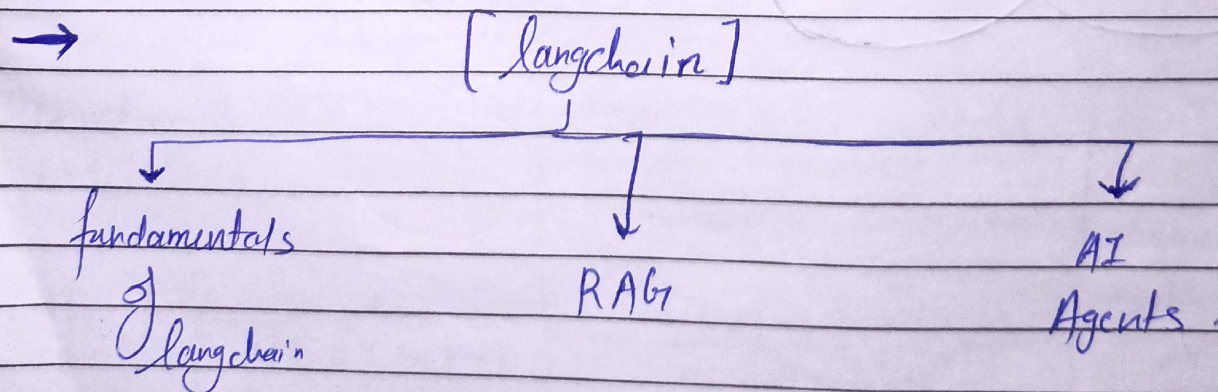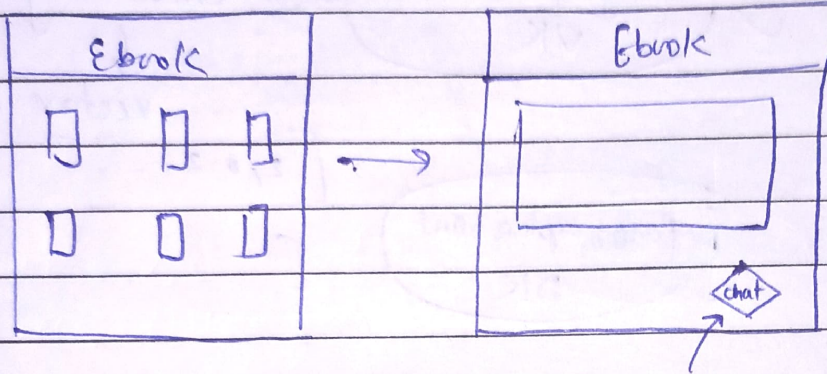# LANGCHAIN :

→ what is langchain ??

