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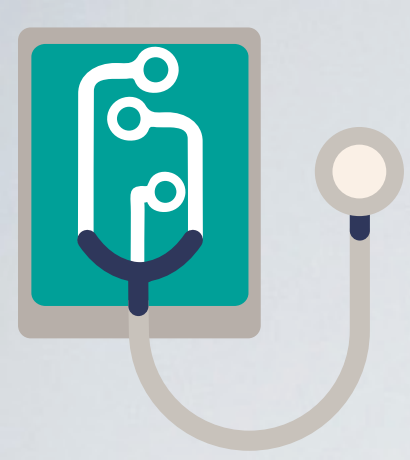
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MANAGING HEALTHCARE IN HOSPITALS USING UBIQUITOUS COMPUTING CONCEPTS

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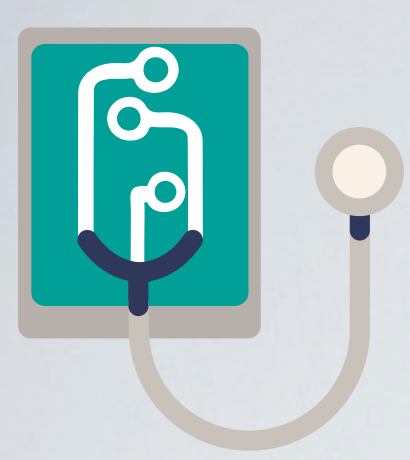
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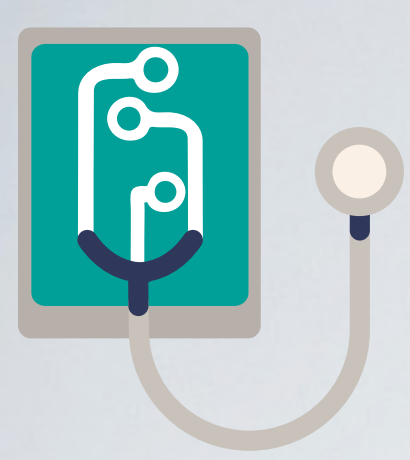
AGENDA

- Motivations
- Background
- Problem Definition
- Main Characteristics
- General View and Architecture
- Some Thesis in the scope of the project
- Conclusion and Future Work



MOTIVATION

- The Brazilian healthcare sector is inefficient in a general sense
- Invest in Information and Communication Technology (ICT) in order to improve the efficiency in hospitals.
- In Brazil only 25% of health establishments had totally Electronic Health Records (EHR)
- Internationally, 39% of physicians did not recommend the EHR they usually use to their colleges



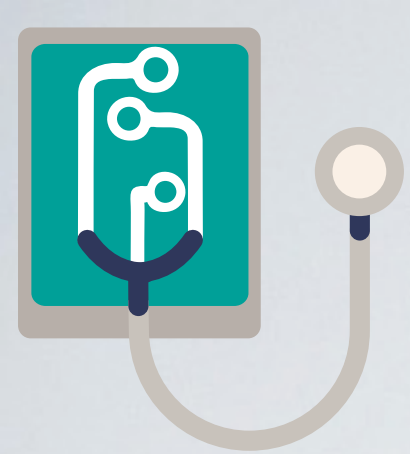
BACKGROUND



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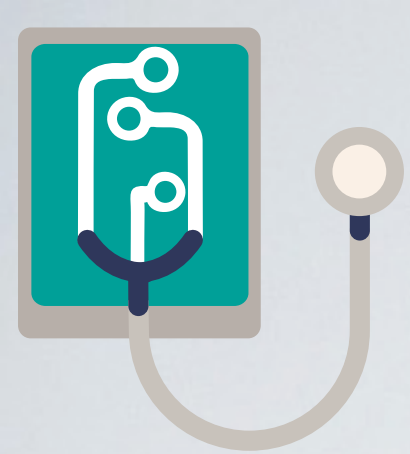
- Personal Health Record (PHR)
- Ubiquitous Health
- Ubiquitous Healthcare



PROBLEM DEFINITION

How is it possible to improve the efficiency of health management in hospitals, by storing informations in a Personal Health Record (PHR), using the concepts of ubiquitous health and ubiquitous healthcare?



