AMERICAN UNIVERSITY OF ARMENIA
College of Science and Engineering
CS 260 / 371 Image Processing

HW3

Deadline:	Saturday, August 03 2024, no later than 22:00 **SHARP**
Textbook:	W. Burger, M. J. Burge. "Digital Image Processing: An Algorithmic Introduction using Java", 2nd ed., 2016
Reading:	Chapter 5. Filters; Chapter 6. Edges and Contours; Chapter 9. Morphological Filters; Chapter 10. Regions in Binary Images

Task 1: Using concepts, tools, commands, methods from **Chapters 5**, **6**, **9** and **10**, suggest an algorithm for automatic oval selection in the binary masks from **Task 1** of **HW2**. Compare the algorithm with the manual oval selections saved in **Ovals Manual 11** worksheet of the **RGB.xlsx** workbook. Fill in the results of the suggested algorithm in the table in **Ovals Algorithm 11** worksheet. Upload in **\HW3** subfolder of your repository the description of the algorithm.

Bonus Task 2: Repeat **HW2** for all images indicated in **Ovals Manual 13** worksheet. Before implementing the tasks, adjust the threshold values for the (Saturation)(Brightness) product and fill in the range **B13:B14** in **Ovals Manual 13** worksheet. Save the numeric results in **Ovals Manual 13** and **RB(G) 13** worksheets, and the images – in **\HW3\mask** and **\HW3\face** subfolders of your repository.

Submission Conditions:

1. This is an individual assignment. Identical or similar submissions / files / results / reports / diagrams etc. will be disqualified – both the source(s) and receiver(s) will collect 0 point.
2. Group work will be accepted only if all group members are explicitly indicated in the submission. The individual contribution of each group member must also be explicitly stated, including all reasons of forming the group.
3. The submission deadline is rigidly strict. Submit even an unfinished work to get points and feedback. Late submissions will be disqualified and collect 0 point.
4. Not only precise solutions, but also free-format descriptions of ideas, difficulties, algorithms, simplifications, assumptions, etc. may be submitted.
5. You are welcome to use external sources, but all of them must be explicitly acknowledged and the links / references provided.