Project Scope:

# EdVisingU - Bursaries for Students with Disabilities Program-Automate: AI-Powered Accessibility Funding

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**Project Description:** The Ontario Student Assistance Program's (OSAP) Bursary for Students with Disabilities (BSWD) and the federal Canada Student Grant for Services and Equipment (CSG-DSE) provide critical funding for students with disabilities. However, the administration of this funding, as detailed in the comprehensive BSWD/CSG-DSE Policy Manual, is a highly complex and manual process. It involves multiple stakeholders navigating a dense set of eligibility rules, which can lead to significant delays and administrative burden, ultimately hindering timely access to essential support for students.

This project challenges students to design and build BSWD-Automate, a robust, secure, and intelligent platform to digitize and automate the BSWD/CSG-DSE lifecycle. A critical requirement is that all software and data must be housed exclusively within Canada to comply with data sovereignty regulations. The platform's core is an

AI-driven decision engine that adjudicates applications based on the intricate policies outlined in the manual.

A key feature of the system will be its ability to perform real-time, automatic confirmation of enrollment. This will be achieved through secure API-based integration with both institutional Student Information Systems (SIS) and a central Ministry system. This direct link eliminates a crucial manual verification step, allowing for instantaneous confirmation before funds are released.

The platform will include:

An intelligent application portal for students to apply for funding and upload required documentation.

An AI/ML engine using OCR and NLP to parse submitted documents, verify disability status, and extract key data for assessment.

A rules-based assessment module that programmatically enforces all eligibility criteria, including financial need calculations , program maxima , and specific funding caps and frequency-of-use limitations.

A built-in appeal and human review workflow for cases flagged by the AI or for students who wish to appeal a decision, ensuring fairness, equity and transparency.

An integrated e-commerce fulfillment system that directly connects students to approved equipment vendors with pre-populated shopping carts.

A Service Provider Marketplace, a secure portal where professionals (e.g., tutors, therapists) can be vetted and approved, allowing students to connect with them directly.

The primary challenges lie in accurately translating the nuanced policy manual into a reliable automated system, navigating Canadian data privacy laws, and engineering a secure and standardized integration with diverse and potentially legacy university SIS platforms.

**Student Learning Goals:** Working on BSWD-Automate will provide an immersive, real-world capstone experience that bridges the gap between complex policy requirements and advanced technical implementation.

Learning Objectives:

AI/Machine Learning: Students will design and implement a practical AI decision engine using OCR/NLP for document analysis and a rules-based system for complex decision-making.

Full-Stack Development: Students will build a complete web application from the ground up, developing skills in modern front-end, back-end, and database technologies.

Data Sovereignty & Security: Students will learn to architect a solution that adheres to strict Canadian data residency and privacy laws (e.g., AODA, PIPEDA), implementing robust security measures for sensitive data.

Enterprise System Integration: Students will design and simulate integrations with external enterprise systems (SIS/Ministry), learning to work with APIs, data exchange protocols, and authentication standards like OAuth 2.0. This is a highly valuable and practical engineering skill.

Cloud Architecture: Students will architect a scalable solution on a major cloud platform, specifically utilizing its Canadian data center regions.

Project Management & Agile Methodologies: Students will manage the project over a two-semester timeline, practicing agile development, sprint planning, and regular stakeholder reporting.

Sponsor Involvement:

The project sponsor will be highly engaged.

Frequency of Meetings: Weekly or bi-weekly check-in meetings.

Modality/Location:  virtual meetings.

Level of Involvement: The sponsor will act as the "product owner," providing continuous feedback, clarifying policy interpretations, helping prioritize features, and participating in sprint reviews and demos.

**Deliverables:** By the end of the two-semester sequence, the student team must deliver a fully functional and documented platform prototype that meets all requirements, including data residency and simulated real-time integration.

Semester 1:

Project Plan & System Architecture: A comprehensive document detailing the project timeline, milestones, technology stack, and an architecture diagram that ensures Canadian data residency.

System Integration Plan: A dedicated plan outlining the proposed API specifications and workflow for integrating with external SIS and Ministry systems to achieve real-time enrollment confirmation.

Requirements & Design Specification: A document translating the BSWD/CSG-DSE manual into functional/non-functional requirements and detailing the UI/UX via wireframes.

Core Application Prototype: A working prototype of the student application portal, user authentication, and document upload functionality, deployed in a Canadian cloud environment.

Semester 2:

Fully Functional AI Decision Engine: The complete rules engine capable of assessing an application and correctly applying the federal/provincial funding allocation formula.

Integrated Marketplace & E-commerce: A functional Service Provider Marketplace and a demonstration of the direct-to-cart functionality with a mock vendor API.

Mock SIS/Ministry API & Real-Time Confirmation: A simulated external SIS API that the main platform can query. The final prototype must demonstrate a successful, real-time enrollment check against this mock API.

Appeal and Admin Dashboard: A secure dashboard for administrators to review flagged cases, manage appeals, and oversee the system.

Final Source Code & Deployment Scripts: The complete, well-commented source code in a version control repository with scripts and documentation for deploying the application to a Canadian cloud region.

Technical Manual & Final Presentation: A technical manual and a final presentation with a live demonstration of the complete OSAP-Automate platform.

**Desired Backround:** This is a demanding software-based project requiring a team with a diverse and strong set of technical skills.

Required Knowledge:

Programming Languages: High proficiency in Python (for AI/ML) and a modern web

development stack (e.g., MERN, Django, or similar).

Operating Systems: Comfortable developing in a Linux-based environment.

Technologies:

Experience with cloud platforms (AWS, Azure, or GCP) is essential, specifically with their Canadian data regions.

Knowledge of both SQL and NoSQL database systems.

Familiarity with enterprise integration patterns and protocols (REST APIs, SOAP) is a significant advantage.

Knowledge of Canadian data privacy regulations (PIPEDA) is a plus.

Experience with Git for version control is mandatory.

Hardware: The project is strictly software-based. No knowledge of embedded systems or hardware is necessary. The focus is on cloud architecture, AI, and secure system integration.

**Required Agreements:**

- Non-Disclosure Agreement
- Intellectual Property Agreement

**Additional Materials:** www.edvisingu.ca; https://osap.gov.on.ca/prdosapconsum/groups/forms/documents/forms/pocont1_085479.pdf ; https://www.ontario.ca/page/osap-for-under-represented-learners#section-3