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###Lab:05                                          Date:25.02.222
###Program No.:05

###Program Name: Write a Python Program to find Inverted Index and
#                Process Boolean Query.

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#CODE:2


# Collection of documents

D1="I play tennis everyday"
D2="Everyday I go to play cricket"
D3="I like cricket and tennis"
D4="Dhoni won the world cup"
D5="I love a cup of tea everyday"


docs = [D1,D2,D3,D4,D5]
docs
```

```
['I play tennis everyday',
 'Everyday I go to play cricket',
 'I like cricket and tennis',
 'Dhoni won the world cup',
 'I love a cup of tea everyday']
```

```
# Gather the set of all unique terms

unique_terms = {term for doc in docs for term in doc.split()}
unique_terms
```

```
{'Dhoni',
 'Everyday',
 'I',
 'a',
 'and',
 'cricket',
 'cup',
 'everyday',
 'go',
 'like',
 'love',
 'of',
 'play',
 'tea',
 'tennis',
 'the',
 'to',
```

```
       'won',
       'world'}
```

```
# Construct an inverted index
# here as a Python dictionary for ease of interpretability

inverted_index = {}

for i, doc in enumerate(docs):
    for term in doc.split():
        if term in inverted_index:
            inverted_index[term].add(i+1)
        else: inverted_index[term] = {i+1}

inverted_index
```

```
     {'Dhoni': {4},
      'Everyday': {2},
      'I': {1, 2, 3, 5},
      'a': {5},
      'and': {3},
      'cricket': {2, 3},
      'cup': {4, 5},
      'everyday': {1, 5},
      'go': {2},
      'like': {3},
      'love': {5},
      'of': {5},
      'play': {1, 2},
      'tea': {5},
      'tennis': {1, 3},
      'the': {4},
      'to': {2},
      'won': {4},
      'world': {4}}
```

```
# Bitwise OR to construct 'this' or 'that' queries.

import numpy as np

docs_array = np.array(docs, dtype='object')

v1 = np.array(inverted_index[input()])
v2 = np.array(inverted_index[input()])

print(v1)
print(v2)
print('-------')
v3 = v1 | v2
print(v3)
```

```
play
tea
{1, 2}
{5}
-------
{1, 2, 5}
```

```
# Bitwise AND to construct 'this' and 'that' queries.

v1 = np.array(inverted_index[input()])
v2 = np.array(inverted_index[input()])

print(v1)
print(v2)
print('-------')
v3 = v1 & v2
print(v3)
```

```
play
cricket
{1, 2}
{2, 3}
-------
{2}
```

```
# But Not

v1 = np.array(inverted_index[input()])
v2 = np.array(inverted_index[input()])

print(v1)
print(v2)
print('-----------')

v3 = v1 - v2

print(v3)
```

```
play
cricket
{1, 2}
{2, 3}
-----------
{1}
```

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