Interface Engine For HL7 Messaging

PROJECT SYNOPSIS OF MINOR PROJECT

BACHELOR OF TECHNOLOGY

Information Technology

SUBMITTED BY

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1.INTRODUCTION:

Health Level Seven or HL7 refers to a set of international standards for transfer of clinical and administrative data between software applications used by various healthcare providers. These standards focus on the application layer, which is "layer 7" in the OSI model. The HL7 standards are produced by Health Level Seven International, an international standards organization, and are adopted by other standards issuing bodies such as American National Standards Institute and International Organization for Standardization.

Hospitals and other healthcare provider organizations typically have many different computer systems used for everything from billing records to patient tracking. All of these systems should communicate with each other (or "interface") when they receive new information, or when they wish to retrieve information, but not all do so.

HL7 International specifies a number of flexible standards, guidelines, and methodologies by which various healthcare systems can communicate with each other. Such guidelines or data standards are a set of rules that allow information to be shared and processed in a uniform and consistent manner. These data standards are meant to allow healthcare organizations to easily share clinical information. Theoretically, this ability to exchange information should help to minimize the tendency for medical care to be geographically isolated and highly variable.

1.1 Technology used:

Programming Language:

- Python

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Integrated Development Environment:

- Pycharm

1.2 Python as scripting languages

- Ease of use
- Multiplatform development
- Availability of documentation
- Compatibility with development tool used

2.Rationale:

HL7 is offering a structured approach to build fully integrated healthcare applications, especially by defining the underlying data structure for storing and interchanging healthcare data, it helps. Much as the Electronic Data Interchange (EDI) standards have done for commercial data.

Moreover, the standards explain how data must be packaged for the communication purpose between HL7 compliant applications. It bounds the data interchange across a variety of stakeholders like centralized healthcare data repositories, mass healthcare installations, including hospitals, and specialized clinical experts.

3.OBJECTIVES:

3.1 To converting XML format to HL7 Version 2.x medical messages ER7(Encoding Rules 7) standard format.

3.2 Expedites medical information systems to communicate to the other health related systems.

4.Literature Review:

- **https://www.youtube.com/watch?v=ZAgdYR1rmEQ**
- **https://www.researchgate.net/publication/261351945_HL7_FHIR_An_agile_and_RESTful_approach_to_healthcare_information_exchange**

5. FEASIBILITY STUDY:

HL7 offers standards for interoperability. This further improves care delivery, reduce ambiguity, optimize workflow, and also enhance knowledge transfer among all of our stakeholders. Here stakeholders, include government agencies, healthcare providers, the vendor community, fellow SDOs & patients.

As in all of our actions, we exhibit timeliness, and technical expertise even without compromising accountability, transparency, practicality, or our willingness to put stakeholder's requirement at first.

Global standards help health services providers to:

- Improve & assess upon their quality of health services
- Regulate the type of care that should be offered and also identify gaps in their current systems
- Improve safety in the workplace
- Regulate efficiency

6.METHODOLOGY:

- By parsing HL7 message structure, using HAPI as a supportive toolkit and based on Python Language. Which converts the simple data into HL7 messages for accomplishment of medical information exchange.

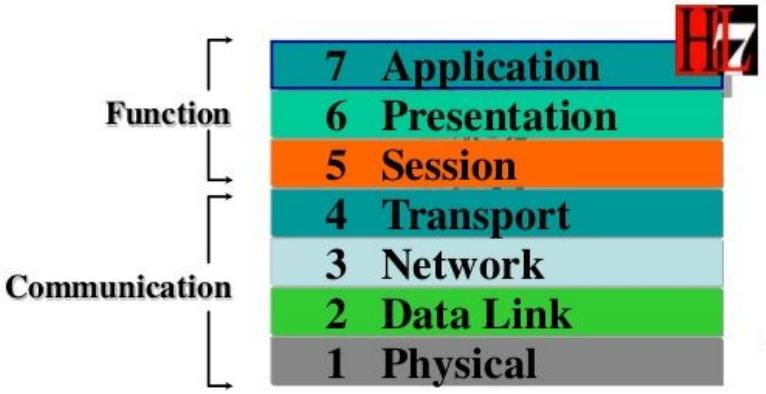
Tkinter is Python's de-facto standard GUI (Graphical User Interface) package which we use in our project for the interface which takes the input related to the health care and convert into HL7 standards and data will be shared into various software applications

- *This section introduces all the major components of* **HL7apy.**

overall architecture of the library:

It is composed by two utilities scripts, that generate python modules for every HL7 v2 minor version (XSD Parser) and serialized files for message profiles usage (Message Profiles Parser), and by the inner components that create and manage messages (Core classes), parse ER7-encoded messages (Message Parser) and validate messages (Validator).First we will introduce the utilities that are provide with the library then, we will explain its inner components.

7. Model Of HL7



8.EXPECTED OUTCOME

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9.REFERENCES:

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