The proposed work gives a method of cancer diagnosis using artificial intelligence. The method involves the use of MRI images which are processed and segmented before the display of the tumor portion. The tumor portion will be having a denser background as compared to the general image; this has been set up in our algorithm. Some image enhancement and noise reductions are done to enhance the image quality, after that some morphological operations are applied to detect the tumor in the image.

**RESULT**

Prewitt operator, Sobel operator and Roberts Cross operators are used along with fuzzy logic to determine the more intense nature and extract the particular area of target more efficiently. An algorithm is designed that uses the above technologies and gray white scale, RGB scale to determine the "tumor" successfully and at a decent pace.

**Fig 1. Steps used for Cancer Diagnosis**

Sobel operator is based on convolving the image with a small, separable, and integer valued filter in horizontal and vertical direction and is therefore relatively inexpensive in terms of computations. It uses the image intensity gradient function to depict the outputs, which may have irregularities in the image. Roberts cross operator is to approximate the gradient of an image through discrete differentiation which is achieved by final sum of the squares of the differences between diagonally adjacent pixels. Fig. 3 shows the results achieved using above 3 operators.
CONCLUSION

The proposed work aims to detect cancerous cells by the help of MRI scan images, and is moving in the right direction. Through MATLAB the images are segmented and analysis is done.

References


