ChatGPT

CONTEXTUAL HYBRID RAG — BUILD CHECKLIST

CORE MODULES (to implement from doc)

#	Module Path	Purpose	Status
1	`src/contextual_rag/document_processor.py`	Chunking, contextual summaries	☑ Not Started
2	`src/contextual_rag/sparse_vectorizer.py`	TF-IDF sparse vector generation	☑ Not Started
3	`src/contextual_rag/vectorstore_client.py`	Qdrant upsert, delete, retrieve (dense+sparse)	☑ Not Started
4	`src/contextual_rag/reranker.py`	Cohere reranking pipeline	☑ Not Started
5	`src/contextual_rag/hybrid_retriever.py`	Combined dense+sparse retrieval logic	☑ Not Started
6	`src/contextual_rag/api.py`	FastAPI app for querying and ingesting	☑ Not Started

⚙ SUPPORT FILES (non-core, still essential)

#	File Path	Purpose	Status
7	`.env.example`	Auth, API keys, config hints	☑ Not Started
8	`configs/qdrant_config.json`	Qdrant collection + vector schema	☑ Not Started
9	`scripts/ingest_doc.py`	CLI doc ingester	☑ Not Started
10	`scripts/query_test.py`	CLI test for hybrid query + rerank	☑ Not Started

TESTS

#	Test Path	What It Validates	Status
11	`tests/test_document_processor.py`	Splitting, summarization consistency	☑ Not Started
12	`tests/test_sparse_vectorizer.py`	TF-IDF vector output shape	☑ Not Started

#	Test Path	What It Validates	Status
13	`tests/` `test_vectorstore_client.py`	Qdrant insert/query/delete	☑ Not Started
14	`tests/test_hybrid_retriever.py`	Accuracy of retrieval fusion logic	☑ Not Started
15	`tests/test_reranker.py`	Re-ranking order matches Cohere results	☑ Not Started

PROJECT FILE STRUCTURE CHECKLIST

Project Root

- [ ] README.md
- [ ] LICENSE
- [ ] CONTRIBUTING.md
- [ ] CHANGELOG.md
- [ ] CODE_OF_CONDUCT.md
- [ ] .gitignore
- [ ] .env.example
- [ ] requirements.txt
- [ ] setup.py
- [ ] pyproject.toml

Configuration

- [ ] config/config.yaml
- [ ] config/logging.yaml

Data

- [ ] data/raw/sample_documents.pdf
- [ ] data/processed/processed_chunks.json
- [ ] data/seed_knowledge/seed_knowledge.json

Notebooks

- [ ] notebooks/exploratory_analysis.ipynb

Scripts

- [ ] scripts/ingest_documents.py
- [ ] scripts/train_embeddings.py
- [ ] scripts/run_rag_pipeline.py
- [ ] scripts/evaluate_system.py

Source Code

- [ ] src/**init**.py

- [ ] src/main.py

Core Modules

- [ ] src/rag_core/**init**.py
- [ ] src/rag_core/document_processor.py
- [ ] src/rag_core/hybrid_retriever.py
- [ ] src/rag_core/contextual_embedder.py
- [ ] src/rag_core/reranker.py
- [ ] src/rag_core/utils.py

API

- [ ] src/api/**init**.py
- [ ] src/api/app.py
- [ ] src/api/routes.py

Memory Module

- [ ] src/memory/**init**.py
- [ ] src/memory/character_memory.py

Tests

- [ ] tests/**init**.py
- [ ] tests/test_document_processor.py
- [ ] tests/test_hybrid_retriever.py
- [ ] tests/test_contextual_embedder.py
- [ ] tests/test_reranker.py
- [ ] tests/test_api.py

Examples

- [ ] examples/example_query.py
- [ ] examples/example_config.yaml

Docker

- [ ] docker/Dockerfile
- [ ] docker/docker-compose.yml

Documentation

- [ ] docs/index.md
- [ ] docs/architecture.md
- [ ] docs/api_reference.md
- [ ] docs/usage.md
- [ ] docs/faq.md

GitHub Workflows & Templates

- [ ] .github/ISSUE_TEMPLATE/bug_report.md
- [ ] .github/ISSUE_TEMPLATE/feature_request.md

- [ ] .github/workflows/ci.yml