langchain is an open source framework that build llm based application it provides modular components and end to end tools that help develops build complex AI application such as chatbots, questioning Answering system, Retrieval Augumented generation (RAG) , autonomous Agent and more.
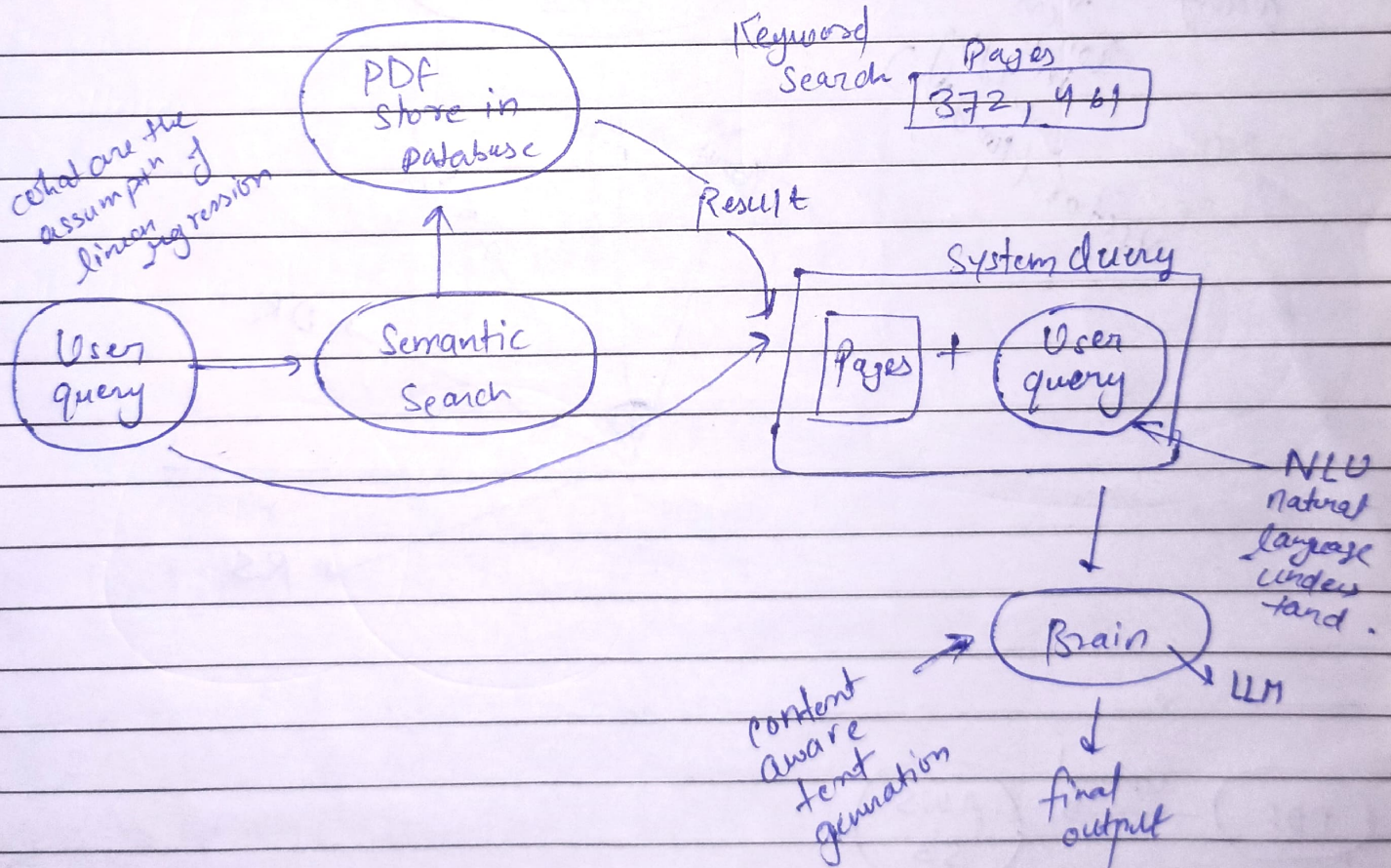
1. Support all the majors LLM   → chains.
2. Simplifying developing LLM based applications
3. Integration Available for all major Tools.
4. open Source / free / Actively developed
5. Support all the major Gen AI use cases.

→

[langchain]

