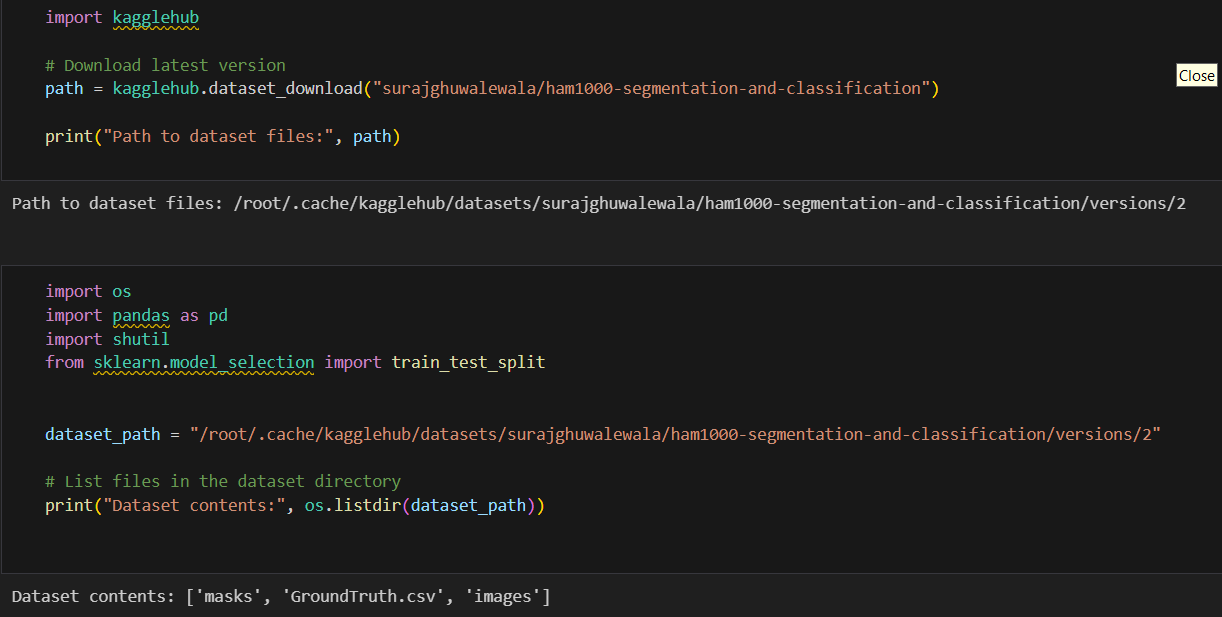
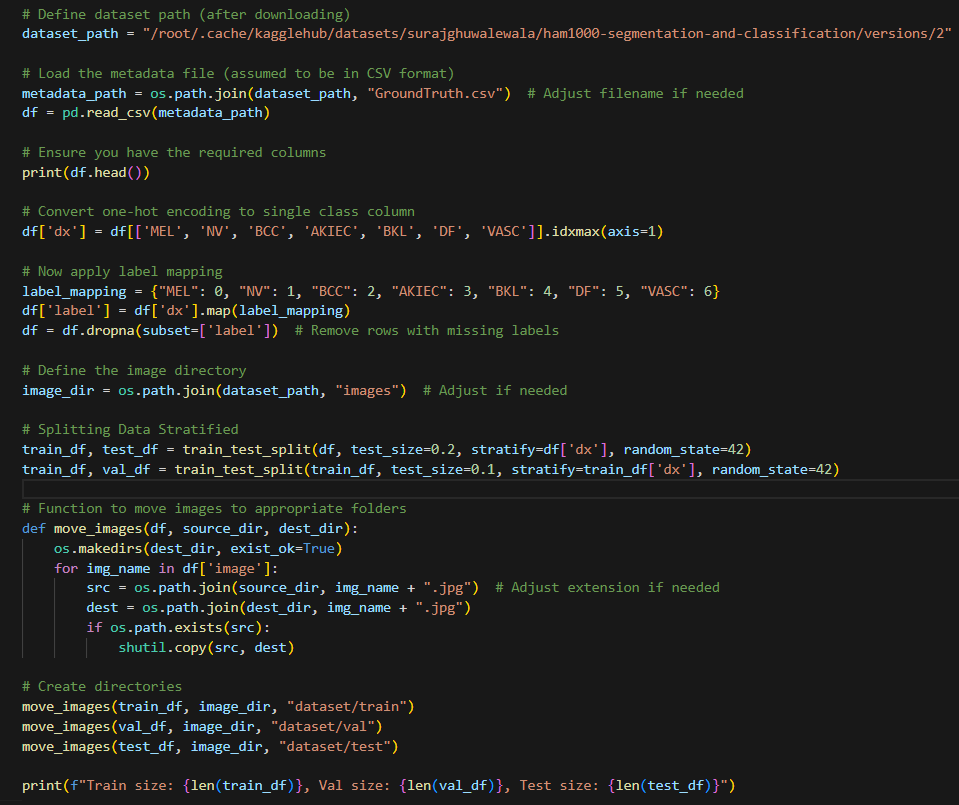
Pattern lab1

