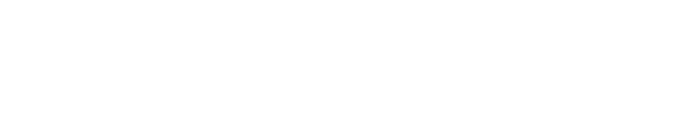
Final Project

Image Processing

College of Management Academic Studies

Computer Science





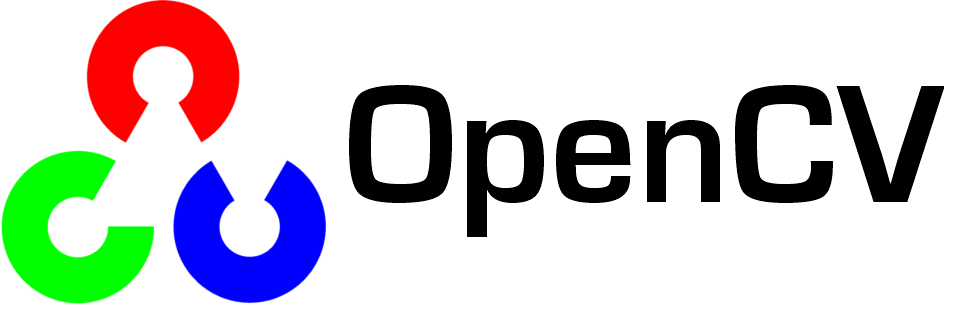


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# Submission Details

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**Submitted Due date:**

28.03.2017

**Submitted To:**

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# Part A: Single image processing

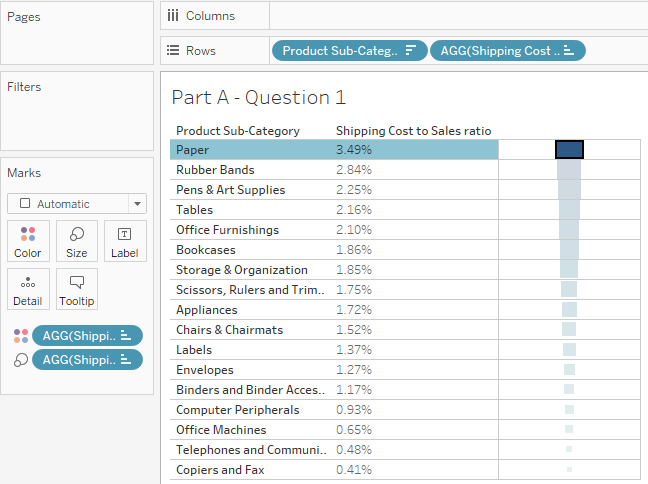
The answers in the section are written in MATLAB.

## Question 1: Histogram Equalization Algorithm

Q: Which Product Sub-Category has a Shipping Cost to Sales ratio of above 3%?

* 1. Tables
  2. Chairs
  3. Chair mats
  4. **Paper**
  5. Binders and Binder Accessories

### Print screen from MATLAB

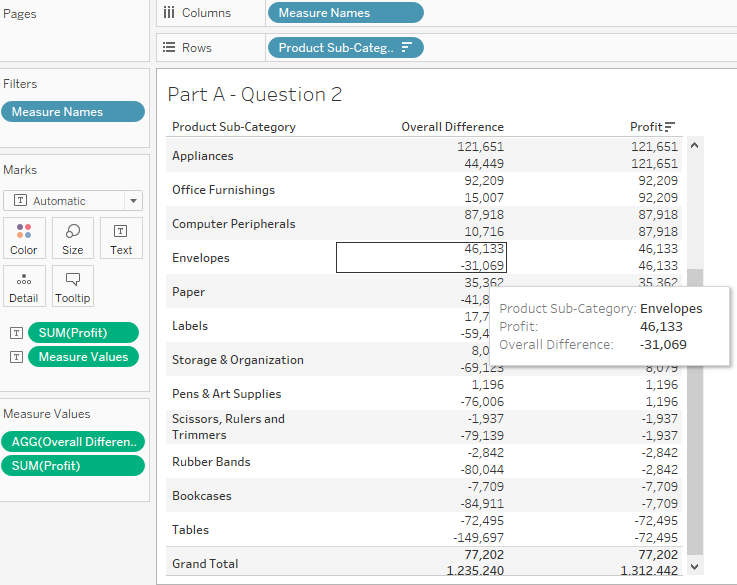


## Question 2: Image sharpening

Q: Look at the sum of profits for each Product Sub-Category. Which sub-category is $31,069 below the average profit across all categories?