↓   ↓   ↓

fundamentals
of
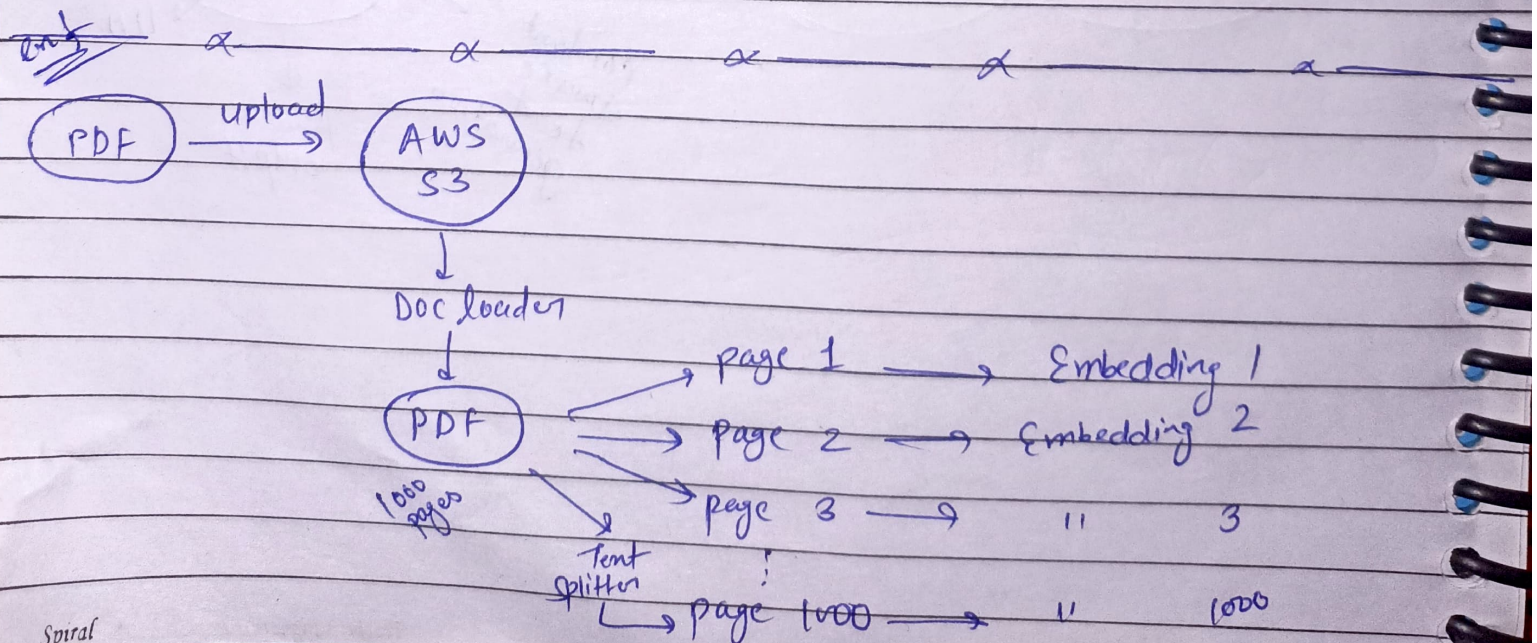