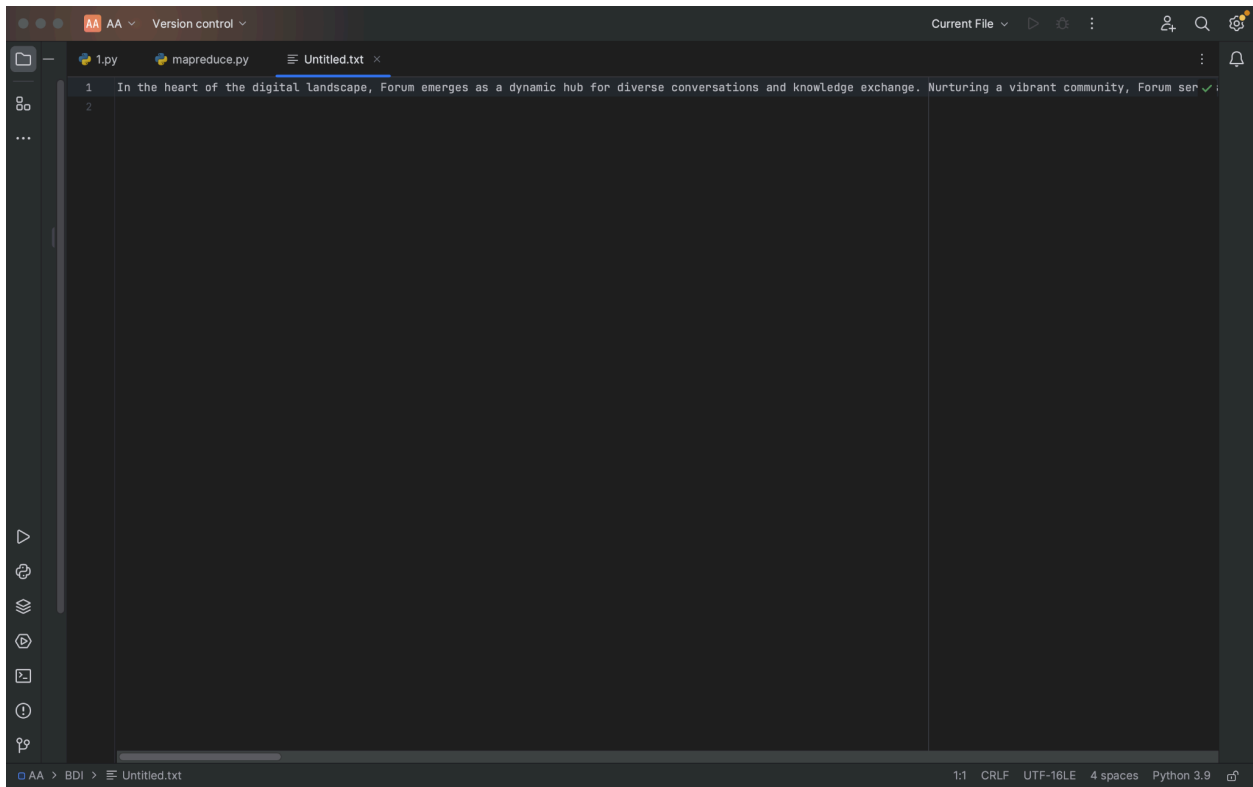
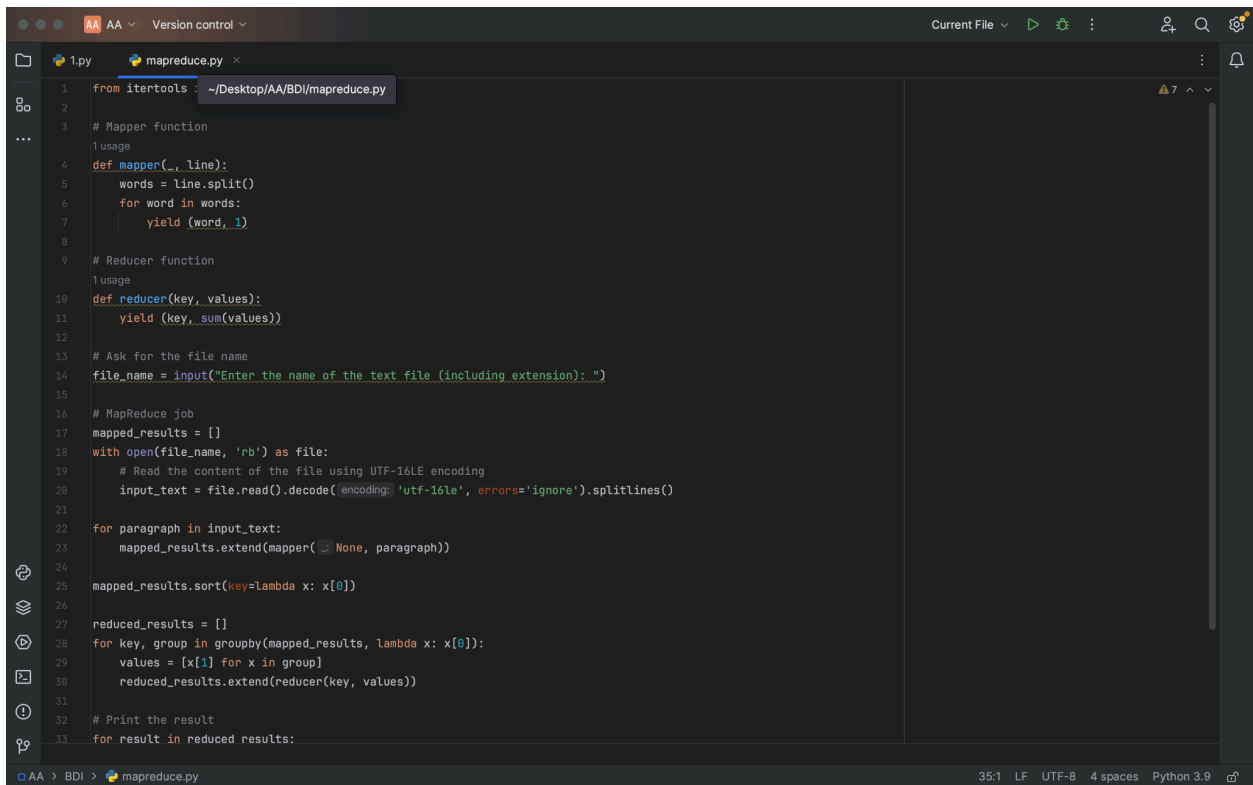


