Here are the assumptions made in the project based on the provided code:

1. CSV File Structure:

- The first row of the CSV file contains headers.

- Headers can include nested properties denoted by dot notation (e.g., `name.firstName`).

- The mandatory properties (`name.firstName`, `name.lastName`, `age`) are always present in each record.

- The CSV file can have more than 50,000 records.

- All sub-properties of a complex property are placed next to each other in the file.

2. File Upload:

- The uploaded CSV file is saved in the directory specified by the `UPLOAD\_DIR` environment variable.

- The CSV file is uploaded using a form field named `file`.

3. JSON Conversion:

- The CSV data is converted to JSON using custom logic without using external libraries for CSV to JSON conversion.

- The JSON structure adheres to the nested property notation from the CSV headers.

4. Database Structure:

- The PostgreSQL database contains a `Users` table with the specified schema:

```sql

CREATE TABLE users (

"name" varchar NOT NULL,

age int4 NOT NULL,

address jsonb NULL,

additional\_info jsonb NULL,

id serial4 NOT NULL

);

```

- The `name` field combines `firstName` and `lastName` from the JSON data.

- The `address` field stores nested address properties as a JSON object.

- Any additional properties in the CSV are stored in the `additional\_info` field as a JSON object.

5. Database Operations:

- Each JSON object is inserted into the `Users` table.

- If there are any issues during the database insertion, they are logged to the console.

6. Age Distribution Calculation:

- The age distribution of users is calculated after all records are uploaded to the database.

- The age distribution is printed to the console in the specified format:

```

Age-Group % Distribution

< 20 XX.XX%

20 to 40 XX.XX%

40 to 60 XX.XX%

> 60 XX.XX%

```

7. Error Handling:

- Basic error handling is in place for database operations, but there may be additional edge cases not covered by the provided code.

8. Environment Configuration:

- The PostgreSQL connection details and upload directory are configured using environment variables specified in a `.env` file.

These assumptions ensure that the code functions correctly based on the given requirements and the specified CSV file structure and database schema.