

Early Epidemic Detection

AN INFERENCE ENGINE

Saradindu Sengupta

Ayon Saha

Team: ClassifAI



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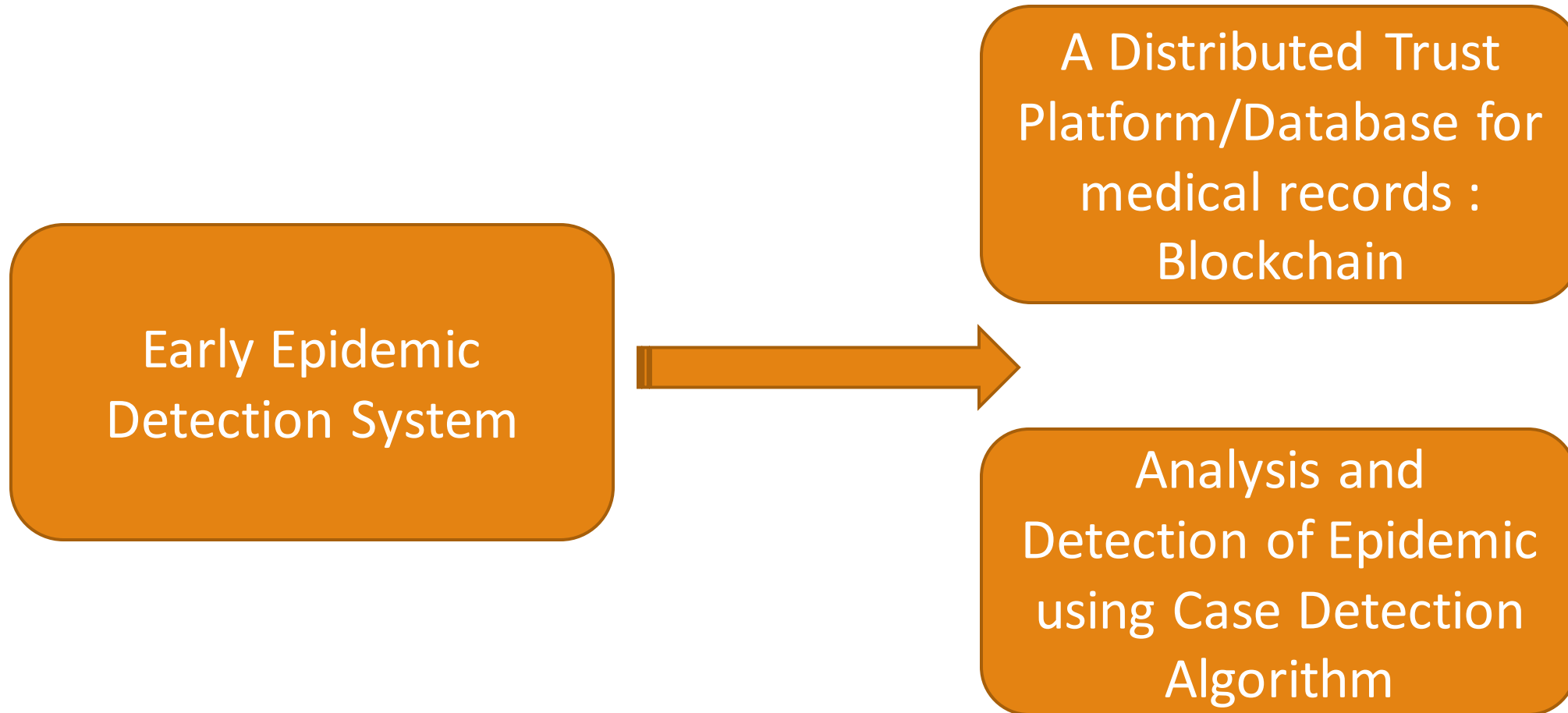
Introduction

Current Situation

- Medical Record's data is scarcely stored or shared among different stake holders securely or insecurely
- No framework in place for finding patterns in patients' medical record
- No surveillance system in place for epidemic detection as a result

Introduction

Approach



Experiment Design

Part I

- Create a trust platform to share the sensitive medical records concerning all stakeholders verified by user timestamp and signature provided access by a private key.

