Creative Portfolio

Presented by AKSHAY RAVI U

B.Tech Engineer

Introducing

Hello, My name is AKSHAY RAVI U. Welcome to my presentation.

About Me

Iam an B.Tech graduated candidate which should be pass out in 2023 June. I graduated in B.Tech Computer Science and Engineering from Universal Engineering College Vallivattom. After completed my degree iam enquiring each and every job according to my qualification. Able to work individually or a team. Punctual and well presented.

AKSHAY RAVI U

Vision

I am willing to understand others problems and to help them. I am willing good behaviour to other people

Creative

Portfolio

Mission

I have to work in good IT field job according to my qualification.

Education Background

My High School Education, Higher Secondary Education, Degree eduation are given here

2016-2017

S.T Joseph's EMHHS Aloor, Thrissur, Kerala. Percentage: 82

2017-2019

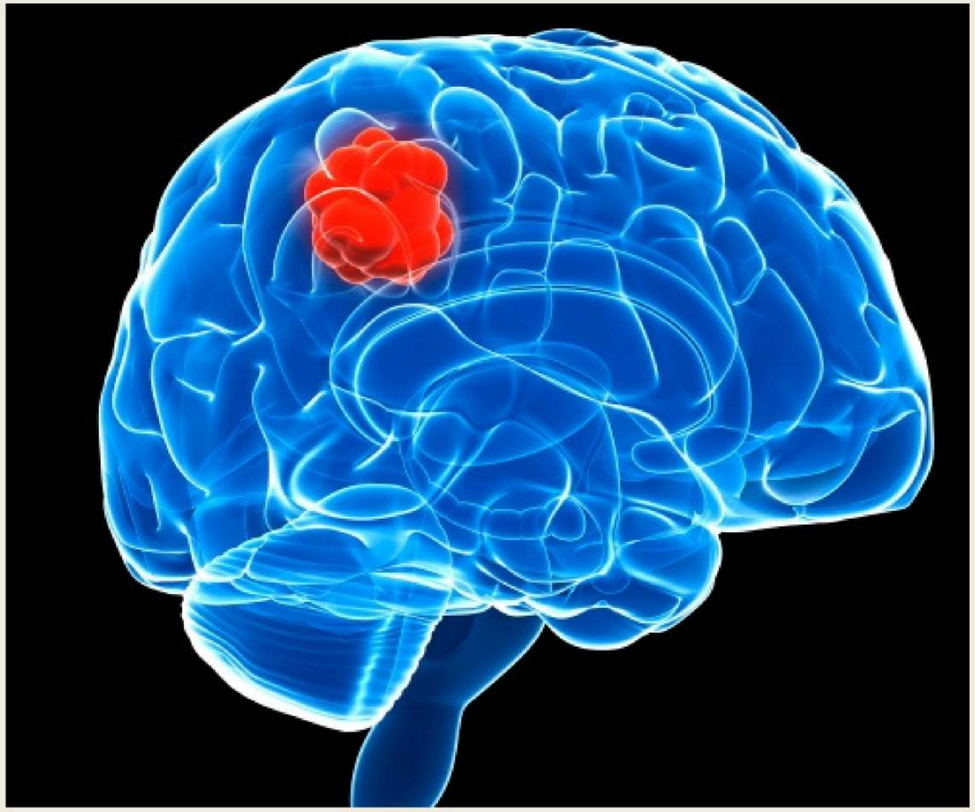
Gov Model Boys HSS Irinjalakkuda, Thrissur, Kerala, Percentage:63

