Python Program Documentation:

Step-by-Step Process:

1. **Connect to AWS S3:**
    a. Establish a connection with AWS S3 using the provided credentials.
2. **Download FHIR Files from S3:**
    a. Retrieve the most recently created folder from the specified S3 bucket.
    b. Download all JSON files within the latest folder containing FHIR data.
3. **Normalize FHIR Data:**
    a. Flatten the JSON structure of each FHIR file to create a tabular format.
    b. Normalize the FHIR data into DataFrames, separating each resource type.
4. **Deidentify Data:**
    a. Anonymize or deidentify sensitive information in the data, such as personally identifiable information (PII), using a specified set of columns.
5. **Ingest Data into Elasticsearch:**
    a. Establish a connection with Elasticsearch.
    b. Prepare the data for ingestion by adding metadata and creating unique identifiers.
    c. Create or update Elasticsearch indices as necessary.
    d. Bulk index the deidentified data into Elasticsearch for each resource type.
6. **Logging and Error Handling:**
    a. Log information and errors using the configured logging system.
    b. Handle exceptions gracefully, logging any errors encountered during the process.