

Concordia University
SOEN 6841
Group - 14

Learning Path Generator

[Github: Learning_Compass](#)

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Introduction

In today's fast-paced educational landscape, personalized learning is key to unlocking individual potential. Yet, the fragmentation of educational resources across multiple platforms poses a significant hurdle. Our mission? To bridge this gap with an innovative learning path generator. By seamlessly integrating diverse resources, we aim to empower learners with tailored paths for success. Join us as we embark on a journey to reshape education, one personalized learning experience at a time.





Problem Statement



Challenge

In the realm of personalized education, a pressing issue persists: the lack of seamless integration and synchronization among diverse educational platforms and resources. Existing personalized learning solutions often operate within isolated ecosystems, constraining access to a comprehensive array of educational materials.



Opportunity

Developing an innovative learning path generator to seamlessly aggregate and synchronize diverse educational resources, empowering users with personalized learning journeys for maximum success.





Scope

01



Platform Integration

Implementation of APIs, data connectors, and interoperability standards to facilitate seamless data exchange with external educational platforms.

02



Resource Aggregation

Aggregating educational resources from various sources using algorithms and data pipelines, organized based on metadata attributes.

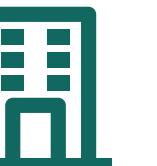
03



User Profiling

Deriving insights from user data using machine learning algorithms to create personalized learner profiles.

04



Dynamic Learning Path Generation

Continuous adaptation and refinement of learning paths based on real-time user feedback, interaction data, and performance metrics.





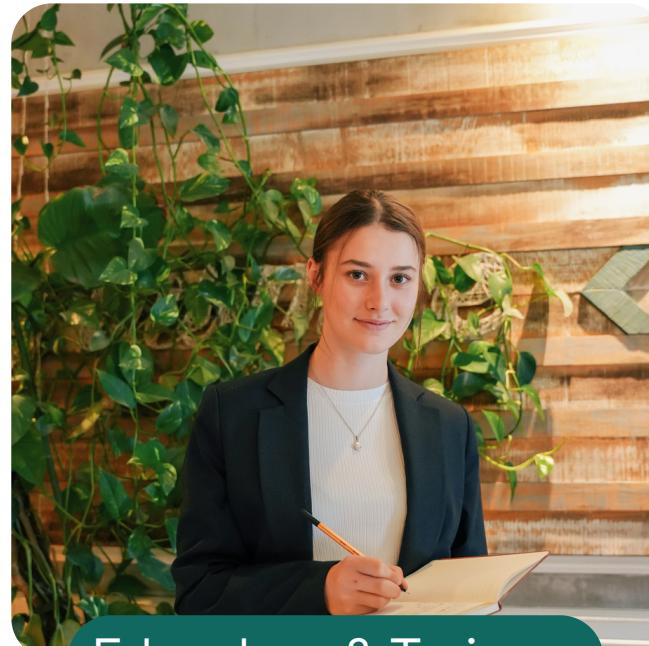
Market Analysis

Stakeholders



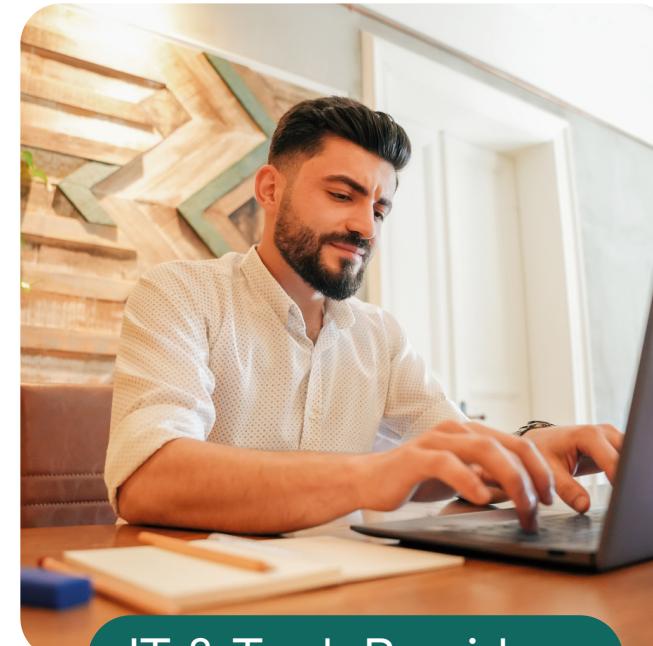
Students & Learners

Interested in seamless access to diverse educational resources and personalized learning experiences tailored to their needs and preferences.



