ISIC challenge datasets are available for open access at https://challenge.isic-archive.com/data. Folder shall be taken according to the roll number mapping mentioned at the last of this document. The folder contains 20 dermoscopic lesion images in .jpeg format and its associated segmentation binary mask in .png format.
The data folder can be downloaded from:
https://drive.google.com/drive/folders/1YfdxR62Th0XwPsMIXi0zrxV6sGAkB00b?usp=sharing

Note: For all parts, code in MATLAB and summarize your observations and results in a document, illustrate the code pipeline through flow chart and pseudocode and submit the code and summary document as one zip file.
To avoid confusion in the code execution sequence, you can attach a readme file in .txt format, if required.
Try to submit the assignment on or before 14th October 2020, 11.59 PM. Late submissions will be accepted till 17th October 2020, 11.59 PM with 1.5 marks (out of 10) as penalty.

Part 1: Use histogram-based approach to assign the class label for the given images
Part 2: Apply graph cut method to optimize the delineation of the lesion from the background using minimization algorithms: alpha-expansion and alpha-beta swap.
Part 3: Compare the segmentation results with the ground truth using metrics [1] like accuracy, Dice similarity coefficient, Jaccard index (JAC), sensitivity, specificity.

References:

1. Ahmed Refaat Hawas, Yanhui Guo, Chunlai Du, Kemal Polat, Amira S. Ashour, OCE-NGC: A neutrosophic graph cut algorithm using optimized clustering estimation algorithm for dermoscopic skin lesion segmentation, Applied Soft Computing, Volume 86, 2020, 105931, ISSN 1568-4946, https://doi.org/10.1016/j.asoc.2019.105931. (http://www.sciencedirect.com/science/article/pii/S1568494619307124)
2. V.R. Balaji, S.T. Suganthi, R. Rajadevi, V. Krishna Kumar, B. Saravana Balaji, Sanjeevi Pandiyan, Skin disease detection and segmentation using dynamic graph cut algorithm and classification through Naive Bayes classifier, Measurement, Volume163, 2020, 107922, ISSN 0263-2241, https://doi.org/10.1016/j.measurement.2020.107922.

Roll No.	Folder name
AM19D042	1
AM19M031	2
ED16B010	3
ED16B046	4
ED17B009	5
ED17B018	6
ED17B019	7
ED17B020	8
ED17B021	9
ED17B022	10
ED17B023	11
ED17B028	12
ED17B031	13
ED17B034	14
ED17B040	15
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ED17B056	21
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ME17B168	28
ME17B179	29
ED17B006	30
AM19D037	31
ED20S010	32