2019-2023

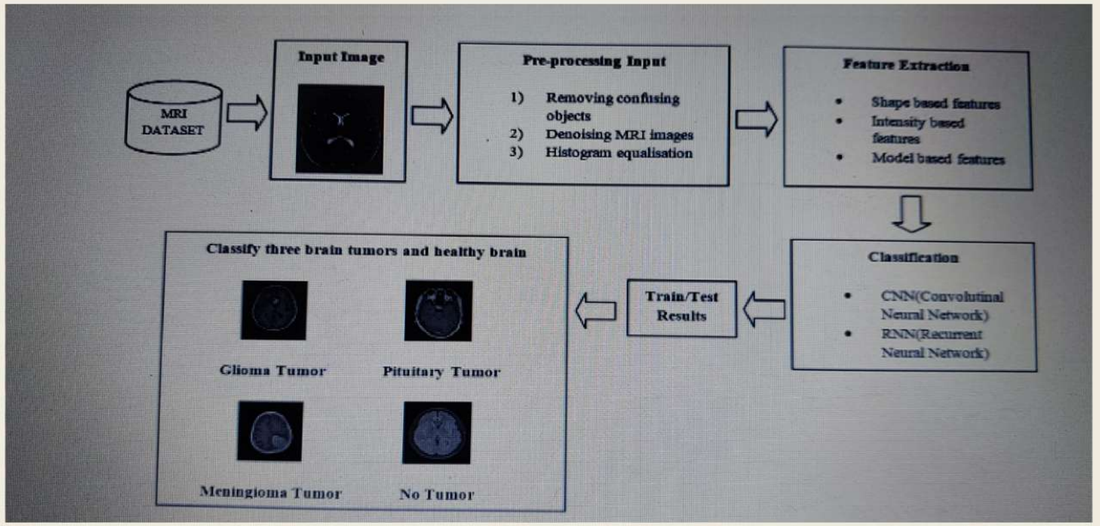
B.Tech Computer Science
At_Universal Engineering
College Vallivattom, Thrissur,
Kerala, under APJ Abdul
Kalam Technological
University, CGPA:6.3

