Objective:

Develop a simple AI application to assist an AI startup specializing in film script evaluation. The architecture should utilize AWS Bedrock, S3, Lambda, and API Gateway as depicted in the provided architecture diagram.

Task Description:

You are required to create an AI application that evaluates film scripts (provided file) based on the following sections:

- Plot structure and pacing
- Character development and motivations
- Dialogue and interactions
- Subplots and themes
- Originality and creativity

Steps to Complete the Task:

1. Set up AWS Bedrock and S3:

- Configure AWS Bedrock to use the appropriate AI models.
- Create an S3 bucket for storing script files and evaluation results.
- Ensure all necessary permissions and security measures are in place for both AWS Bedrock and S3.

2. Set up AWS Lambda Functions:

- Create a Lambda function to invoke the AWS Bedrock model for script analysis.
- Create a Lambda function to convert script files from .fdx format to .json.
- Implement additional Lambda functions as needed to meet the success criteria (analyzing plot structure, character development, dialogue, subplots, and originality).

3. Set up API Gateway:

- Configure API Gateway to accept script files from the client application.
- Ensure the API Gateway routes requests to the appropriate Lambda functions for processing.

4. Create a Data Pipeline:

- Develop a pipeline that integrates all the services (S3, Lambda, API Gateway, and Bedrock).
- Ensure the pipeline efficiently handles the data flow from script submission to evaluation and result storage.

5. CloudFormation Stack:

- Create a CloudFormation stack to automate the deployment of all necessary AWS resources (S3, Lambda functions, API Gateway, and any other required resources).

6. Prompt Engineering:

- Develop prompts for the AI model to ensure it covers all the evaluation needs (plot structure, character development, etc.).
- Fine-tune the prompts to improve the accuracy and relevance of the evaluations.

Deliverables:

1. AWS Configuration:

- Configuration details for AWS Bedrock and S3 setup.
- IAM roles and policies for security and permissions.

2. Lambda Functions:

- Source code for all Lambda functions.
- Documentation explaining each function's purpose and how it fits into the overall application.

3. API Gateway:

- Configuration details for the API Gateway.
- Documentation on how to interact with the API for script submission.

4. Data Pipeline:

- Overview of the data pipeline and how each component interacts.
- Any scripts or configuration files used to set up the pipeline.

5. CloudFormation Stack:

- CloudFormation template file.
- Instructions for deploying the stack.

6. Prompt Engineering:

- List of prompts used for the AI model.
- Examples of script evaluations performed by the AI.

Evaluation Criteria:

- Correct and secure setup of AWS Bedrock, S3, Lambda, and API Gateway.
- Functional and efficient Lambda functions.
- Properly configured and documented API Gateway.
- Clear and coherent data pipeline.
- Accurate and relevant AI model prompts.
- Comprehensive documentation for all parts of the task.

Submission:

Please submit all deliverables as a single compressed file. Ensure all source code is well-documented and includes instructions for deployment and usage.