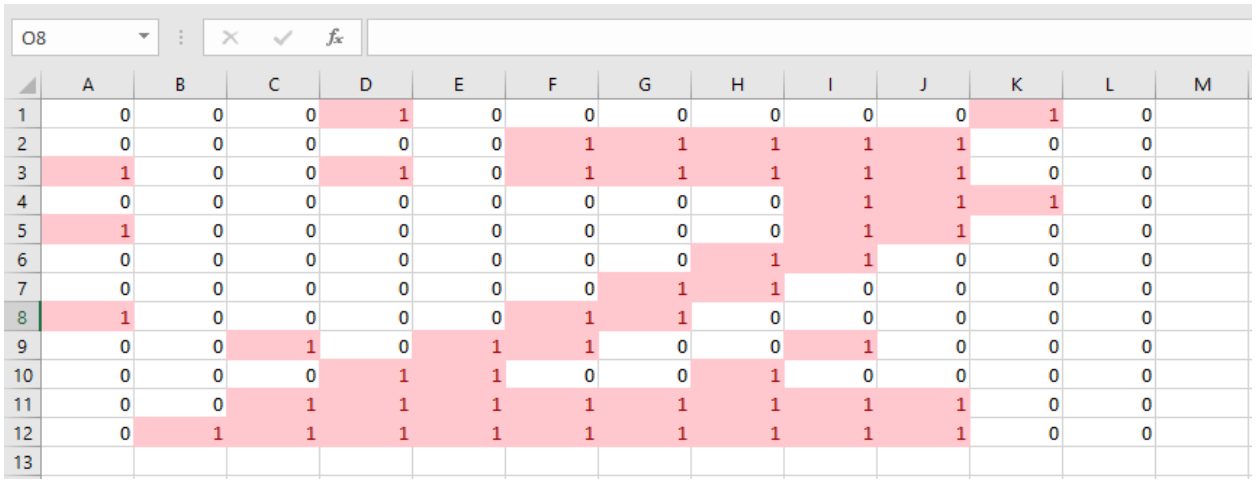
Assignment 2.1

Apply Convolution on above image step by step in a blank paper (first iteration only)



	A	B	C	D	E	F	G	H	I	J	K	L	M
1	0	0	0	1	0	0	0	0	0	0	1	0	
2	0	0	0	0	0	1	1	1	1	1	0	0	
3	1	0	0	1	0	1	1	1	1	1	0	0	
4	0	0	0	0	0	0	0	0	1	1	1	0	
5	1	0	0	0	0	0	0	0	1	1	0	0	
6	0	0	0	0	0	0	0	1	1	0	0	0	
7	0	0	0	0	0	0	1	1	0	0	0	0	
8	1	0	0	0	0	1	1	0	0	0	0	0	
9	0	0	1	0	1	1	0	0	1	0	0	0	
10	0	0	0	1	1	0	0	1	0	0	0	0	
11	0	0	1	1	1	1	1	1	1	1	0	0	
12	0	1	1	1	1	1	1	1	1	1	0	0	
13													

Filter,

```
[
  [0, 1, 0],
  [1, -4, 1],
  [0, 1, 0]
]
```

Kernel - Convolution: 3 x 3

Step size - Convolution: 1

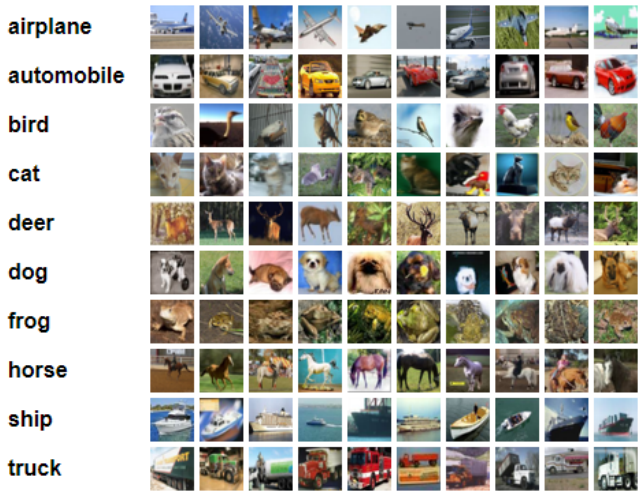
Weight: 0.9

Assignment 2.2

Problem Statement

Build a CNN for Cifar10 data

Data:




```
from keras.datasets import cifar10
```

https://www.cs.toronto.edu/~kriz/cifar.html

0:'Airplane', 1:'Automobile', 2:'Bird', 3:'Cat',
4:'Deer', 5:'Dog',6:'Frog',
7:'Horse', 8:'Ship', 9:'Truck'

Task:

1. Load the cifar10 data
2. Display 10 random cifar images in one grid (subplots)
3. Build 2 Conv2D layer with 2 MaxPooling2D, filter 64, and 32 respectively, padding true, activation relu, kernel size (3, 3), stride for Conv2d will be 1, for maxpool stride 2
4. Use RMSprop optimizer, sparse categorical loss, and accuracy, epochs 10
5. Calculate test set accuracy score and log loss, build confusion matrix
6. Display 10 random test set cifar images with actual and predicted value (use word cifar labels)
7. Justify on paper the estimation of trainable parameters of the model (refer summary)