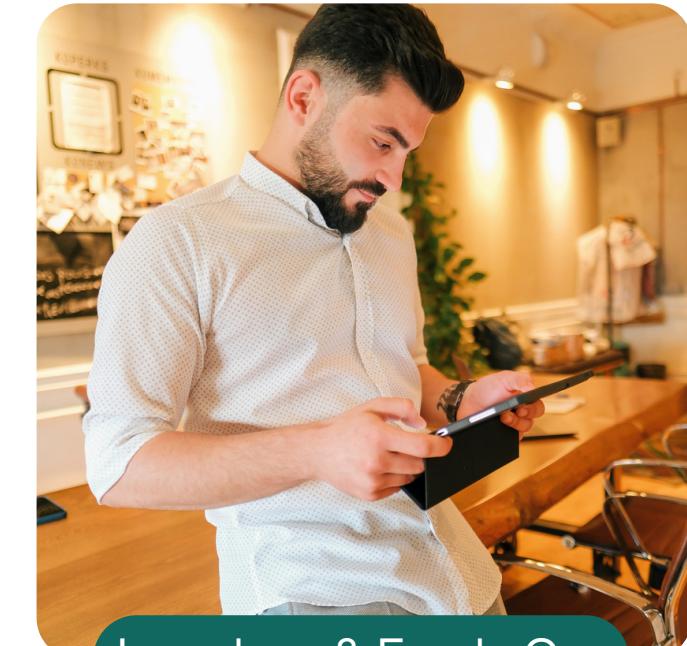
Educators & Trainers

Aim to provide effective and engaging learning experiences, tailored to individual student needs, with access to diverse educational resources.



IT & Tech Providers

Prioritize scalability, reliability, and performance optimization for seamless user experiences. Concerned about technical feasibility, data security, privacy risks, compatibility.

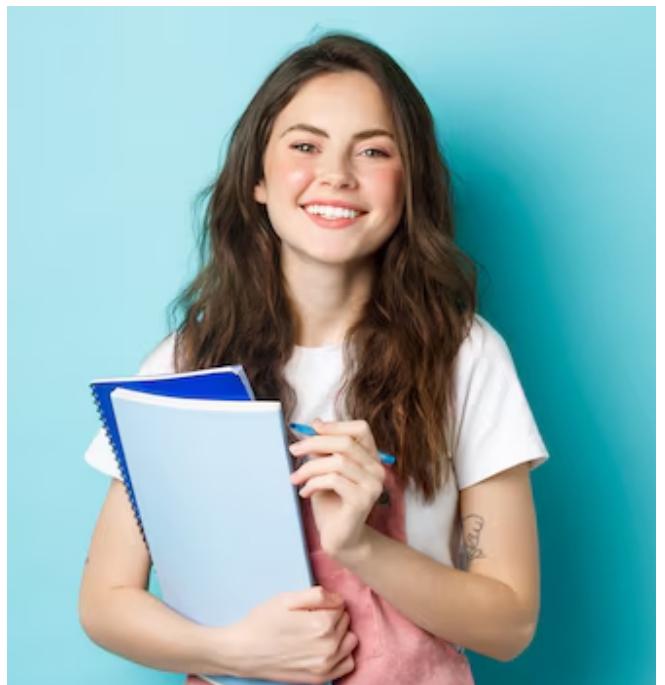


Investors & Funds Org

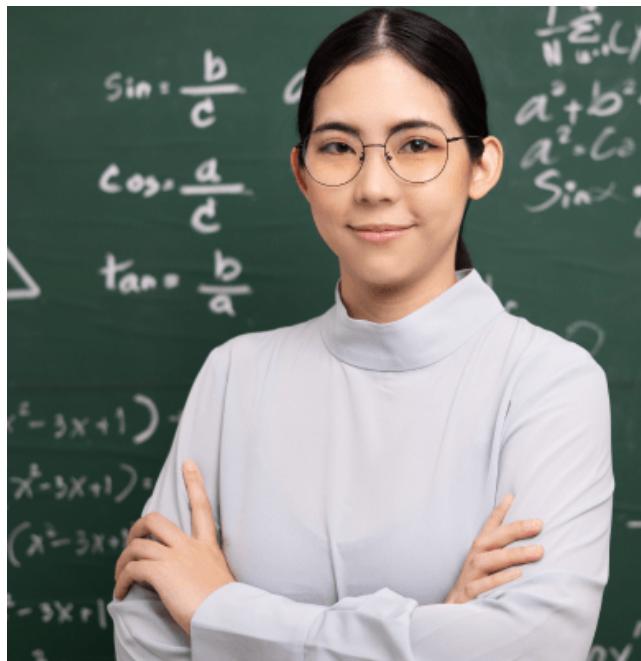
Interested in scalability, market potential, and sustainable revenue streams, with a focus on regulatory compliance and data security.

