SynthMed
Enterprise Design Thinking

AI Agent for Medical Research Synthesis

powered by IBM watsonx Orchestrate

The Team Alignment Map

Mission:
Develop AI Medical Research Synthesis Agent

Period:
Sep 22 - Nov 28

Joint Objectives

What do we intend to achieve together?

Work with a diverse team to successfully complete the IBM SkillsBuild training.

Collaborate and share ideas regarding AI in Healthcare challenge.

The completion of a running prototype.

Joint Commitments

Who does what and with whom?

Team Roles:

Team Lead: Zaynab Shakkour
Solution Designer: Jay Warfield

Research Lead: Andrew Kee
Technical Lead:
Communications Lead:

Joint Resources

What resources do we need?

eLearning courses from IBM

Training labs for coding and using IBM models

Access to IBM cloud account to store and process the data with Python.

Data Resources: would be scientific and research papers from PubMed or other databases, PDFs, and other open source databases

Joint Risks

What can prevent us from succeeding?

Data limitations, Time constraints and pulling together the right data in time.

How to obtain user feedback (social media, etc).

Users play an important role in helping to define an initial prototype followed by reviewing iterations with users for feedback.

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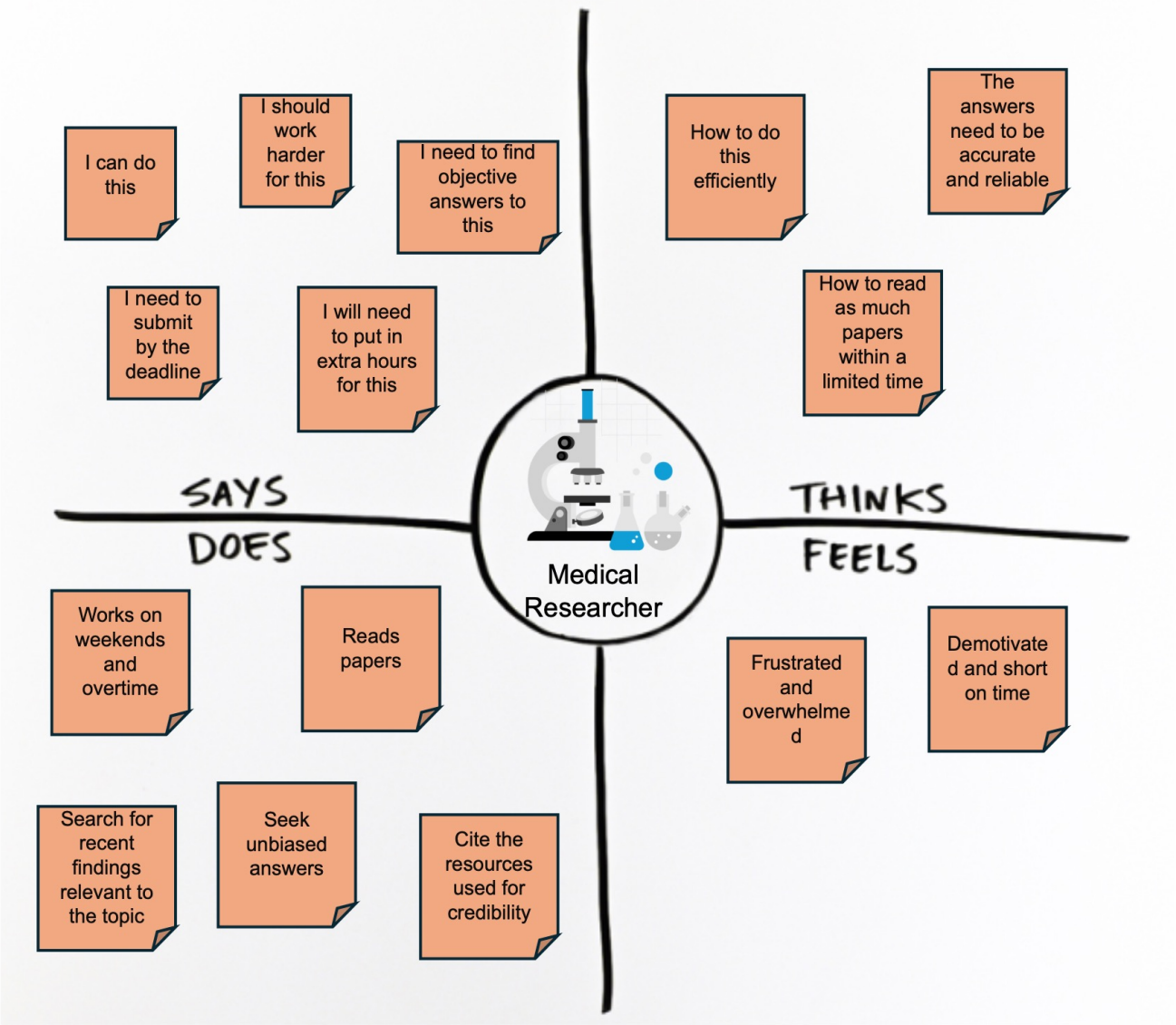
Strategyzer
strategyzer.com

