📄 Page 1 – Problem & Solution Overview

Project Title:
AI Cost Optimization Advisor for Enterprises

Hackathon:
Lyzr AI Architect Challenge (HackerEarth)

Participant Name:
Ipshita Bhardwaj

Problem Statement:
Enterprises often face escalating cloud costs due to lack of real-time visibility and actionable insights. Existing tools may report usage, but they fall short in providing contextual, proactive recommendations tailored to specific use cases.

Proposed Solution:
An intelligent AI-powered cost optimization advisor that helps enterprises manage and reduce cloud costs. Built using **Lyzr Studio**, **Amazon Bedrock**, and **Nova LLMs**, the agent interacts with AWS cost APIs and returns human-like responses that are easy to understand and act upon.

Core Features:

- Conversational interface for cost inquiries
- Personalized optimization suggestions
- Real-time analysis of AWS services usage
- Agent built and deployed on Lyzr Studio

📄 Page 2 – Architecture & Workflow

System Architecture:

- **Frontend:** Chat-style interface (terminal or web-based)
- **Lyzr Agent:** Logic and prompt-engineered flow using Nova LLMs
- **Backend:** API calls to AWS Cost Explorer, Trusted Advisor, etc.
- **LLM Layer:** Amazon Bedrock's Nova for contextual response generation

Workflow Overview:

1. User inputs a query (e.g., *"What's causing high EC2 costs?"*)
2. Lyzr agent interprets the request and pulls AWS data
3. Agent summarizes results and suggests cost-saving actions
4. Optional follow-ups like scheduled reports or Slack alerts

Tools & Technologies:

- Lyzr.ai Studio
- Amazon Bedrock (Nova)
- AWS Cost APIs (CUR, Trusted Advisor)
- Python (backend logic)

📄 Page 3 – Innovation, Impact & Submission

Innovation:

- Context-aware AI for cloud cost insights
- First-of-its-kind integration of Lyzr agents with Bedrock models
- Removes complexity from AWS billing using conversational AI

Real-World Impact:

- Enables faster cost savings (up to 20–30% on average for many businesses)
- Reduces time spent on manual analysis
- Helps even non-technical teams monitor cloud expenses effectively

Future Scope:

- Integrate cost anomaly alerts via Slack or email
- Multi-cloud cost comparison (Azure/GCP)
- Connect to FinOps tools for budgeting

Submission Details:

- **Agent Link:** https://studio.lyzr.ai/agent/687272386cc2cda0d0a1a179
- **Participant:** Ipshita Bhardwaj