BRAIN TUMOR - ANALYSIS AND DETECTION USING DEEP LEARNING TECHNIQUES

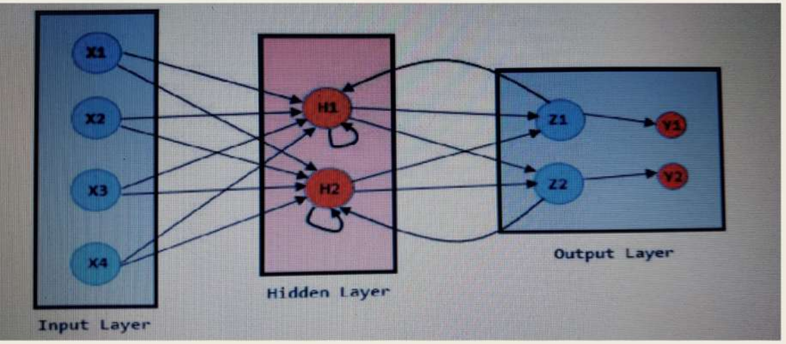
PROJECT



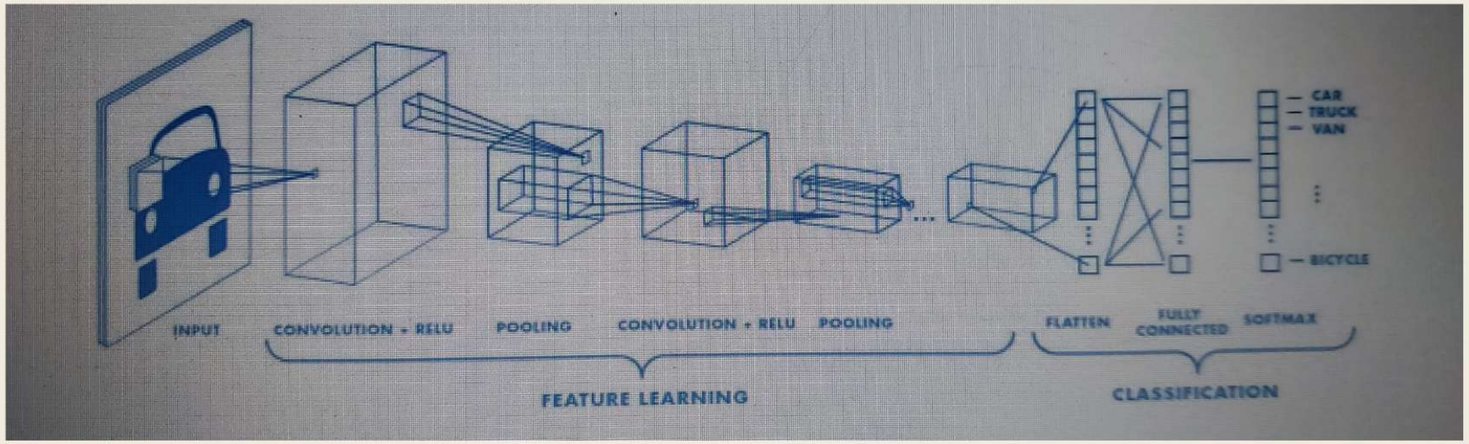
SYSTEM ARCHITECTURE



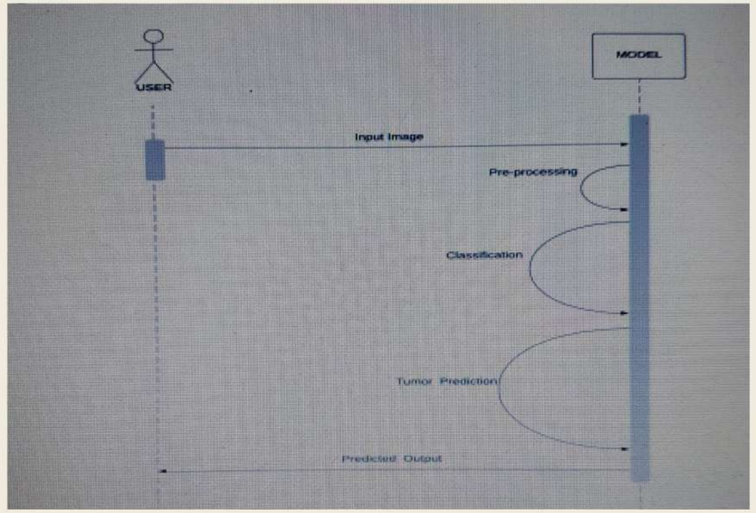
The system which consists of 3 modules. Preprocessing, Feature extraction, and Classification. First of all the input will be given as MRI image to the preprocessing. After preprocessing(remove unwanted objects, remove noise from image, improve the contrast of image). identifying and extracting the features from image. then classify the images using CNN and RNN. The output will be obtained as tumor or not. if the tumor consist there are 3 types of tumor Pituatory, Glioma, Meningioma.



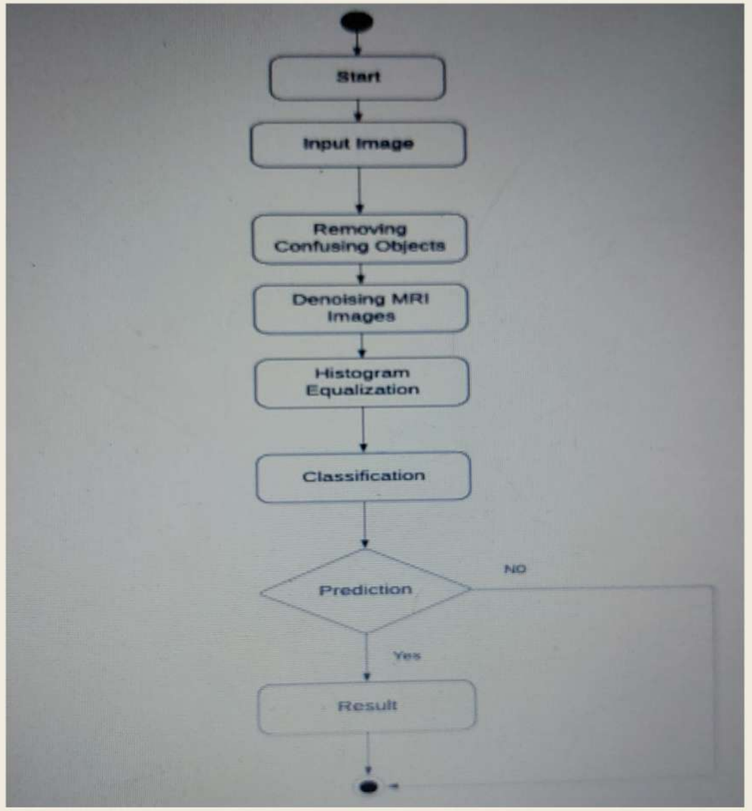
The above figure is architecture of RNN. RNN is a class of artificial neural networks where the connection between nodes can create a cycle allowing output from some nodes to affect subsequent input to the same nodes. This allows it to exhibit temporal behaviour. Derived from feed-forward neural network, RNNs can use the internal state(memory) to process variable length sequences of inputs.