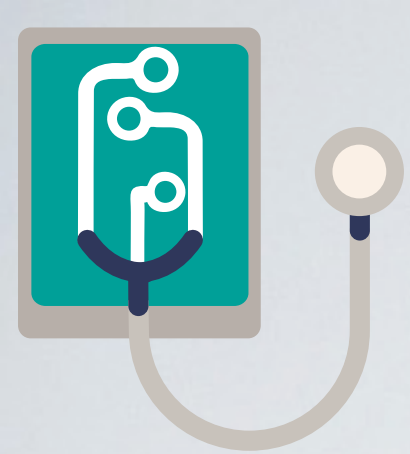


MAIN CHARACTERISTICS

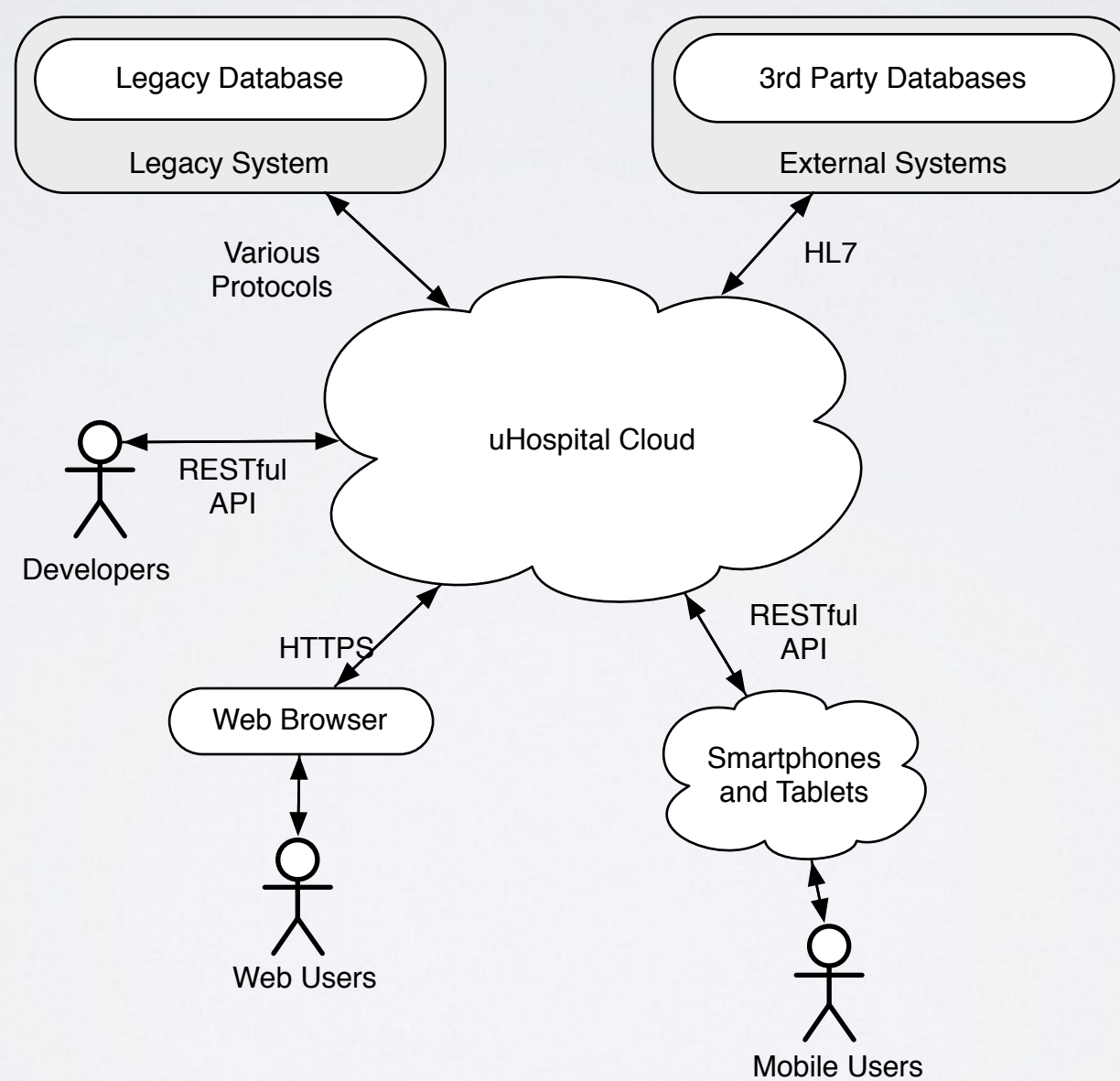
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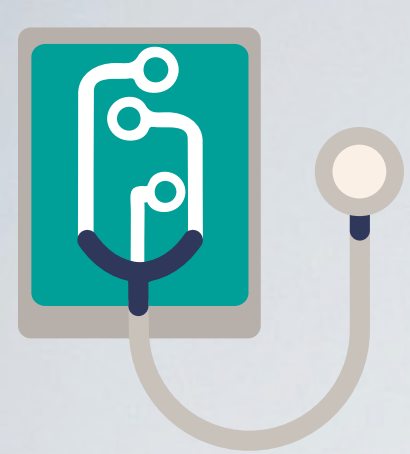
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- Mobility
- Context
- Intelligence
 - Semantic Web, Ontologies, OpenEHR
- Availability
 - HL7, ISO/TR 20514:2005 and ISO/TR 14292:2012.

