**Project Design Phase**

**Solution Architecture**

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| Date | 23 October 2023 |
| Team ID | NM2023TMID592235 |
| Project Name | Project – Alzheimer Disease Prediction |
| Maximum Marks | 5 Marks |

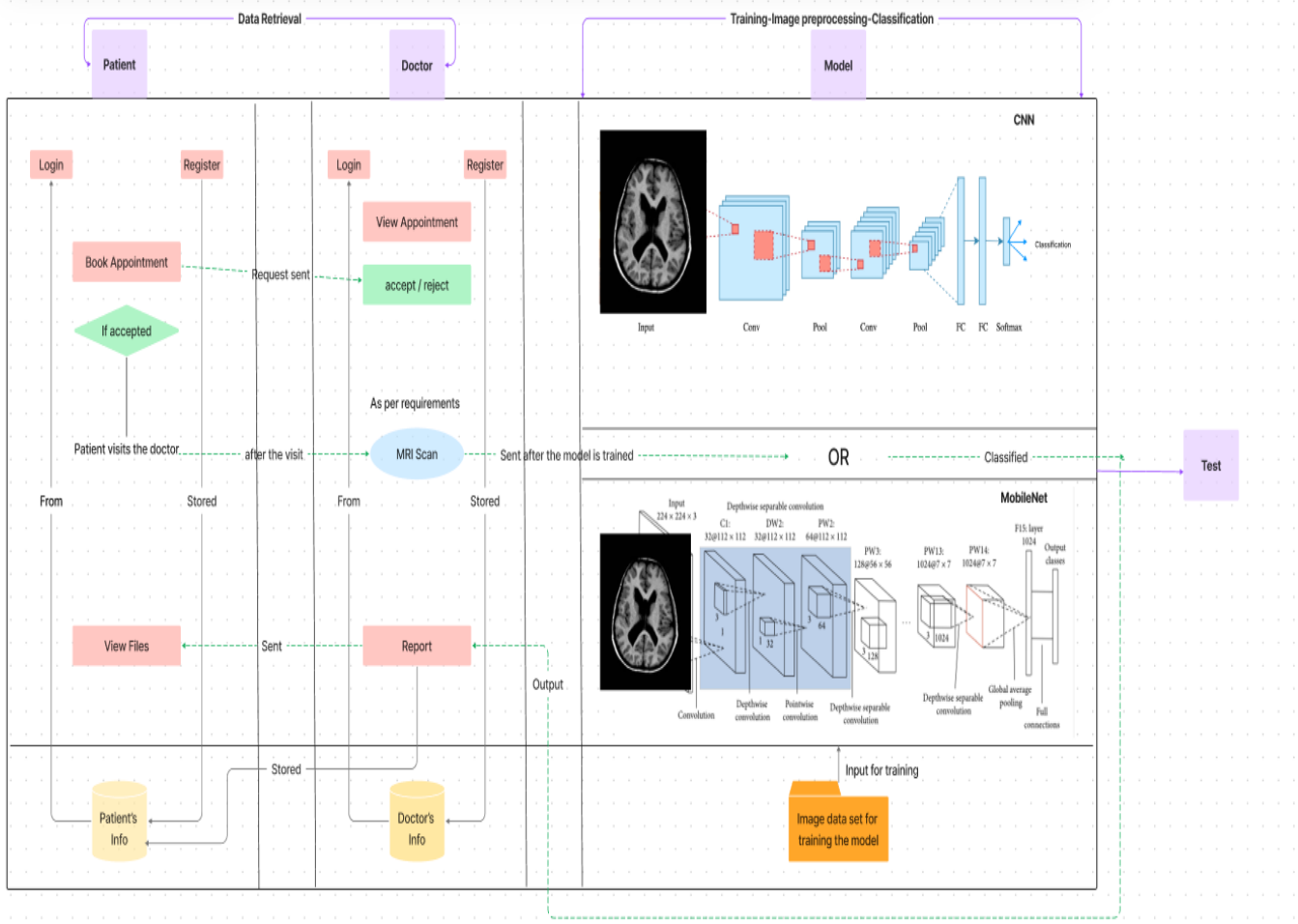
## Solution Architecture

The proposed solution architecture for our Alzheimer's Disease Prediction system is a robust and multifaceted framework crafted to address the complex challenges associated with early diagnosis and caregiving for Alzheimer's disease. It commences with an in-depth analysis of Alzheimer's detection requirements and a meticulous gathering of input from stakeholders, which includes individuals at risk, caregivers, and medical professionals. The pivotal phases of data collection and preprocessing ensure the acquisition and preparation of high-quality medical imaging data, a cornerstone for accurate prediction. This data is then meticulously processed through feature engineering and leveraged to train a deep learning model using advanced technology, such as the Xception model.

Model evaluation and selection, which are integral to our architecture, pinpoint the most effective algorithm for early Alzheimer's detection. The architecture incorporates a user-friendly web-based interface, granting secure access to the system. This interface offers an array of essential features, such as diagnostic results, educational resources, and support for caregivers. Administrators can manage user accounts, system settings, and access logs to guarantee the system's integrity and adherence to privacy standards. To maintain system efficiency and stay at the forefront of Alzheimer's research, continuous configuration and maintenance are imperative.

This solution architecture is more than just a technical blueprint; it embodies a compassionate and empathetic approach to addressing the emotional and informational needs of those affected by Alzheimer's. By encompassing comprehensive documentation and reporting, our architecture ensures a clear understanding of the system's structure, behavior, and attributes, empowering healthcare professionals and users to make informed decisions.

Our solution architecture is a holistic and forward-thinking approach to Alzheimer's disease detection, one that embraces both technological innovation and human-centered design. By aligning our architecture with the needs of our users and caregivers, we aim to deliver a solution that not only improves early diagnosis but also positively impacts the lives of those touched by this debilitating disease.


Data Retrieval
Training-Image preprocessing-Classification
Patient
Doctor
Model
CNN
Login
Register
Login
Register
View Appointment
Book Appointment
Request sent
accept / reject
If accepted
As per requirements
Patient visits the doctor
after the visit
MRI Scan
Sent after the model is trained
OR
Classified
Test
From
Stored
From
Stored
MobileNet
View Files
Sent
Report
Output
Stored
Input for training
Patient's Info
Doctor's Info
Image data set for training the model