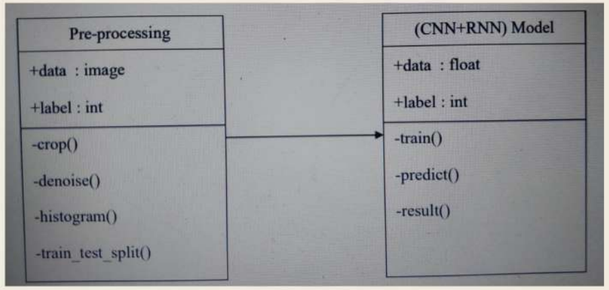
The above figure shows the architecture of CNN(Convolutional Neural Network) . CNN is a type of artificial neural network used in image recognition and processing that is specifically designed to process pixel data. CNN is always known for taking a greater number of highlights from given raw RGB picture and it is one of the best options for image processing. Using CNN , the input image data is processed by extracting both simple and the complex information from the image there by helping the system to work efficiently since image processing is the major part in the system. The objective of Convolution Operation is to extract the high level features such as edges, from the input image. Classification of images with different positions, coordinate frame are the disadvantage of CNN.



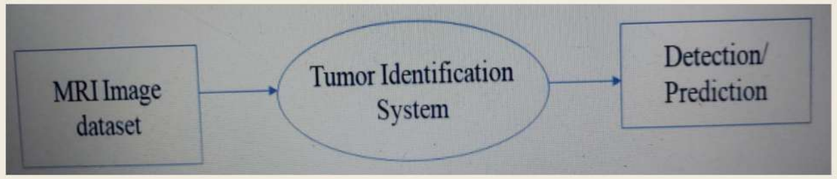
The above figure shows the Sequence Diagram. it shows object interaction arranged in time sequence.it depicts the object and classes involved in the scenario and the sequence of messages exchanged between the objects needed to carry out of the functionalities of the scenario.



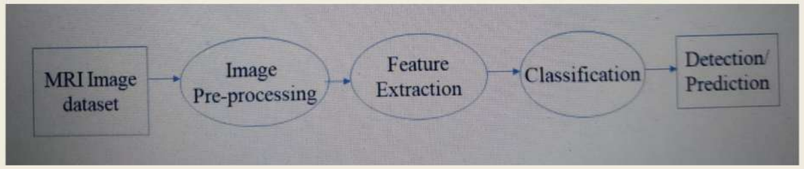
The near figure shows the Activity diagram. Activity diagram is another important in UML to describe the dynamic aspects of the system. Activity diagram is basically a flow chart to represent the flow from one activity to another activity. The activity can be described as an operation of system. The control flow drawn from one operation to another. This flow can be sequential, branched, or concurrent. Activity diagram deals with all type of flow control by using different elements such as fork, join etc.



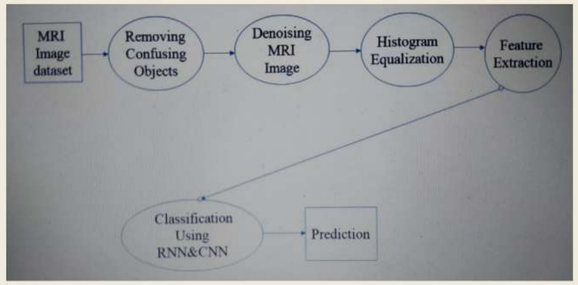
The above figure shows class diagram. The class diagram in the Unified Modeling Language(UML) is a type of static structure of a system by showing the systems classes, their attributes operations(or methods), and the relationship among objects. A class diagram looks like a flow chart where classes are represented by boxes with 3 rectangles inside each box. The class name is located in the top rectangle, its attributes are located in middle rectangle, and its methods, which are also known as operations, are located in lower rectangle. A class diagram is an UML diagram type that describes a system by visualizing the different types of objects within a system and the kinds of static relationships that exist among them. It also illustrates the operations and attributes of the classes. Class diagrams give you a sense of orientation. They provide detailed insight into the structure of our systems. At the same time they offer a quick overview of the synergy happening among the different system elements as well as thier properties and relationship.



