Peer Testing #1 Demo Video script:

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3 Functions to be demonstrated:

1. DICOM imaging transferred between modality and PACS + can be deleted from PACS
2. Assigning UUID
3. Randomized patient name (For now).

DICOM imaging transfer:

- The most vital and essential aspect of our project is the ability for Orthanc modalities such as CT machines and MRI machines to be able to communicate with PACS servers. The ability for the DICOM file to be successfully transferred between both ends of the Orthanc instance lays the foundation for further development and implementation of new features.
- Using Docker to set up the environment, an instance of Orthanc modality, Orthanc middleman, and Orthanc PACS is created on localhost. Orthanc modality simulates the perspective from medical imaging machinery such as CT machines

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NIGAM:

- Orthanc middleman is our anonymization worker which will process the file and send off to the PACS server
- Orthanc PACS simulates the perspective from the server side of PACS.
- *Show Orthanc Modality GUI
- Using a test DICOM file, it is first uploaded to the Orthanc modality to simulate a medical imaging machine that uploads an image to a server
- *Upload DICOM file to modality
- After selecting the generated DICOM file, the option to send the DICOM file to Middleman can be selected and executed.
- *Send DICOM file to Middleman
- Orthanc Middleman receives the file and modifies it as needed. For now, it simply generates a random name and UUID and modifies the appropriate tags. In the future, the middleman should anonymize the patient. Once the file is modified, it is automatically uploaded to the Orthanc PACS server and the file is deleted from the middleman.
- From the perspective of the Orthanc instance of PACS, we can see the DICOM file is successfully transferred to the PACS server from the middleman.
- *Show DICOM in PACS with modified tags
- GUIs and the transfer process shown is planned to be automated after the completion of the project, and is not visible or accessible by users. Instead it serves as an automated module in the TMI pipeline, the process shown is only used for demonstration of the function.

BEN:

Assigning UUID

- A key feature that is necessary for developing an anonymizing function for DICOM files is the ability to identify anonymized DICOM files without including PHI.
- Assigning a Universally Unique ID (UUID) is an important first step in anonymizing the DICOM file
- UUID allows each DICOM file to be uniquely identified without exposing PHI

Randomized patient name

- To protect a patient's PHI, a randomized name feature could be implemented to assist researchers in identifying each patient without using lengthy UUID.
- Randomized name will not be used as a key identifier for the system, however it will assist the system in comparing UUID and ensuring DICOM are correctly patched with their respective patient.