is Active Refugee

Minors handling

Incase one needs to view the number of cases issued with Nssf numbers, they can click the view report link at the top right corner of the application to view the report and the report will be displayed as seen below.

Q&A

- ❑ Thank you!