## Done By: Ahmed Nasser – 8350 Baher Ahmed Hosny – 8165

**Part1:**



A black screen with white text

AI-generated content may be incorrect.Notes:

* Downloaded dataset using Kaggle
* Add labels to the data
* Split them evenly using stratify
* Move data to train, validation, and test folders.

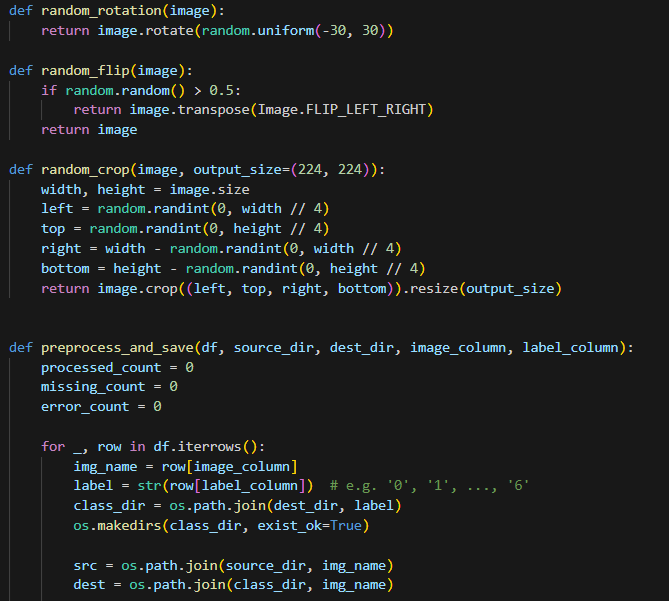
**Part2:**

A screenshot of a computer program

AI-generated content may be incorrect.

A computer screen shot of text

AI-generated content may be incorrect.



A screen shot of a computer program

AI-generated content may be incorrect.

Notes:

* First remove duplicate entries from each folder with each other
* Remove repeated patient ID’s in different folders
* Move each image according to split and verify if its corrupt, if so add to corrupted\_images array.

**Part3:**

**A computer screen shot of code

AI-generated content may be incorrect.**

**A computer screen shot of text

AI-generated content may be incorrect.**

**A screen shot of a computer program

AI-generated content may be incorrect.**Notes:

* Use ResNet18 which is a CNN architecture which is implemented using pytorch.
* We check parameters are less than 60 million and display them
* Print a confusion matrix and display recall and F1 score

**Part4:**

**A screen shot of a computer program

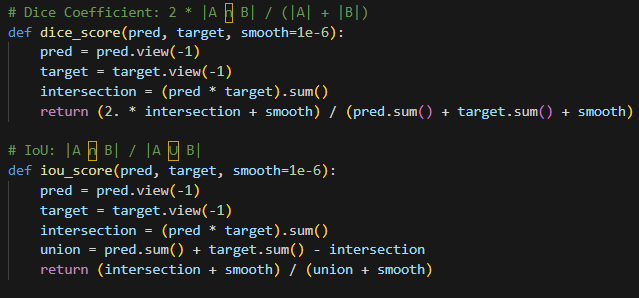
AI-generated content may be incorrect.**

**A screen shot of a computer program

AI-generated content may be incorrect.**

A computer screen shot of a program code

AI-generated content may be incorrect.

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A screen shot of a computer program

AI-generated content may be incorrect.

Notes:

* Used a UNET architecture for segmentation
* Read images and masks from folders and applies some transformations for preprocessing and augmentation.
* Training and validation done and calculate effectiveness of model using IoU (Intersection over Union) and Dice coefficient.

**Images:**