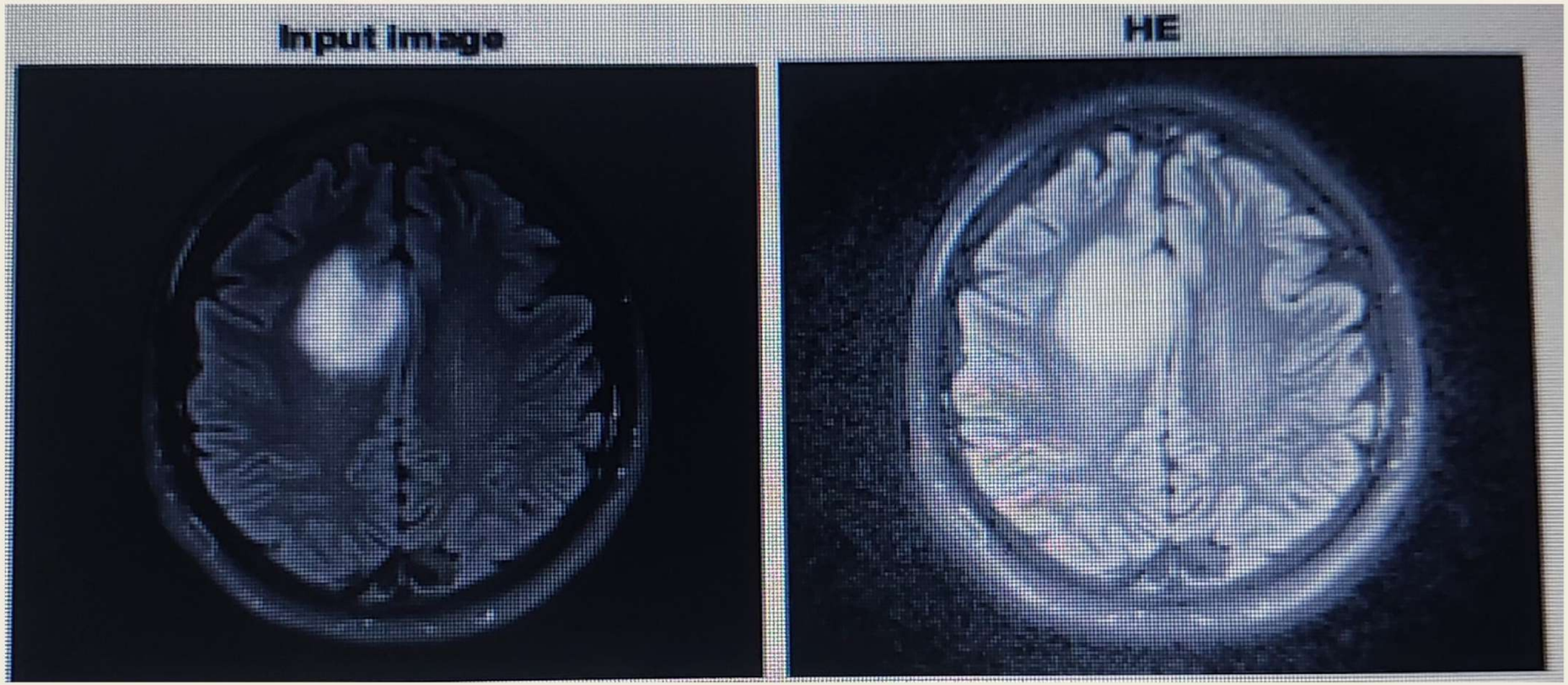
The above figure shows Data Flow Diagram Level 0. It is also known as context diagram. Its designed to be an abstraction view, showing the system as a single process with its relationship to external entities. It represents the entire system as a single bubble with input and output data. indicated by incoming/outgoing arrows. Here the system is viewed as a single process, with its relationship to external entities. Another name for it is context diagram. It is intended to be an abstraction view that presents the system as a lone process with its connections to outside entities. It depicts the complete system as a single bubble with incoming/outcoming arrows designating input and output data. In this case the system is seen as single process with connections to outside entities. Here DFD 0 level is the basic model of our system and it only describe what is model simply doing. It only shows the inputs and outputs of the model and and how it flow in simple form.



