Challenges and Solutions Faced During Semantic Medical Search Engine Development

# Challenge:

SyntaxWarning: invalid escape sequence in file path.

## Solution:

Use raw strings for file paths (prefix the path string with 'r') or escape backslashes properly (e.g., use 'E:\\path\\to\\file').

# Challenge:

NotADirectoryError when trying to load a CSV file using os.listdir.

## Solution:

Ensure you're passing the directory to os.listdir, not the path to a file. For reading CSVs, use pandas.read\_csv() directly on the file path.

# Challenge:

ImportError related to sentence-transformers and torch.

## Solution:

Install the correct versions of 'torch' and 'sentence-transformers'. Ensure that the Python version is compatible with the installed packages (e.g., use Python 3.10 instead of 3.13).

# Challenge:

RuntimeError when saving FAISS index (No such file or directory).

## Solution:

Create the target directory (e.g., 'models/') before calling faiss.write\_index(). Use os.makedirs(path, exist\_ok=True) to ensure the directory exists.

# Challenge:

Uvicorn error: Could not import module 'medical\_search\_ui'.

## Solution:

Ensure that the module you're trying to run with uvicorn is a valid Python file with a FastAPI `app` instance (e.g., medical\_search\_backend.py). You cannot serve HTML files directly using uvicorn.

# Challenge:

DeprecationWarning for FastAPI's @app.on\_event.

## Solution:

While not a breaking issue, consider migrating to FastAPI's newer lifespan events as recommended in the documentation.

# Challenge:

Reloading error with uvicorn using --reload flag.

## Solution:

When using --reload with uvicorn, always provide the app as an import string (e.g., `uvicorn medical\_search\_backend:app --reload`). Ensure the file is a valid Python module.