AI & Education Technology | Enterprise AI | AWS

How an **AI learning platform** turns any source into a validated, personalized lesson on AWS

Company	Industry	Partner
Confidential	**AI & Education Technology**	**Flentas Technologies**

Flentas

Introduction

The customer is an independent AI product company headquartered in India. It builds secure, reasoning-driven AI products for learning, complex work, and everyday life.

Its first live product is an adaptive AI learning platform for school students (Class 6 to 12), college students, and people building career skills. The platform turns a single sentence, chapter, lecture, or uploaded document into AI-taught lessons, flashcards, quizzes, and practice in 19 languages. It runs on AWS, with generative AI on Amazon Bedrock and seven AI agents that plan, generate, validate, and assess learning content. Flentas Technologies partnered with the customer to deliver the platform on AWS.

At a Glance

Solution

Multi-Agent Platform
Seven AI agents plan, generate, validate, and assess learning content.

Generative AI
Amazon Bedrock with Claude Opus 5.5 and GPT-6 Luna.

Secure Containers
Amazon ECS in a private VPC with Cognito authentication & Secrets Manager.

Release Automation
Container builds and deployments through AWS CodePipeline.

Business Impact

Structured lessons from any source

More trustworthy, grounded AI answers

Plan approval before generation

Validated, reliable lesson quality

Scalable operations for exam-season demand



Technologies & Services Used

AI
- Amazon Bedrock (Claude Opus 5.5, GPT-6 Luna)

Compute
- Amazon ECS
- AWS Lambda

Container
- Amazon ECR

Database
- Amazon DocumentDB
- Amazon ElastiCache (Redis)

Networking
- Amazon VPC
- NAT Gateway
- Elastic Load Balancing
- Cloudflare

Monitoring
- Amazon CloudWatch

Security
- Amazon Cognito
- AWS Secrets Manager

DevOps
- AWS CodePipeline

The Challenge

Learners face more material than they can organize, and one-size-fits-all content leaves many behind. Giving every learner a good teacher, in their own language, at any hour, does not scale with people alone. The customer needed an AI platform that could deliver this reliably, safely, and at scale.

01

Lessons from Any Source, Personalized

Learners arrive with a topic, PDF, DOCX file, or presentation and expect a well-sequenced lesson in minutes. The platform had to ingest mixed formats and adapt every lesson to the learner's level, exam date, and pace.

02

Grounded, Trustworthy Answers

A tutor that gives plausible but wrong answers harms learners and erodes trust in the product. Explanations had to be anchored to curriculum material and the learner's own documents, not left to model output alone.

03

Reliable Content with Human Control

AI-generated scenes containing HTML, illustrations, simulations, and animations can fail to render or carry structural errors, and a broken lesson loses the learner. Learners and teachers also needed to review and change the lesson plan before the platform spent time generating it.

04

Student Data Protection

The platform serves school-age learners, so privacy, encryption, and role-based access were required from day one, with FERPA and COPPA alignment as design goals.

05

Two Audiences, Elastic Demand

Direct learners and institutions needed separate tenancy, content management, and live-class operations on shared infrastructure. Study traffic peaks around exams and evenings, so capacity had to scale without manual effort.

The Solution

The platform is a multi-agent AI system on AWS. Amazon Bedrock provides the reasoning models, Claude Opus 5.5 and GPT-6 Luna, while Amazon ECS runs the agents and the product around them. Learners reach the platform through Cloudflare and Application Load Balancers, and services run in private subnets across two Availability Zones.

01

Independent Services for Two Audiences

A Control Plane manages institutions, content, and live classes, while a separate B2C cluster serves learners directly. Every learner-facing capability runs as its own ECS service, so teams can scale and release each one independently and keep up with exam-season demand. Amazon ElastiCache for Redis keeps frequently read data fast, and Amazon DocumentDB holds platform data for the control plane and enterprise tenants.

02

Understanding Any Document

The Document Understanding Agent extracts structure, text, and concepts from uploaded files, giving every downstream agent clean, source-aligned context for lessons, flashcards, quizzes, and study help.

03

Grounding in Real Sources

The Knowledge Retrieval and Grounding Agent pulls in curriculum catalogs, NCERT-related resources, and the learner's own documents. This keeps lessons aligned to real material and reduces reliance on unsupported model output.

04

Planning with the Learner in Control

The AI Lesson Planning Agent uses Amazon Bedrock to set objectives, sequence concepts, and divide the lesson into scenes at the right level. The Study Studio Director Agent then shows the learner a scene-by-scene plan, applies requested changes, and starts generation only after approval, so compute is spent on lessons the learner actually wants.

05

Generating Rich Lessons

The AI Content Generation Agent writes each scene from the approved plan, including explanations, key concepts, illustrations, simulations, math animations, and HTML canvas artifacts.

06

Validating Before Delivery

The Content Validation and Repair Agent renders every scene in a browser and checks for malformed HTML, rendering failures, and structural errors. When it finds a problem, it makes a limited number of repair attempts and revalidates, so broken scenes do not reach learners and repair loops cannot run unchecked.

07

Turning Lessons into Practice

The Assessment and Study Assistance Agent uses GPT-6 Luna on Amazon Bedrock to turn lessons and documents into flashcards, quizzes, chapter resources, and exam-style practice inside the learner workspace.

08

Secure, Automated Foundation

Amazon Cognito authenticates B2C users, AWS Secrets Manager stores credentials and API keys, and Amazon CloudWatch monitors service health, logs, and alarms. AWS CodePipeline builds and deploys container releases from Amazon ECR to ECS.

Business Impact

Lessons from Any Source

A sentence, a chapter, or an uploaded document becomes a structured, scene-by-scene lesson.



More Trustworthy AI

Lessons and answers are grounded in curriculum and learner documents, and generated content is validated before delivery.



Learner & Teacher Control

Plans are reviewed and approved before generation, so each lesson matches what the learner asked for.



Reliable Lesson Quality

Automated browser checks and bounded repair keep broken scenes from reaching learners.



Faster Study Preparation

Flashcards, quizzes, and exam practice are generated from the same sources in a click.



Scalable Operations

Independent ECS services scale with exam-season demand and release independently.



Conclusion

By partnering with Flentas Technologies, the customer launched its platform as a single multi-agent system that serves learners and institutions on shared AWS infrastructure, a strong base for bringing a personal teacher to every learner.

Take Action

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