COMMON ERRORS & HOW TO RESOLVE THEM

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For the Technology Change Management FAQ Chatbot

Below are the most frequent issues encountered when running or modifying the chatbot — and clear steps to resolve each one.

1. `pdf-extraction` Module Not Found
Error message:

Error: Cannot find module 'pdf-extraction'

Cause

The required PDF parsing library is not installed.

Fix

1. Install the package:
2. npm install pdf-extraction
3. Ensure you install it in the project folder (not globally).

2. PDF Cannot Be Read or Parsed
Error message:

[KB] PDF parsing failed
[KB] PDF contained no extractable text

Symptom:

Console shows parsing failure or no extractable text.

Cause

- The file 'knowledgebase.pdf' is missing or corrupted.
- The PDF is a scanned image with no embedded text.
- Insufficient permissions to read the file.

Fix

4. Ensure 'knowledgebase.pdf' exists in the same directory as the script.
5. Verify the PDF contains selectable text (not scans).
6. Re-save the PDF via an editor using 'Save As' → PDF.
7. Check file permissions.

3. Structured Q/A Not Being Detected
Symptom:

Chatbot loads fallback paragraphs instead of Q/A items.

Cause

The Q/A in the PDF does not match the expected format (Q: ... on one line, A: ... on the next).

Fix

> Use exact labels 'Q:' and 'A:' with a newline between them.
> Example:
> Q: What is an RFC?
> A: An RFC (Request for Change) is...

4. Low Confidence Matches
Symptom:

Bot replies: 'I couldn't confidently match that. Please rephrase.'

Cause

- The confidence score is below 0.35.
- User phrasing diverges from the PDF content.
- Keywords not captured by patterns.

Fix

- Add more detailed Q/A variants to the PDF.
- Rephrase Q lines to include common synonyms.
- Optionally lower threshold in code: if (best.s > 0.30) ...

5. PDF Changes Not Auto-Reloading
Cause

- OS file-watch polling missed changes.
- The editor saves to a temp file without updating timestamp.
- Sync tools override file metadata.

Fix

- Ensure you overwrite the same file 'knowledgebase.pdf'.

- Increase polling interval in fs.watchFile to 5000 (5s).
- Manually restart the server if needed.

6. HTML Not Loading / Blank Page
Cause

- Server not running or crashed.
- Port already in use.
- Navigating to wrong URL.

Fix

- Start the app: node app.js (or your file name).
- Open http://localhost:3000 in the browser.
- Change the PORT constant if 3000 is occupied (e.g., 4000).

7. Browser Cannot Fetch /kb
Error message:

Failed to fetch /kb

Cause

- Server crashed while parsing PDF.
- Endpoint not reachable.
- Empty JSON returned.

Fix

- Restart the server and check logs.
- Verify route handler: if (req.url === '/kb') ...
- Open http://localhost:3000/kb to confirm JSON output.

8. No Answers Returned or FAQ List Empty
Cause

- KB array failed to load.
- PDF extraction returned no text.
- Incorrect PDF formatting.

Fix

- Add temporary logging: console.log(KB).
- Confirm the PDF has real text and correct Q/A format.
- Ensure parseStructuredQA fallback to parseUnstructured is working.

9. Node.js Version Too Old
Error message:

SyntaxError: Unexpected token ...

Cause

Using a Node.js version that lacks support for modern syntax.

Fix

- Upgrade Node.js to v16 or later.
- Check version with: node -v

10. Chat UI Looks Broken
Cause

- Browser cached old HTML.
- CSS not applied due to corrupted string or missing backticks.
- Server served stale content.

Fix

- Hard refresh (Ctrl/Cmd + Shift + R).
- Restart the Node.js server.
- Inspect the HTML template string for missing backticks or quotes.