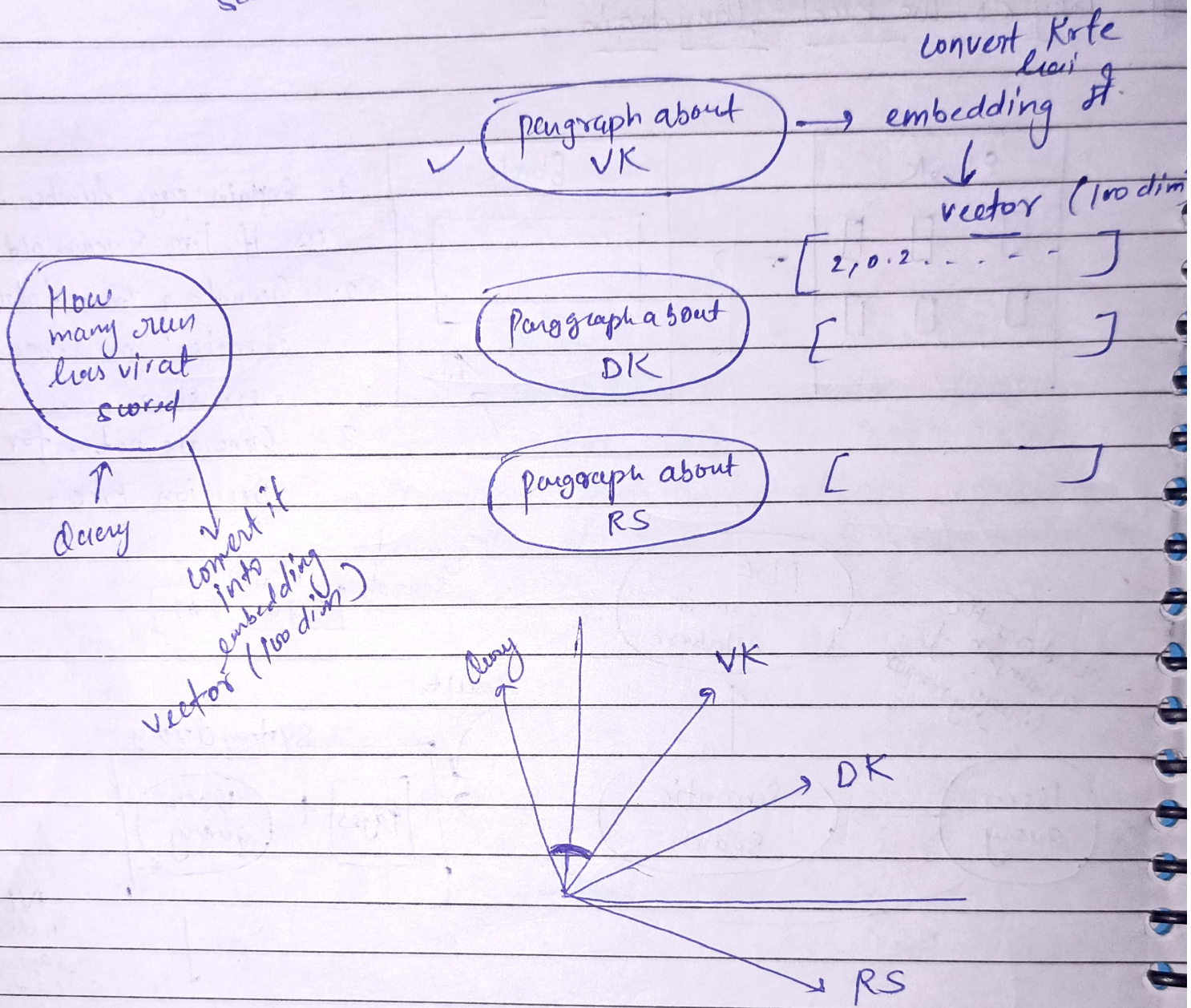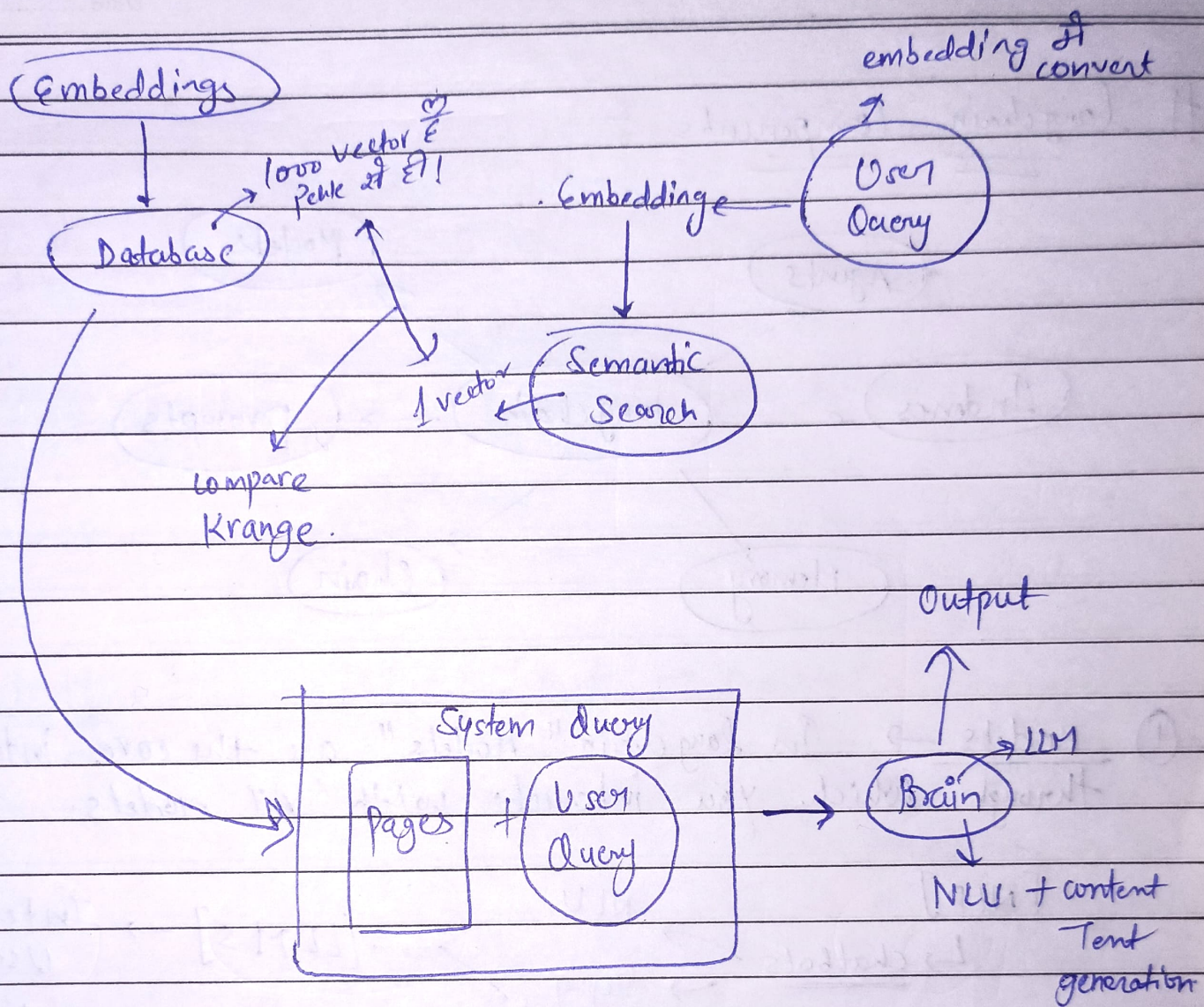langchain

