**Assignment No: 4**

**Assignment Name: Write a program to calculate popular attribute selection measures (ASM) like Information Gain, Gain Ratio and Gini Index etc. for Decision tree.**

lst2 = ['apple', 'orange', 'banana', 'mango', 'blueberry', 'watermelon', 'pear']

fruits2 = pd.Series(lst2)

print(fruits2)

probs2 = fruits2.value\_counts(normalize=True)

probs2

#calculate Entropy

entropy = -1 \* np.sum(np.log2(probs2) \* probs2)

entropy

#calculate Gini index

gini\_index = 1 - np.sum(np.square(probs2))

gini\_index

**Output :**

0 apple

1 orange

2 banana

3 mango

4 blueberry

5 watermelon

6 pear

dtype: object

2.807354922057604

0.8571428571428572