Work Breakdown Structure (WBS)

The WBS will further detail the tasks and subtasks involved in each phase. Here's a high-level breakdown:

Phase 1 WBS:

Data Acquisition and Preprocessing

Subtasks: Define data collection methods, develop data cleaning protocols, format data for KG ingestion

Knowledge Graph Population

Subtasks: Design KG schema, configure LLM for information extraction, populate KG with patient data

RAG System Development

Subtasks: Define retrieval strategies, integrate KG access within LLM, implement logic for suggesting diets

Expert Moderation

Subtasks: Design user interface for expert review, implement functionalities for modification and approval

Data Storage

Subtasks: Select and configure database system, secure data storage protocols.

Phase 2 WBS:

LLM Fine-tuning

Subtasks: Prepare combined dataset for training, configure LLM fine-tuning process

Personalized Diet Recommendation

Subtasks: Develop user interface for inputting patient information, integrate LLM with RAG system for recommendation generation, present personalized diet plans

## Testing and Validation

- Testing strategy, including unit testing, integration testing, and user acceptance testing.

- Validation procedures to ensure the accuracy and reliability of recommendations.

- Performance metrics for evaluating the system's effectiveness.

## Deployment Plan

- Deployment strategy, including staging and production environments.

- Rollout plan for releasing updates and new features.

- User training and onboarding process.

## Maintenance and Support

- Plan for ongoing maintenance and support of the system.

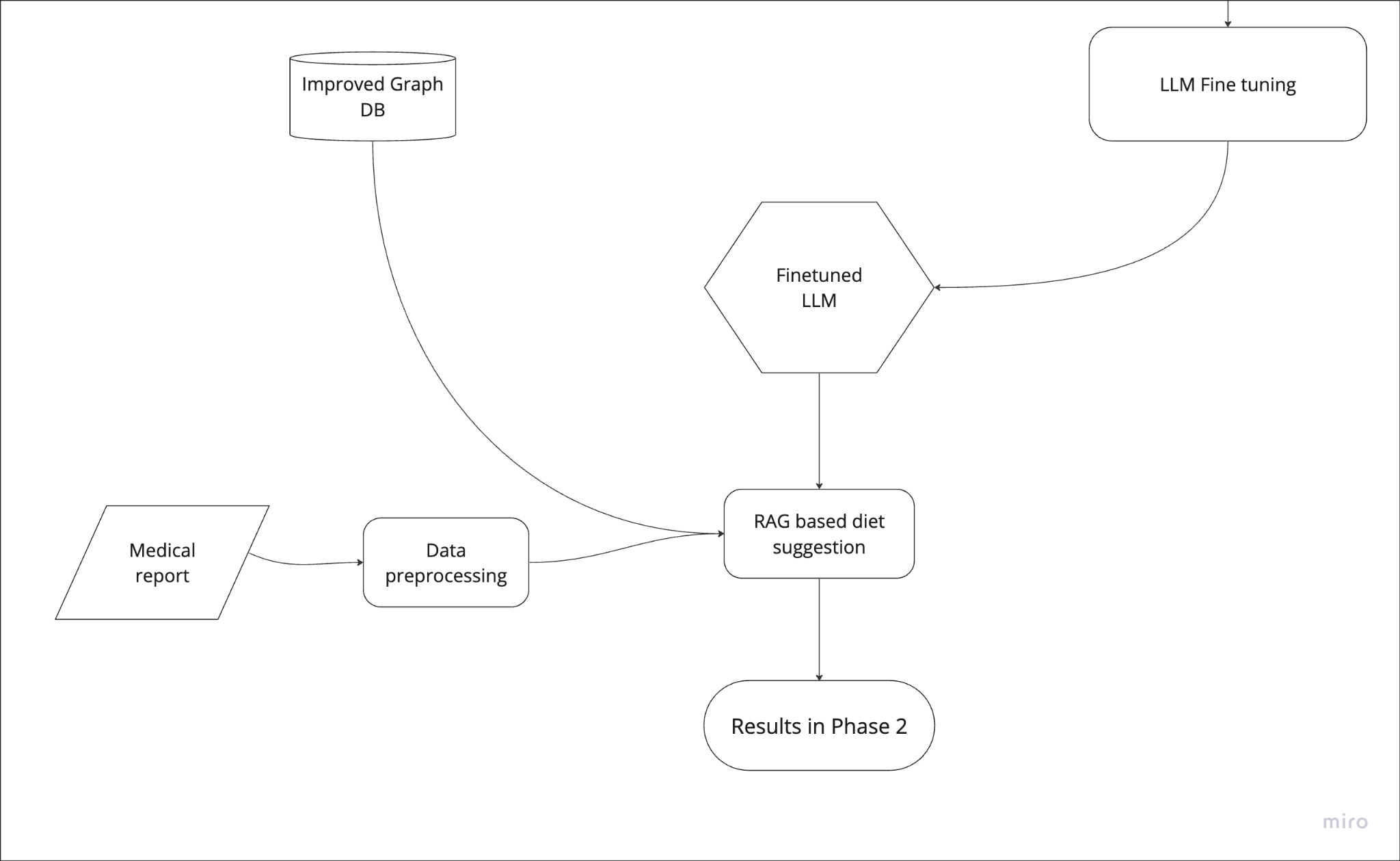
- Procedures for handling bug fixes, updates, and enhancements.

- Support channels for users to report issues and provide feedback.

## Next Steps

- Next steps for implementing the diet recommendation system.

Phase 2



Phase 2: LLM Fine-tuning and Personalized Diet Recommendation

**Phase 2:**

1. Fine-tuning the LLM: Utilize the combined dataset from Phase 1 (original data + processed data + expert-moderated data) to fine-tune the LLM for improved diet suggestion accuracy.
2. Personalized Diet Recommendation: Based on a patient's profile and preferences, use the fine-tuned LLM with the populated knowledge graph to generate personalized diet plans utilizing the RAG system.

| Phase 2: LLM Fine-tuning & Personalized Diet Recommendation  (6 Weeks) | LLM Fine-tuning | Prepare combined dataset for training (original data + processed data + expert-moderated data) | 3 weeks |
| --- | --- | --- | --- |
|  |  | Configure LLM fine-tuning process (specifying training parameters and objectives) |
|  | Personalized Diet Recommendation | Develop user interface for inputting patient information (weight, height, BP, conditions, preferences) | 3 weeks |
|  |  | Integrate LLM with RAG system for recommendation generation (utilizing fine-tuned LLM and KG access) |
|  |  | Present personalized diet plans (visually appealing interface with clear instructions) |
|  |  | Implement user feedback mechanism (optional: allowing users to provide feedback on recommendations) |
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