RAG

AI
Agents.

why do we need langchain :-

1. Explain page number 5 as if I am 5 years old.
2. Generate a True false exercise on linear regression.
3. Generate notes for Decision Tree.

Keyword Search → Pages [372, 461]

what are the assumption of linear regression

Result

System query

NLU natural language understand.

content aware text generation

Brain → LLM

final output

Semantic
Search

convert Krte
hai g
(Paragraph about VK) ——→ embedding 计

↓

vector (100 dim
$[2, 0.2 \ldots \ldots]$

(How many run has viral scored)

(Paragraph about DK) $[\qquad]$

↑
Query

convert it into embedding
vector (100 dim)

(Paragraph about RS) $[\qquad]$

Query   VK

DK

RS

∝ —— ∝ —— ∝ —— ∝ —— ∝ —

(PDF) —upload→ (AWS S3)

↓

Doc loader

↓

(PDF)

1000 pages

Text Splitter

→ Page 1 ——→ Embedding 1
→ Page 2 ——→ Embedding 2
→ Page 3 ——→   ''   3
⋮
→ Page 1000 ——→ ''   1000

embedding में convert

(Embeddings)

1000 vector एक embedding की एक एक पेज का एक E1!

Embeddings

User Query

Database

Semantic Search

1 vector

Compare
Krange.

Output

System Query

Pages + User Query

→ Brain → LLM

NLU + content
Text
generation

Benefits :-

1. Concept of chain
2. Model Agnostic developement
3. Complete ecosystem
4. Memory and state handling

What can you build :-

1. conversational chatbots
2. AI Knowledge Assistants
3. AI Agents
4. Workflow Automation

5. Summarization /
   Research Helpers