The above figure shows the Data Flow Diagram Level 1. The Level 0 DFD is broken down into more specific, Level 1 DFD depicts basic modules in the system and flow of data among various modules. Level 1 DFD also mentions basic processes and sources of information. It provides a more detailed view of the Context Level Diagram. Here the main functions carried out by the system are highlighted as we break into its sub processes. Here, perform image preprocessing on MRI image. Then perform feature extraction. The combined architecture(RNN+CNN) is used for classification. After that model predicted result.



The above figure shows DFD level 2. The level 2 data flow diagram(DFD) offers a more detailed look at the processes that make up an information system that a level 1 DFD does. It can be used to plan or record the specific makeup of system. In here chat module is decomposed into encryption, decryption processes and socket process. The encryption process encrypts the message to be communicated with other clients in the chats while the decryption process decrypts the incoming messages. AES based encryption is used here. Here the preprocessing contain three step process include removing confusing objects, denoising MRI images, histogram equalization. Then extract the features from MRI images based on shape, intensity and model. The combined architecture(RNN+CNN) used for classification. The features from MRI images pass to the trained model after loading at, and it will be predicted as no tumor, meningioma, pituitary, glioma.



The above figure shows the Histogram equalization. From the above figure we can see that the input image is given. and after that the we can see that the what happens when input image is given to histogram equalization. Histogram is a graphical representation of the intensity distribution of image. In simple terms, it represents the number of pixels for each intensity value considered. Histogram Equalization is a computer image processing technique used to improve contrast in images. It accomplishes this by effectively spreading out of most frequent intensity values, ie stretching out the intensity range of the image. This method is usually increases the global contrast of images when its usable data is represented by close contrast values. This allows for area of lower local contrast to gain a higher contrast.