Empathy Map


I can do this
I should work harder for this
I need to find objective answers to this
How to do this efficiently
The answers need to be accurate and reliable
I need to submit by the deadline
I will need to put in extra hours for this
How to read as much papers within a limited time
SAYS
DOES
THINKS
FEELS
Medical Researcher
Works on weekends and overtime
Reads papers
Frustrated and overwhelmed
Demotivated and short on time
Search for recent findings relevant to the topic
Seek unbiased answers
Cite the resources used for credibility

As-Is Scenario Map

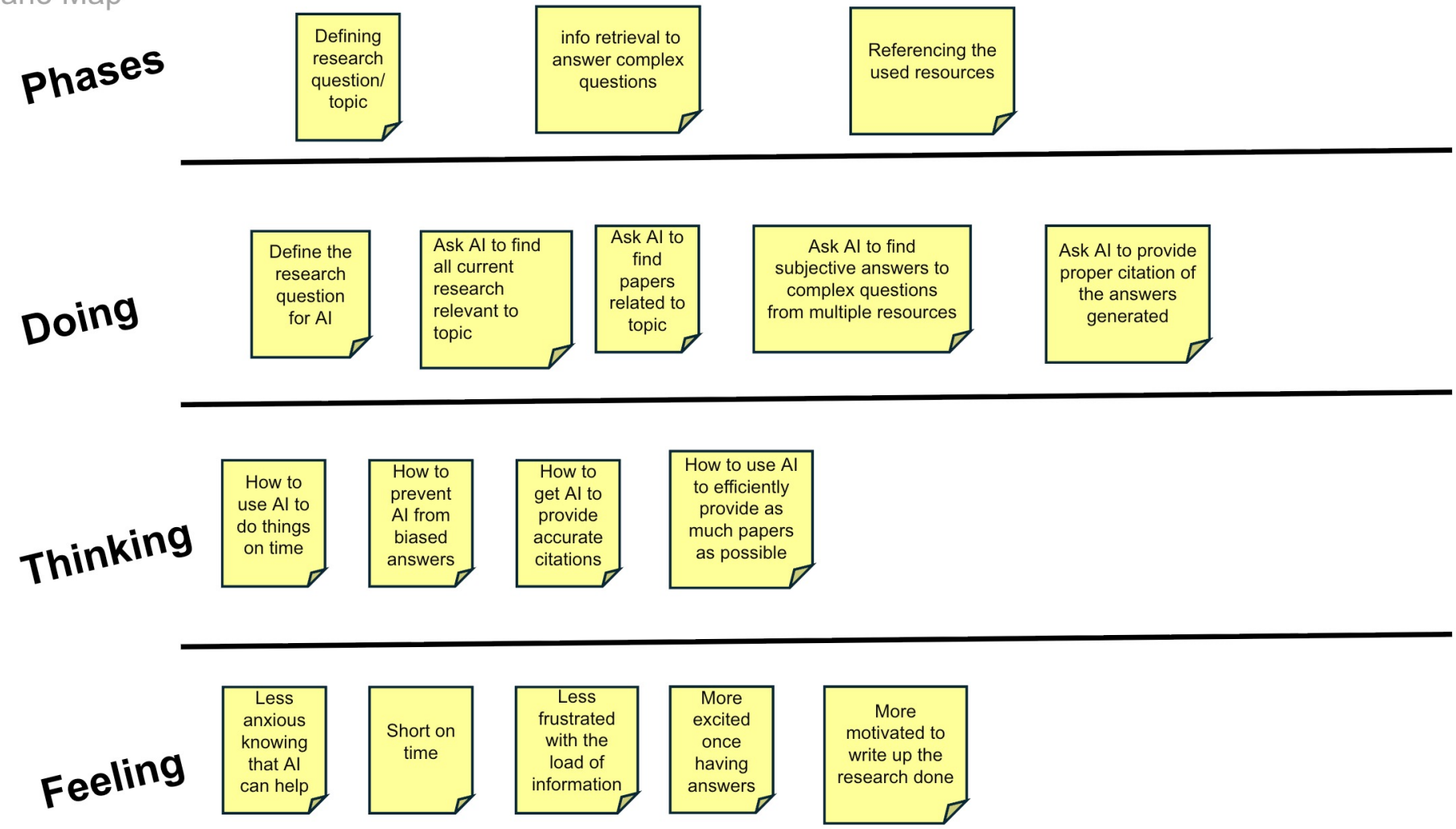
Needs Statement

Medical researchers need help to expedite reviews of volumes of research papers.

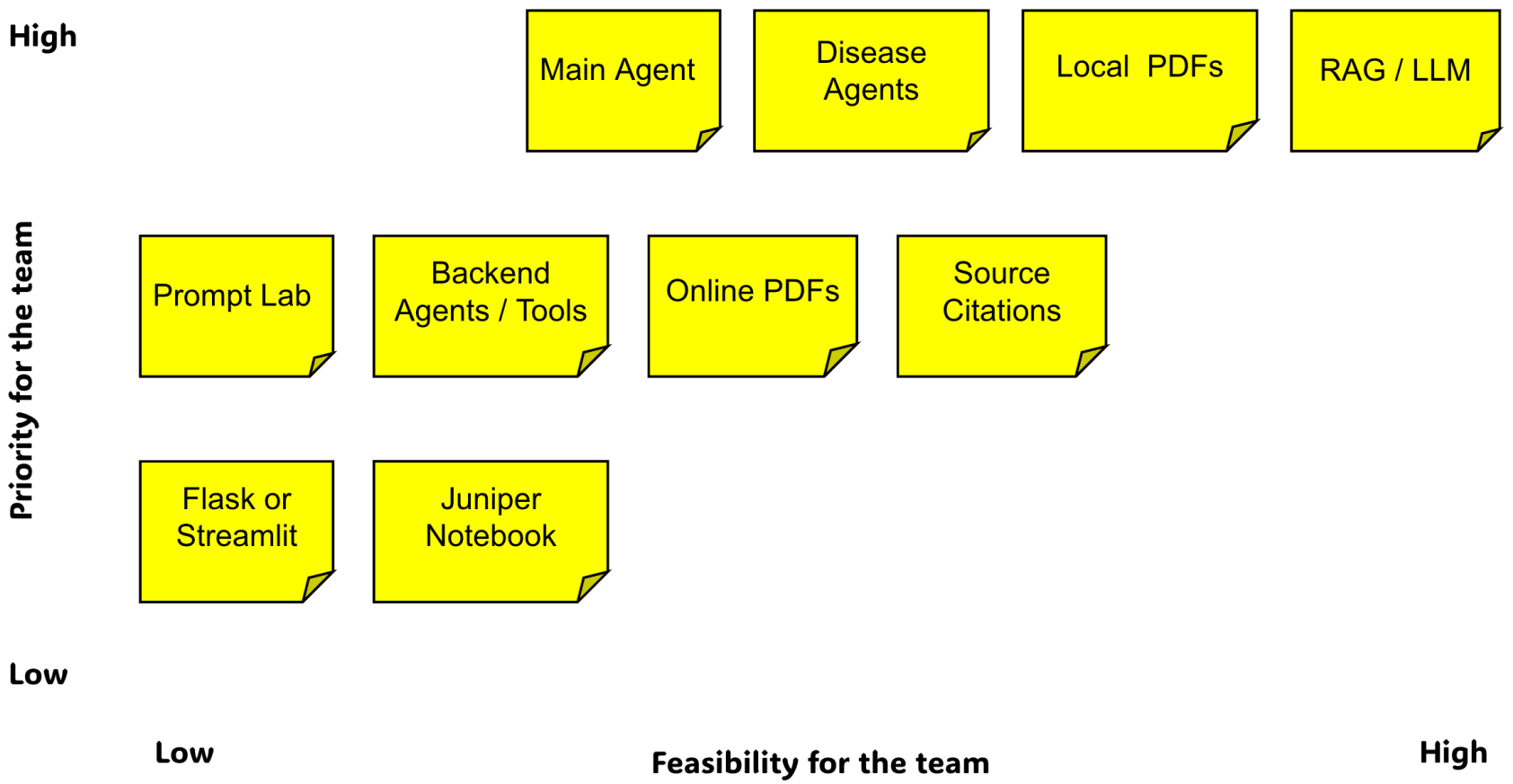
Medical researchers need help to synthesize insights from volumes of research papers.