Target Audience

Our Learning Path Generator caters to a diverse spectrum of learners and educators, each with unique aspirations and learning objectives. Our primary target audience includes:



Students & Professionals



Educators



Lifelong Learners



Career Changers



Entrepreneurs

Our target audience encompasses a wide range of demographic and psychographic characteristics, each with unique learning preferences and goals.

Key Competitors

Exploring the forefront of online education, we delve into the unique offerings of leading competitors in personalized learning.



Pluralsight

Utilizes skill assessment tests to create personalized learning paths in technology-related fields.



LinkedIn Learning

Integrates with LinkedIn profiles to provide targeted learning paths aligned with industry trends.



Udemy

Allows instructors to create custom learning paths and offers lifetime access to purchased courses.



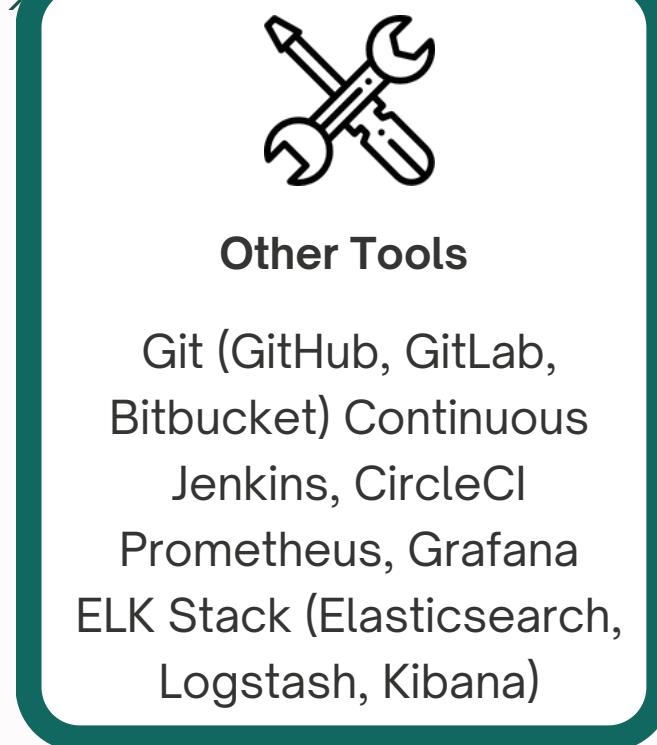
Coursera

Personalized learning paths based on user preferences, career goals, and skill levels.