OUTPUT

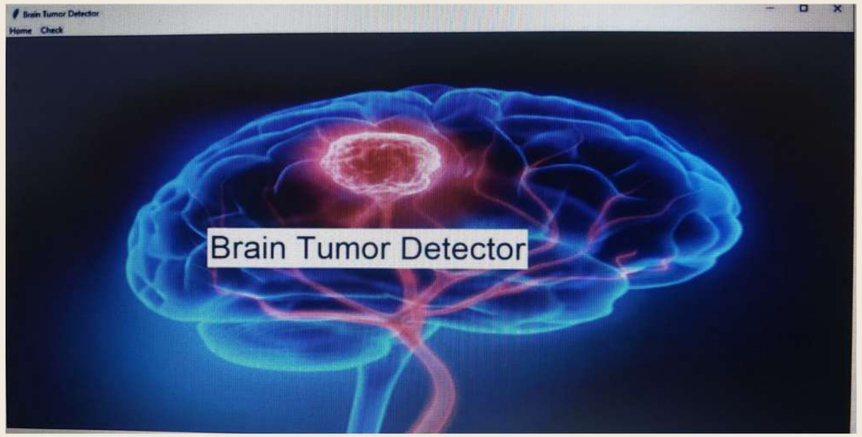


Figure 1: Home Page

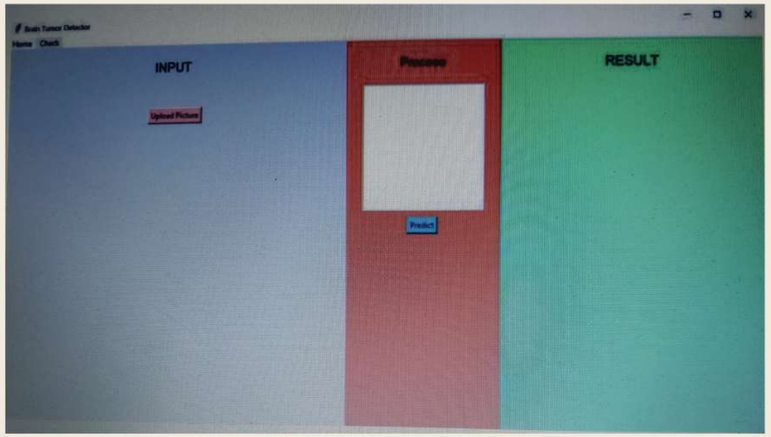


Figure 2: Selecting Image Using Check button

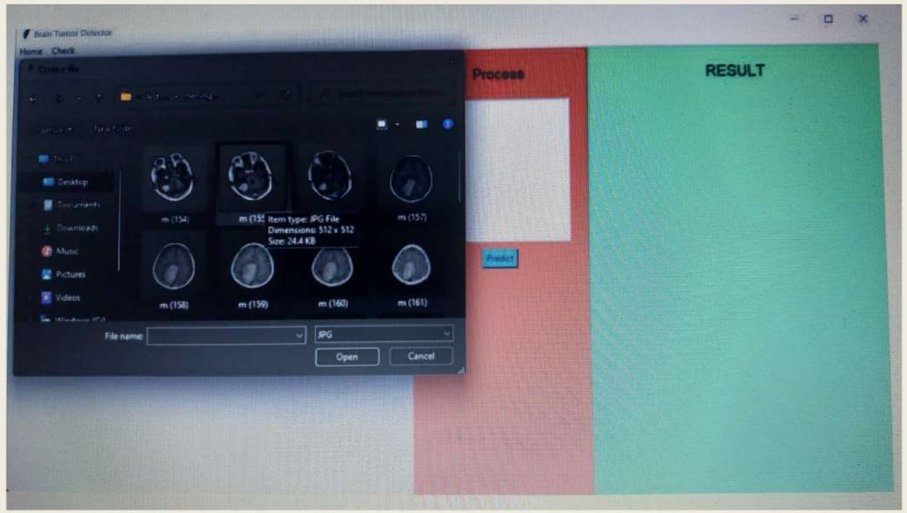


Figure 3: Selecting Image

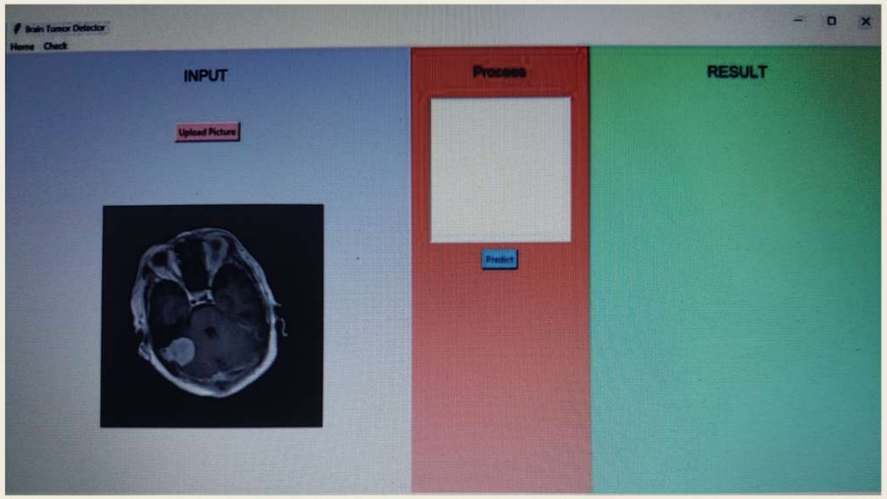


Figure 4: Image Uploading