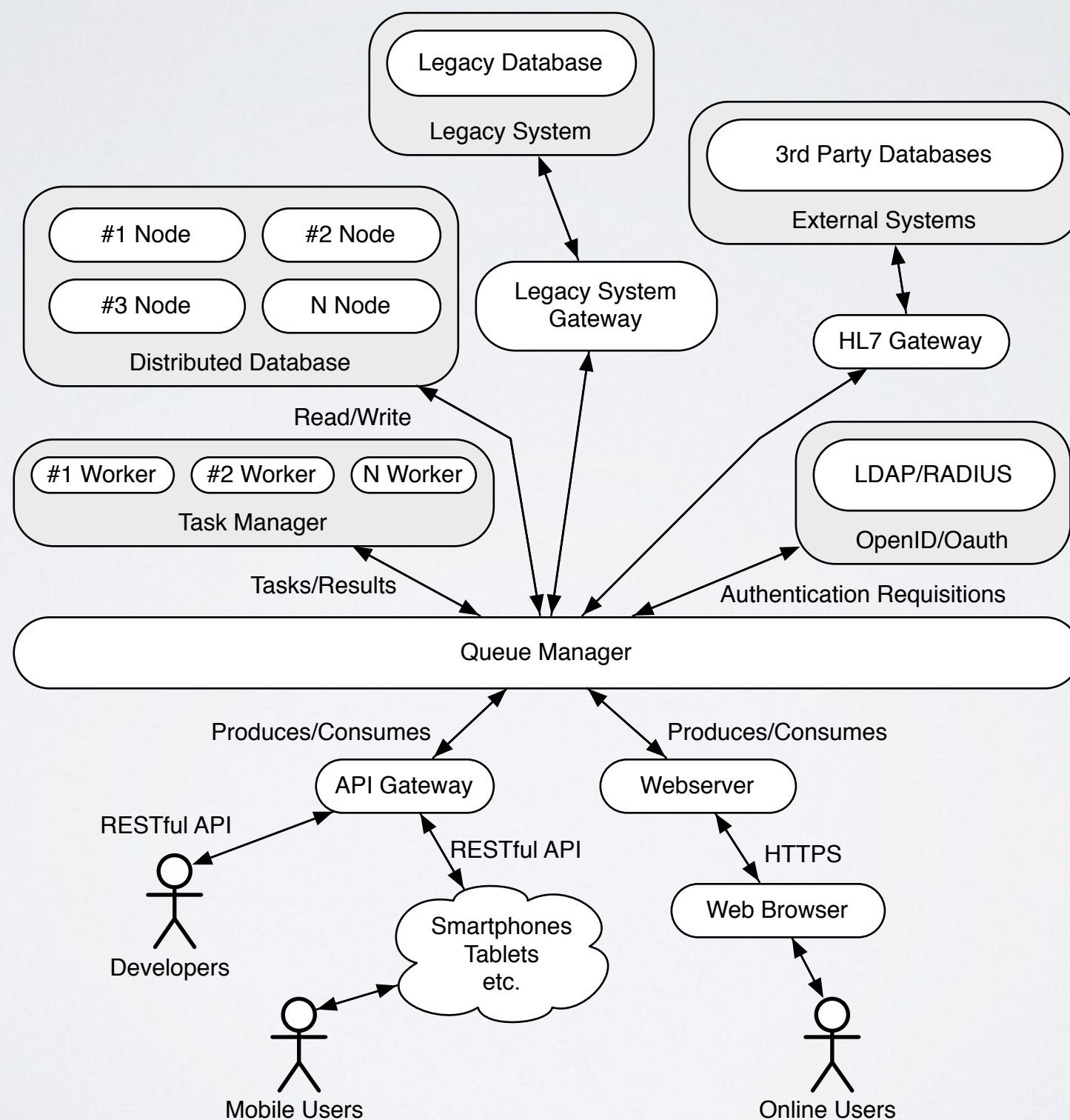


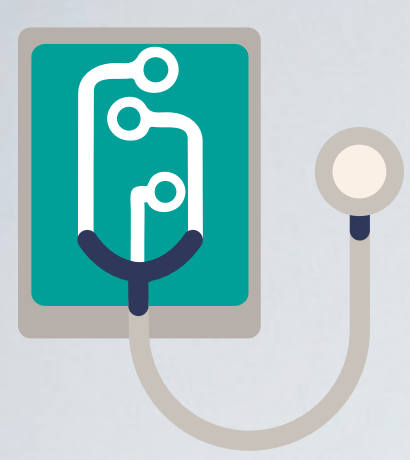
GENERAL VIEW





ARCHITECTURE

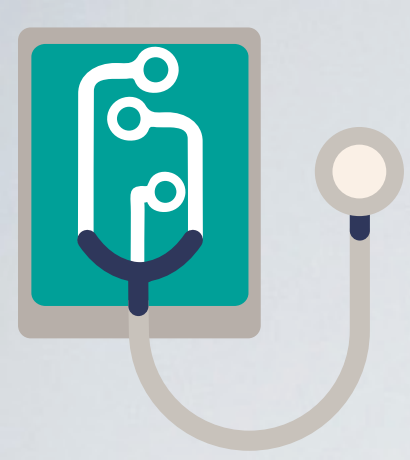




SOME THESIS IN THIS SCOPE...



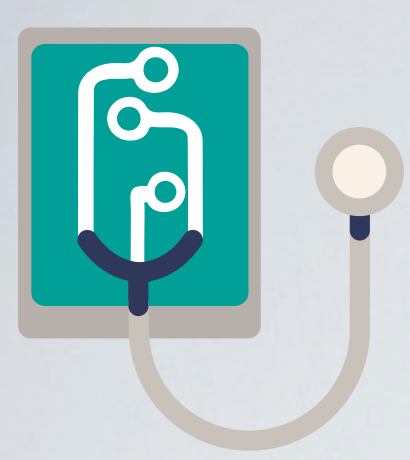
- UbHeart: a model for processing heart vital signs
- uHospital Locate: An Indoor Location-Based Services System Model for Hospitals
- Doctor Collab: A multi-level collaboration model among medical teams on duty
- PEPContextual: A context-aware Electronic Health Record



SOME THESIS IN THIS SCOPE...



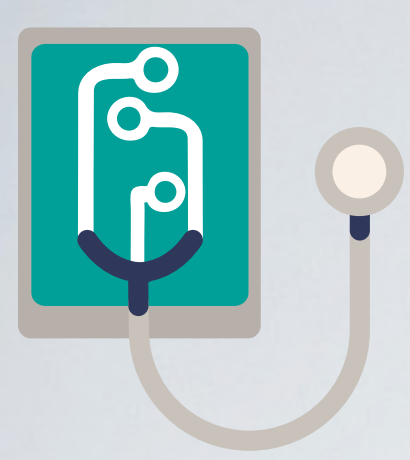
- IMBEDS: An Intelligent Service for Managing Hospital Beds using Situation Awareness
- A Proactive Model for Anticipating Rapid Response Team actions based on Predictive Analysis
- Interoperability, Nonintrusive Sensors, Big Data, Security, Privacy and others



CONCLUSION



- uHospital started in March 2015
- Many opportunities for collaboration
- **Scientific contribution:** To develop a PHR based on Semantic Web and international standards, allowing the inference of patients' risk using mobile and ubiquitous computing concepts.



FUTURE WORKS



- We are developing a prototype of a PHR service based on cloud computing
- We are creating clients for iOS and Android platforms
- Experimenting with the use of mobile and wearable sensors
- Investigating ways of detecting risks to patient's health regarding different pathologies, including heart fail, mental health and chronicler diseases



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