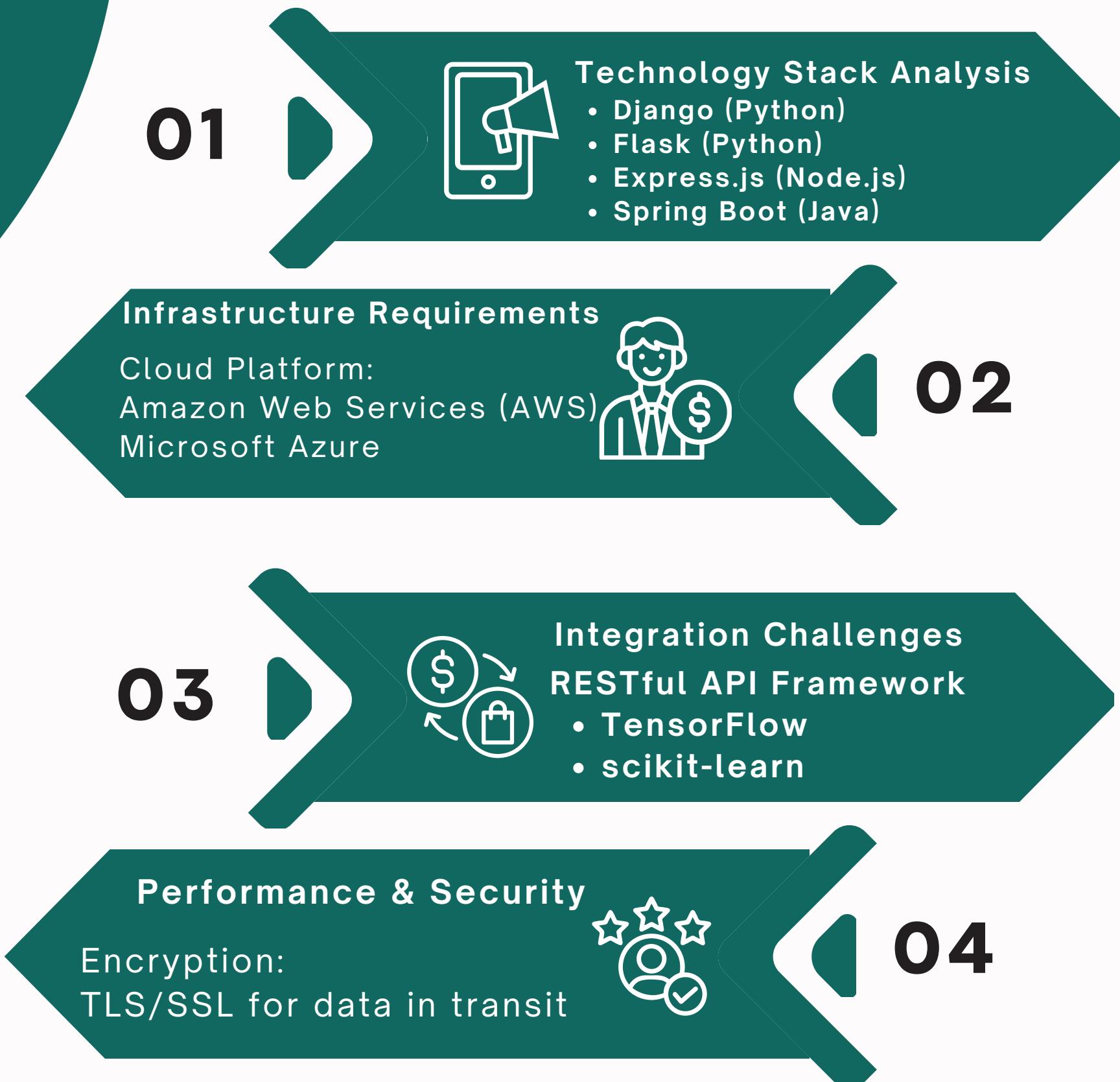
Feasibility Analysis

Technical Feasibility & Technologies



Other Tools

Git (GitHub, GitLab, Bitbucket) Continuous Jenkins, CircleCI Prometheus, Grafana ELK Stack (Elasticsearch, Logstash, Kibana)



Collaboration & Communication

- Slack
- Microsoft Teams
- Zoom

Solution Proposal

Empowering learners and educators alike, our innovative solution revolutionizes personalized learning experiences through tailored paths, comprehensive course catalogs, adaptive recommendations, and seamless integration.

Tailored Learning Paths

- Personalized learning journeys tailored to unique goals, interests, and learning styles.
- Individualized support with targeted guidance and resources.

Comprehensive Course Catalog

- Access to high-quality courses across diverse subjects and skill levels.
- Endless opportunities for personal and professional growth.

Adaptive Recommendation Engine

- Guided learning experiences that adapt to individual needs and proficiency levels.
- Personalized progression with real-time course recommendations.

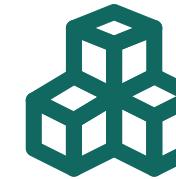
Seamless Integration

- Hassle-free access across multiple devices and environments.
- Unified learning ecosystem for streamlined administrative tasks and enhanced collaboration.

Risk Assessment

Objective: Identify potential challenges in development and implementation to ensure project success.

Technical Risks



- Integration Challenges: Collaborate with LMS providers and use standardized APIs.
- Scalability and Performance: Design system with scalability in mind and conduct regular performance testing.

Resource Risks



- Skill Set Availability: Invest in training or hiring and consider outsourcing.
- Budget Constraints: Monitor budget regularly and maintain a contingency fund.

Financial Risks



Funding Uncertainty: Diversify funding sources and maintain open communication with stakeholders.

Market & Compliance Risks



Adoption and User Engagement: Implement robust marketing and user engagement strategies

Project Timeline

The project will follow an iterative approach, with each iteration lasting 5-7 months. Development and design tasks will be executed concurrently within each iteration to deliver incremental value.



Budgeting

Allocating **2,100,000 CAD** for development and testing phases, with additional provisions for office expenses, miscellaneous costs, and contingency, totaling **2,688,000 CAD**



Development Phase

- Effort: **119,400 CAD**
- Reasons: Significant resources required for implementing features, coding, testing, and collaboration among team members.



Testing and QA Phase

- Effort: **70,000 CAD**
- Reasons: Essential for ensuring quality and reliability, involving various testing activities and thorough QA processes.



All other Phases

- Effort: **200,000 CAD**
- Office Expenses: \$315,000 (15% of Total Budget)
- Miscellaneous Expenses: \$63,000 (3% of Total Budget)
- Contingency: \$210,000 (10% of Total Budget)



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