Final Examination

Course: Introduction to Digital Image Processing
Code: 505060

Rules		**- Each report is conducted by a group of one or two students.** **- The Final report consists of 2 parts: the Programming part and the Report part** **- Students who copy their friends's work will be scored 0.** **- Students who copy source codes from Internet will be scored 0.** **- If a student's work shows signs of copying each other, the student will attend an interview**
General requirements		**- Only use OpenCV & Numpy libraries**
Report file requirements		The report will include **2 chapters:** - Chapter 1: Solving methods - Chapter 2: Experimental steps and results The report follows the form of the Faculty of Information Technology.
Rubric		- Programming part to solve the topic: **5 points** - Report file: **5 points**, chapter one 3 points, chapter two 2 points
Submission		Filenames of the source code and the report files must be the **Student IDs**, for ex., o A group of only one student with student ID 521H1495 will submit a Python source file named 521H1495.py and a report file named 521H1495.pdf o A group of two students with student IDs 521H1234 and 522H4321 will submit a Python source file named 521H1234_522H4321.py and a report file named 521H1234_522H4321.pdf
Topic		**Requirements**
Retrieving the time from the photo of a clock		- **Input**: at least 10 photos containing analog wall clocks with different content (different clock types, time difference of 1-2 hours between photos, clock hands do not coincide together). - **Output**: + In each photo, draw rectangular frames surrounding the hour hand, minute hand, and second hand with different colors. Drawing rectangular frames **must be done automatically**, not manually. + in each photo, output the time as **hours:minutes:seconds**.
Traffic signs Recognization		- **Input**: at least 15 photos containing prohibition signs with different content (you can take photos from the internet or take them by yourself). - **Output**: + In each photo, draw rectangular frames surrounding the prohibition sign. Drawing rectangular frames **must be done automatically**, not manually. + In each photo, output the content of the prohibition sign.