Title: Platform Migrator: A Gen AI-Based Code and Script Transformation Tool

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Problem Statement (PS11) PSCode:GSLABGAVSVIT001: Platform Migrator - Transform the software code and scripts of an application written for one environment to another environment, using Gen AI. The environment consists of Operating System on which the application runs, the language using which the application is written, Middleware, DB and Visualization tool. The migrator should be able to transform the code, scripts, query etc. from a current environment to the new environment. The change can be in either Operating System or language or DB or Visualization tool or in combination of these.

Approach:

- **Code Completion:** Implement intelligent code completion for Java and Python to assist developers in writing code efficiently and accurately.
- **Text to Code Generation:** Develop a system that can generate Python or Java code from natural language text, enabling developers to quickly translate ideas into executable code.
- **Java to Python Conversion:** Create a tool that can convert Java code to Python, allowing developers to easily switch between the two languages based on project requirements.

Tech Stacks:

- **Language:** Python for backend development and scripting, Java for any required components.
- **AI/ML Frameworks:** Use Transformers for code completion and Deeplearning for code translation and fine-tuning.
- **Tools:** Utilize libraries like NLTK for natural language processing, and any necessary libraries for code parsing and transformation.

Note: Strictly we are not using any API of LLM models

Expected Outcome: Our platform migrator aims to significantly reduce the time and effort required to migrate software applications between different environments. Developers will benefit from enhanced productivity through code completion, seamless text-to-code conversion, and efficient Java-to-Python conversion.