1. **Program Code**

```
import numpy as np

A = np.array([[1,2,3,6],[8,9,4,6],[2,7,5,9],[3,1,8,4]])

B = np.array([[4,7,9,6],[2,4,6,7],[9,5,8,3],[6,9,2,6]])

print("\nMultiplication of matrices A and B\n",np.multiply(A,B))

print("\nTranspose of matrix A\n",A.T)

C = A.T

print("\nA transpose B\n",np.dot(C,B))

print("\nLast two elements of 3rd and 4th row of matrix B are\n",B[2,-2],",",B[2,-1],"and",B[3,-2],",",B[3,-1])
```

OUTPUT

```
C:\Users\ajcemca\PycharmProjects\pythonProject\venv\Scripts\python.e

Multiplication of matrices A and B
 [[ 4 14 27 36]
 [16 36 24 42]
 [18 35 40 27]
 [18  9 16 24]]

Transpose of matrix A
 [[1 8 2 3]
 [2 9 7 1]
 [3 4 5 8]
 [6 6 9 4]]

A transpose B
 [[ 56  76  79  86]
 [ 95  94 130 102]
 [113 134 107 109]
 [141 147 170 129]]

Last two elements of 3rd and 4th row of matrix B are
 8 , 3 and 2 , 6

Process finished with exit code 0
```

2. **Program Code**

```
import nltk

text = "India is my country. " \
       "All indians are my brothers and sisters." \
       "I love my country." \
       "India is a diverse country." \
       "It is rich in its cultures"

sent = nltk.sent_tokenize(text)

print(sent)

for i in sent:
    token = nltk.word_tokenize(i)

    print(token)

    tags = nltk.pos_tag(token)

    print(tags)
```

OUTPUT

```
C:\Users\ajcemca\PycharmProjects\pythonProject\venv\Scripts\python.exe C:/Users/ajcemca/PycharmProjects/pythonProject/speechtagging.py
['India is my country.', 'All indians are my brothers and sisters.I love my country.India is a diverse country.It is rich in its cultures']
['India', 'is', 'my', 'country', '.']
[('India', 'NNP'), ('is', 'VBZ'), ('my', 'PRP$'), ('country', 'NN'), ('.', '.')]
['All', 'indians', 'are', 'my', 'brothers', 'and', 'sisters.I', 'love', 'my', 'country.India', 'is', 'a', 'diverse', 'country.It', 'is', 'rich', 'in',
[('All', 'DT'), ('indians', 'NNS'), ('are', 'VBP'), ('my', 'PRP$'), ('brothers', 'NNS'), ('and', 'CC'), ('sisters.I', 'NN'), ('love', 'VBP'), ('my', '

Process finished with exit code 0
```