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TASK:-

1. Write a program to implement the binary information retrieval model.
2. Take the example given in lecture slides for document input and query.
3. Output should be the term incidence matrix and the resultant document.

In [3]:
```
class BooleanQuery(object):

    def __init__(self, str=None):
        self.str = str

    def boolean_and(self):
        """
        generates a Boolean Query Based on input you provide
        :return: str
        """
        str = self.str
        arr = []
        fruits_ = str.split(";")
        for fruits in fruits_:
            _ = fruits.split(",")
            _ = [" '{}' ".format(x.strip().lower()) for x in _]
            _ = " AND ".join(_)
            _ = "({})".format(_)
            arr.append(_)
        final_query = " OR ".join(arr)
        return final_query


def main():
    str = 'suyash,tejas;sharif;KP,Vineet'
    helper = BooleanQuery(str=str)
    query = helper.boolean_and()
    print(query)


if __name__ == "__main__":
    main()
```

```
( 'suyash'  AND  'tejas' ) OR ( 'sharif' ) OR ( 'kp'  AND  'vineet' )
```

In [2]:
```
antony=[1,1,0,0,0,1]
brutus=[1,1,0,1,0,0]
caesar=[1,1,0,1,1,1]
calpurnia=[0,1,0,0,0,0]
cleopatra=[1,0,0,0,0,0]
mercy=[1,0,1,1,1,1]
worser=[1,0,1,1,1,0]
dic ={0:"Antony and Cleopatra",1:"Julius Caesar",2:"The Tenpeat",3:"Hamlet",4:
"Othello",5:"Macbetc"}
q= "Brutus AND Caesar AND NOT Calpurnia"

v1=[0]*6 #list res will store Brutus AND Caesar
for i in range(0,6):
    v1[i]= brutus[i] and caesar[i]

#v1 AND NOT Calpurnia
res=[0]*6 #list res will store Result of query
for i in range(0,6):
    # Not Calpurnia
    if(calpurnia[i]==0):
        res[i]=v1[i] and 1
    else:
        res[i]=v1[i] and 0
print(res)
print("Query found in the Documents")
for i in range(6):
    if(res[i]==1):
        print(dic[i])
```

```
[1, 0, 0, 1, 0, 0]
Query found in the Documents
Antony and Cleopatra
Hamlet
```

Thank You!