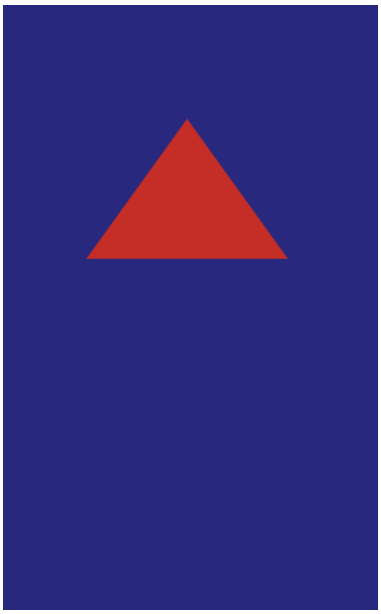
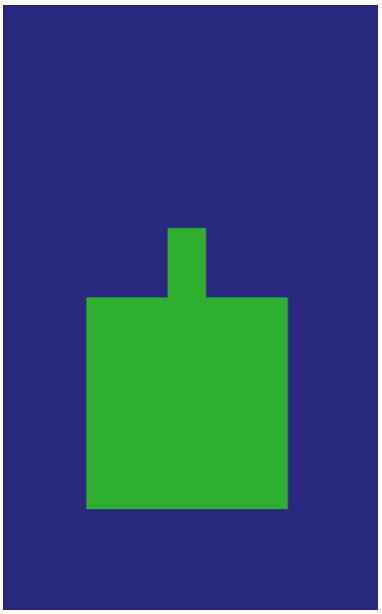
Course	Digital Image Processing
Professor	Kwang Nam Choi
Date	12, October, 2023
Submission and Q&A board	https://eclass3.cau.ac.kr/

Digital Image Processing Team Project Specification

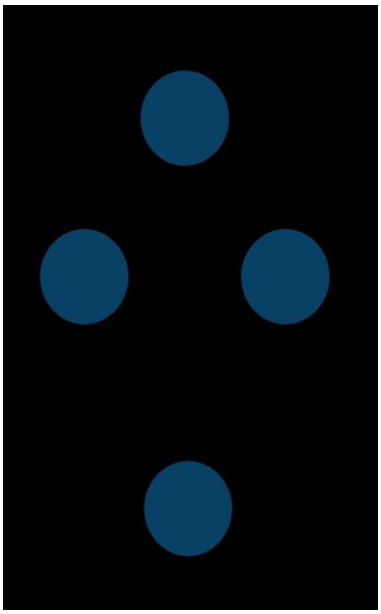
Sample Image



squid_head



squid_body



squid_points

Requirement

Implementation of a program to generate squid game images using **composite function**.

Flow Sequence : 1. Add squid_head and squid_body. 2. Substract squid_points from the result.

1. Team project assignment

Each of student assign team through e-class team project menu.

※ Team should be made up of 2 students.

2. Related references

CxImage Library : https://www.codeproject.com/Articles/1300/CxImage

Source Images – Head, Body, Points

3. Submission

1) Submit the source codes of your project that can be compiled in IDE(Visual Studio).
   - Submit folder: e-Class / Team Project 01

2) Submit a final report(word) that includes the contents below.
   ① Outline of program
   ② Design of program
   ③ The spending time
   ④ Process of project and record of project meeting (Picture, Kakao Talk capture, or etc.)
   ⑤ Each team member's thoughts on this project
   ⑥ Etc.

- Submit folder: e-Class / Team Project 01
- File name: TeamNumber_TeamName.zip (ex: *Team01_DIP.zip*)
- **Deadline : 10:00 PM, Thur. November 2 (Week 9), 2023**

4. Notifications

- Test image should be in the same folder.
- Input: 3 images ('squid_head.png', 'squid_body.png, 'squid_points.png') at the same time.
- Shape, location and size of input images can be changed slightly.
- Questions and answers utilize the class or the bulletin board below.
- In the result window, the overlapping part of the figure should have a different color from the existing figures.
- Please submit report, result image and source file as compressed file (*.zip).
- Except bellow the functions in CXImage, do not use the any pre-implemented function in libraries.
  ex)
  - Allowed: GetHeight(), GetWidth(), GetPixelColor(), SetPixcelColor() …
  - Denied: RGB2GRAY …

5. Extra Team Project

- **Input image examples** –

- ***Requirement***

  Implement a program which distinguish whether the Shape in the picture is circle or triangle.

※ This team project is for extra points, not compulsory.

6. Related references

OpenCV Library : http://opencv.org/

OpenCVKorea : http://www.opencv.co.kr

※ These websites provide the tutorials, practice for image I/O and the documentations like user's guide and reference manual for Digital Image Processing with OpenCV library.

※ However, Using the pre-implemented functions in OpenCV library which used to detect object, such as binarization, grayscaling, edge detection, labeling, contour extraction and etc, will be penalized on grade.

7. Submission

1) Submit the source codes of your project that can be compiled in IDE(Visual Studio).

   - Submit folder: e-Class / Team Project 01_extra

2) Submit a final report(word) that includes the contents below.

   ① Outline of program

   ② Design of program

   ③ The spending time

   ④ Process of project and record of project meeting (Picture, Kakao Talk capture, or etc.)

   ⑤ Each team member's thoughts on this project

   ⑥ Etc.

- Submit folder: e-Class / Team Project 01_extra
- File name: TeamNumber_TeamName_extra.zip (ex: *Team01_VIM_extra.zip*)
- **Deadline : 10:00 PM, Thur. November 2 (Week 9), 2023**

8. Notifications (for Extra Term Project)

- **This project is for extra points, so it is not mandatory.**
- Test image should be in the same folder.
- Input: 4 images (‘1.PNG’, ‘2.PNG’, ‘3.PNG’, ‘4.PNG’) at the same time.
- Shape, location and size of input images can be changed slightly.
- Questions and answers utilize the class or the bulletin board below.
- In the result window, Distinguish and output which image has a circle or a triangle.
- Please submit report and source file as compressed file (*.zip).
- Except input and output functions in OpenCV, do not use the any pre-implemented function in libraries.

※ **Project result will be evaluated with several different images.**
※ **Each of images contain one shape. (Circle or Triangle)**