The University of Western Australia
School of Engineering
Prof. Thomas Bräunl

Robot Manipulators and Automation
AUTO4507

Lab Assignment 7+8 – *Group of 2* – Pick and Sort   Points: 10+10

Lab 7 – Pick and Place
Write a program that:
- Identifies each object in the camera image
- Calculates the required gripper pose for the object
- Picks up the object
- Lifts it out of the way
- Places and releases the object in the middle of the black pad.

Note:
- Objects will be spaced out so they can be picked without touching a neighboring object.
- Remove a placed object by hand, before the next object can be searched.

Lab 8 – Sorting
Extend the pick-and-place program by sorting the objects by shape.

- There will be four objects of different shapes in the manipulator's operating area, which should be put back onto its wooden plate.
- Each object has to be correctly classified as one of four given shapes and then picked and placed into its corresponding position on the plate.
- Use OpenCV in Python or C++ for object and shape detection: `https://stackoverflow.com/questions/11424002/how-to-detect-simple-geometric-shapes-using-opencv`