**brAIniac Solution Steps**

Start

Download the BRISC dataset

Unzip the folder to the inner folder named “brisc2025”

Store this folder on your downloads folder on your local computer

Make sure the folders are sorted in alphabetical Ascending order

**Read the data**

Create constant variables to fetch directory and class paths of data files

BASE\_DIRECTORY, TRAIN\_DIRECTORY, TEST\_DIRECTORY

Create a list to house the class names to store the names of each folder in alphabetical order. The index will basically be used to map what class the images are from

CLASS\_NAMES

Read the data in the folders in train directory through the four different folders – use nested for loop to unpack the images into a list containing a dict

train\_data

Read the data in the folders in test directory through the four different folders – use nested for loop to unpack the images into a list containing a dict

test\_data

Prepare the images

Create a variable in constant fashion for resizing the images in each folder and store in a tuple. Because we are going to use 2 models(CNN v ResNet) – ResNet was trained on size 224 by 224

IMAGE\_SIZE

Create a variable in constant fashion to store the number of images the AI will train on per round. 32 is common

BATCH\_SIZE

Resize train images to the IMAGE\_SIZE

Normalize pixel values which typically range from 0-255 to 0-1 because Neural networks perform better with smaller numbers and to avoid AI learning bias towards larger values which can cause inaccuracies in predictions if not normalized

Apply Augmentation of the images on train\_data such as flips, rotations, zooms and shifts

Load the train images in batches and shuffle them so the AI doesn’t learn from the same sets of batches every time