Medical researchers need answers to complex questions with citations.

To-Be Scenario Map



Prioritization Grid



Main Agent

Disease Agents

Local PDFs

RAG/LLM

Prompt Lab

Backend Agents / Tools

Online PDFs

Source Citations

Flask or Streamlit

Juniper Notebooks

SynthMed Research Plan

Team Name	SynthMed
Research plan owner name	Zaynab - Jay - Andrew
Date	10/08/2025

Research Plan Purpose

State the business purpose

AI Medical Research Synthesis Agent

Research Objectives

Written as statements or questions. Be explicit. What will you test, why, and how (specific methods)?
An objective must be singular & measurable.

Objective	Statement/question	Research Method(s)
Objective 1	Data Collection: PDFS of research articles, medical books	Python libraries for PDF processing
Objective 2	How to get AI to ingest multiple documents?	Implement vector databases such as FAISS or Chroma and document
Objective 3	RAG to answer complex medical questions	Build Retrieval-Augmented Generation pipeline using tools like OpenAI

SynthMed Research Plan (continued)

Screening Criteria

Describe the users you need to talk to for each phase of the research plan.

User Description	- PHD Students - Medical Researchers
Number of users per group	5
Additional criteria*	U.S. Citizen, medical research background

*e.g. geography, market, expertise, experience

Timeline

Outline the research phases needed and their estimated timelines. State the team members assigned to leading or assisting in each phase.

Phase	Work to be done	Dates	Team members
Phase 1	Data Collection & Document processing	Oct 20, 2025	Zee, Jay, Andrew
Phase 2	Ai Agent - IBM Cloud- to integrate documents and	Oct 27, 2025	Zee, Jay, Andrew
Phase 3	Providing the citations with generated answers	November 1st	Zee, Jay, Andrew

Deliverables

State interim and final deliverables (e.g. Playbacks, workshops, etc.) There is no predefined medium.

SynthMed - an AI Agent that assists Medical Researchers with Info retrieval.