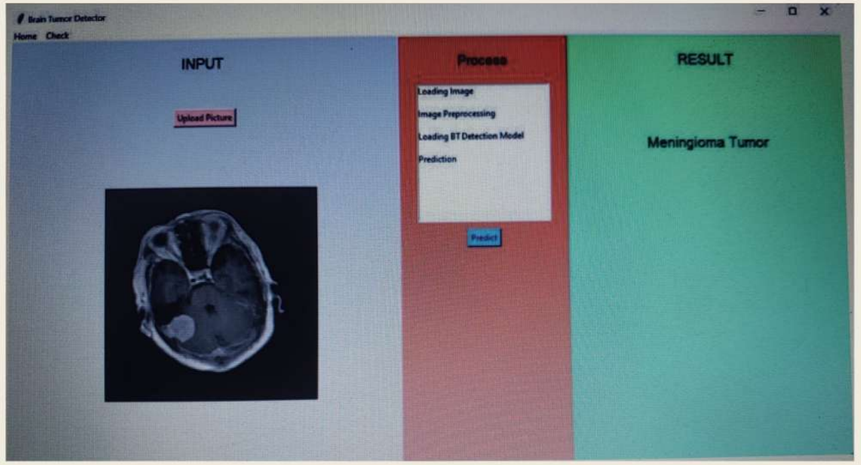


Figure 5: Meningioma Tumor

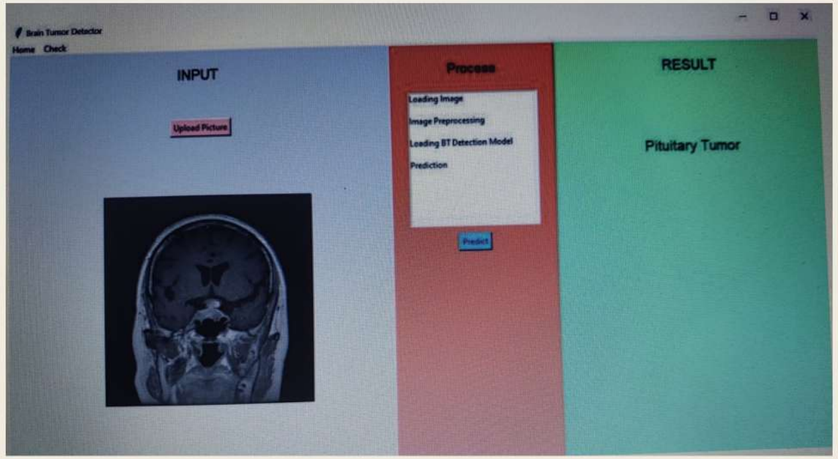


Figure 6: Pituitary Tumor

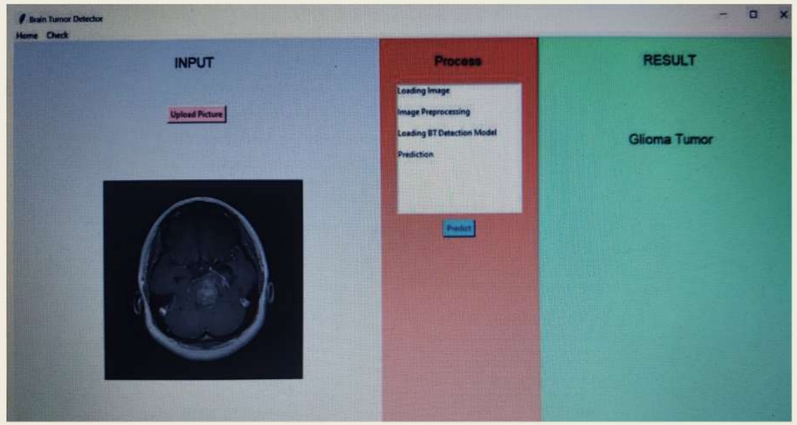


Figure 7: Glioma Tumor

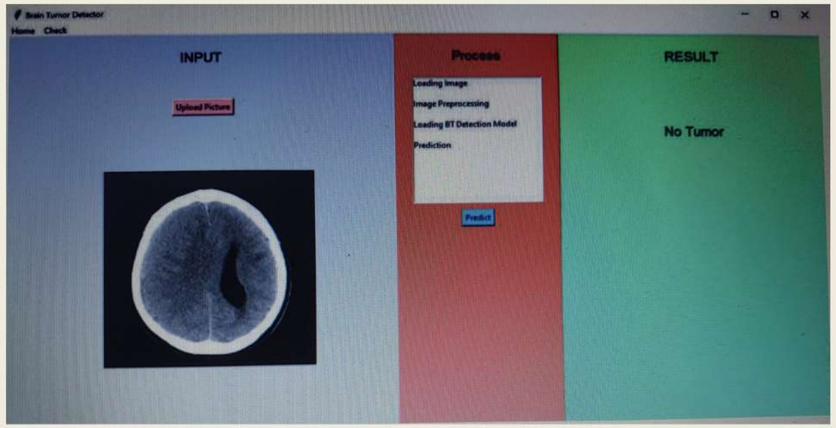


Figure 8: No Tumor

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