**INTRODUCTION**

A tumor is any mass caused by the abnormal or uncontrolled growth of cells inside living organisms. Different types of tumors are there according to the size, position and growth of the cells inside human body. Tumors present inside human brain are known as brain tumor. Brain tumor accounts for 85% to 95% of all the primary Central Nervous System (CNS) tumors. As they are dangerous and can cause death, they should be detected as early as possible and should be diagnosed. There are several methods available for capturing and diagnosing the affected area. Computer Tomography (CT) scan, Neurological examination, Magnetic Resonance Imaging (MRI) scan, Spinal tap, Biopsy etc. are some of them. MRI can capture the affected area inside human brain more clearly than CT scan as it is suitable for soft tissues, ligaments or organs. Brain tumor is one of the leading causes of deaths related to cancer in many of the countries. Also it is the second leading cause of deaths, related to cancer, in children under the age of 20 as well as males of age 20 to 29. The five year survival rate means what percentage of people live at least five years after detecting the presence of tumor inside their body. The five year survival rate for people with cancerous brain is almost 36%. The five year survival rate of patients under the age group of 15 is greater than 74%, that in between 15 to 39 years is about 71% and that of greater than 40 years is about 21%. The ten year survival rate means what percentage of people live at least ten years after detecting the presence of tumor inside their body. The ten year survival rate is almost 31%. Survival rate decreases with increase in age. Also it may vary widely depends on several factors like age, food intake, adaptation, etc. There are several methods available for brain tumor detection and classification based on deep learning (DL) technology. So many pre-trained classification models like Alexnet [1], VGGnet [2], Googlenet [3], Squeezenet [4], ResNet [5], Inception [6], Xception [7], etc are also available. In [8], Palash Ghosal et al. discussed about brain tumor classification system using ResNet-101 model. They classified tumor area into three different classes like Glioma, Meningioma and Pituitary tumor and got an overall accuracy of 93.83%. In [9], Rajat Mehrotra et al. proposed a comparative approach for brain tumor classification as benign and malignant based on transfer learning techniques. They have used five unique DL models like AlexNet, GoogLeNet, ResNet-50, ResNet101, and SqueezeNet. They got an overall accuracy of 99.05% for a dataset consists of only 696 MRI images. In [10], Prayash et al. did a comparative study of ResNet50, VGG-16 and Inception-v3 and proved that ResNet50 outperforms all others. They got an overall accuracy of 95% for ResNet-50 model. But they have used a dataset containing only 253 images. In [11], Ahmet et al presented a network created from ResNet50 and compared it with the existing models like Alexnet, Resnet50, Densenet-201, Inception-v3 and Googlenet. They got an accuracy of 97.2%. According to the literature, ResNet-152 is more accurate than other ResNet models. So we are proposing retrained models, created via the method of transfer learning, from different versions of ResNet. The main contribution of this work is to make use of existing classifiers like ResNet and its variants for brain tumor detection purpose via classification with more than 10000 images. The section 2 describes the proposed networks for brain tumor detection followed by the implementation of them in section 3. The section 4 explains the results obtained with