Experiment Design

Part II

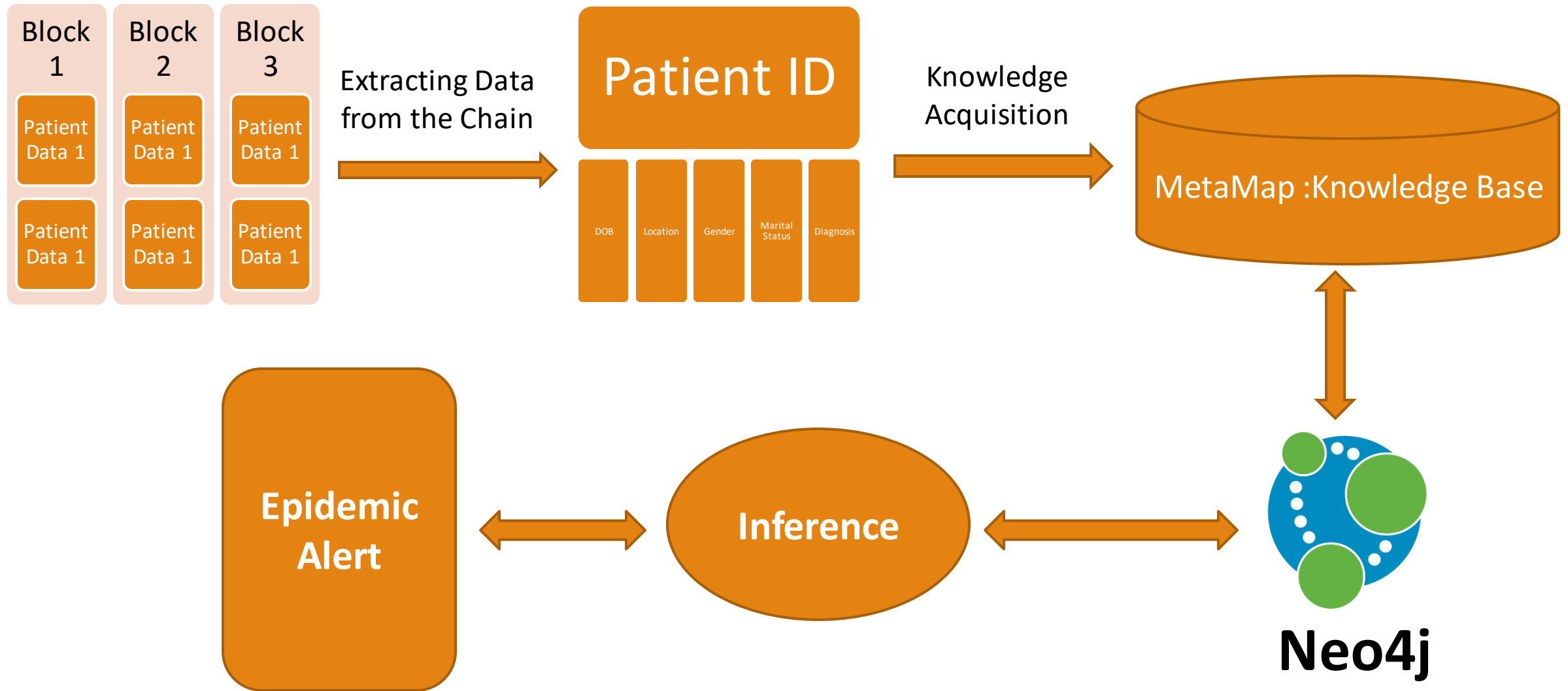
- Staging data in a suitable format from the blockchain into a raw textual tubular format containing Patients Name/ID , Location, Diagnosis analysis, Age , frequency of admission
- The raw text then cleaned , stop-words removed and tagged and then lemmatised for which to be fed to MetaMap.
- MetaMap is used to extract **UMLS** [Unified Medical Language System Concepts.
- Extract all raw text words, semantic types with their generic Disease name extracted from MetaMap

Experiment Design

Part II

- Each word phrases are then mapped to the internal knowledge base of MetaMap [NLP framework]
- Graph database is used for creating Inference , here Neo4j
- The relations among different entities explaining the relationship are then mapped in the database and an interactive web interface shows the varying relation among them
- The interface handles visualization of the results based on different entities.

Workflow Diagram



Thank You