* 1. Appliances
  2. Bookcases
  3. **Envelopes**
  4. Paper

### Print screen from Tableau

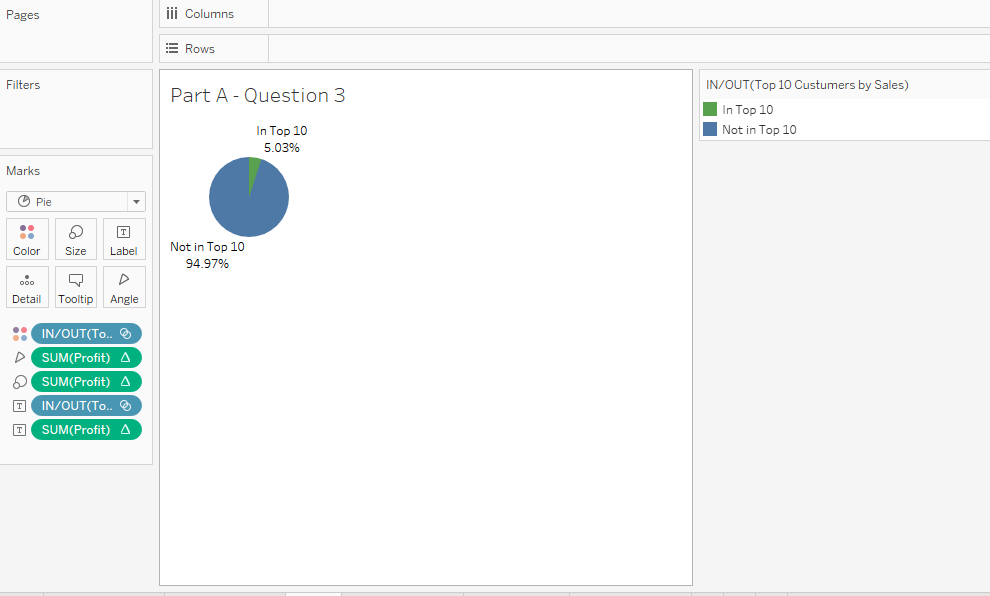


## Question3: Image compression using FFT

Q: What percent of total profits do the top 10 customers by Sales represent?

* 1. 3.50%
  2. **5.03%**
  3. 17.54%
  4. None of the Above

### Print screen from MATLAB



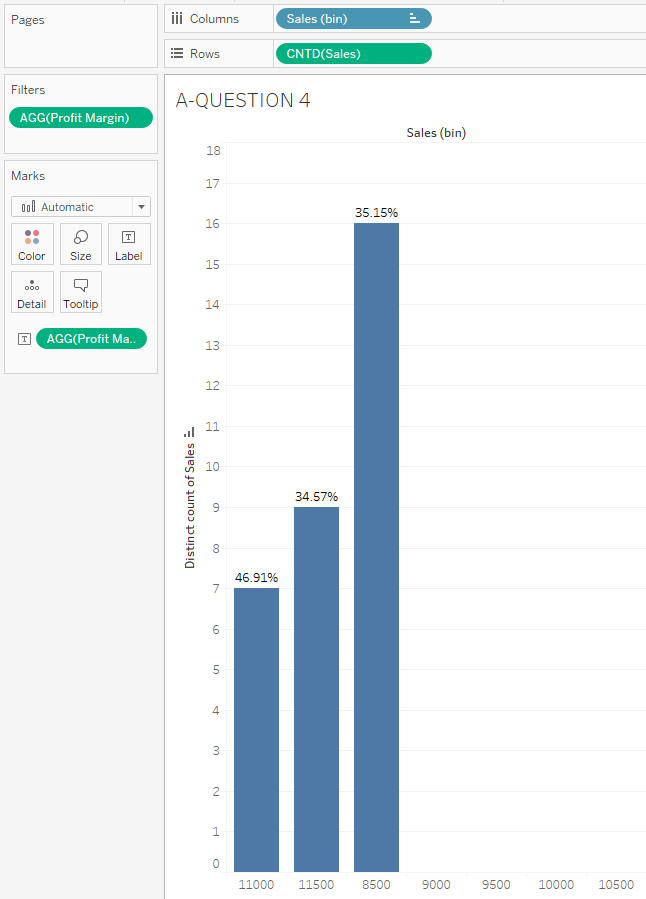
## Question 4: Finding connected components in a binary image

Q: Create a histogram showing the number of Sales using Sales Bins of $500.

Which bins have profit ratios (profit as a percentage of sales) of more than 33%?

* 1. 1,000
  2. 3,000
  3. 7,000
  4. 8,000
  5. 10,000
  6. **11,000**
  7. 18,000

### Print screen from MATLAB



# Part B: Completion of straight lines using Hough Transform algorithm

The answers in the section are written in Python using the open-cv library.

## Question 1 (15 Points)

Q: Kaggle is a platform for data science competitions which includes many datasets available at: https://www.kaggle.com Sign up for Kaggle and download a dataset which is suitable for Tableau from https://www.kaggle.com/datasets Format the dataset, clean it, find outliers, and visualize the dataset using a Dashboard. Provide screenshots.

# Part C: Image watermarking

The answers in the section are written in MATLAB.