



Project 2

(Due date: 02/15/21)

1. Use Harris corner detection technique to find the data points (key points) of the enclosed image. You may use the built-in function/library (`cv2.goodFeaturesToTrack()`) or any other one for this part.
2. Write a program to perform K-means clustering technique using the strongest 100 points of part 1. **You need to create your own function/code for this part** (K-mean algorithm).
 - Compare the outcomes of multiple runs with different values for K and choose the best one based on a predefined criterion.
 - Display the original image with the best detected clusters on it (use different colors).
3. Draw a bounding box for each cluster of the data points of part 2. You may use the built-in function/library (`cv2.rectangle()`) or any other one for this part.
 - Display the original image with the bounding boxes on it (use different colors).

Notes:

- The project should be implemented in Python.
- Only one single file should be submitted through Blackboard for evaluation, which includes:
 - The project report that includes the methodology, equations used, implementation results and discussion, conclusion, appropriate technical references, etc.
 - The program codes along with the dataset used for testing and validation.
- **Late submissions will not be accepted.**