Output:

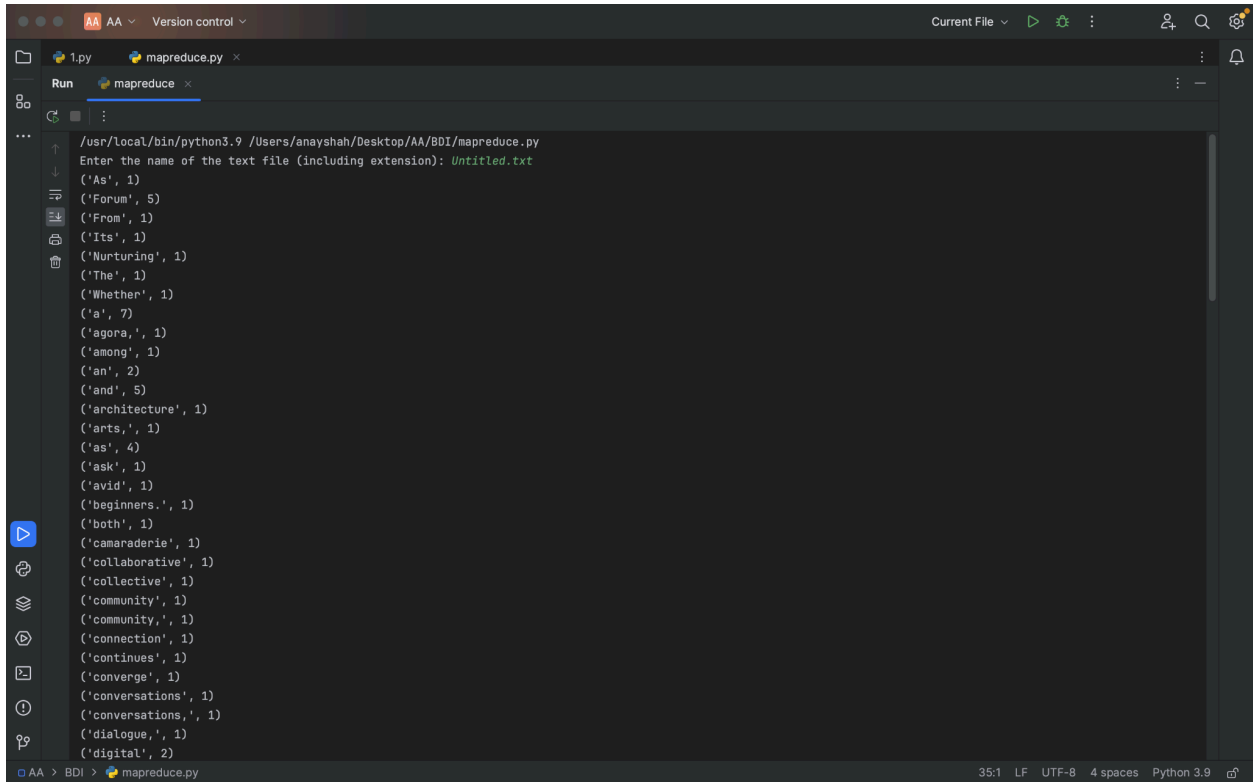


A screenshot of a code editor window. The title bar shows 'AA' and 'Version control'. The editor has three tabs: '1.py', 'mapreduce.py', and 'Untitled.txt'. The 'Untitled.txt' tab is active, showing two lines of text: '1 In the heart of the digital landscape, Forum emerges as a dynamic hub for diverse conversations and knowledge exchange. Nurturing a vibrant community, Forum ser' and '2'. The status bar at the bottom indicates '1:1 CRLF UTF-16LE 4 spaces Python 3.9'.

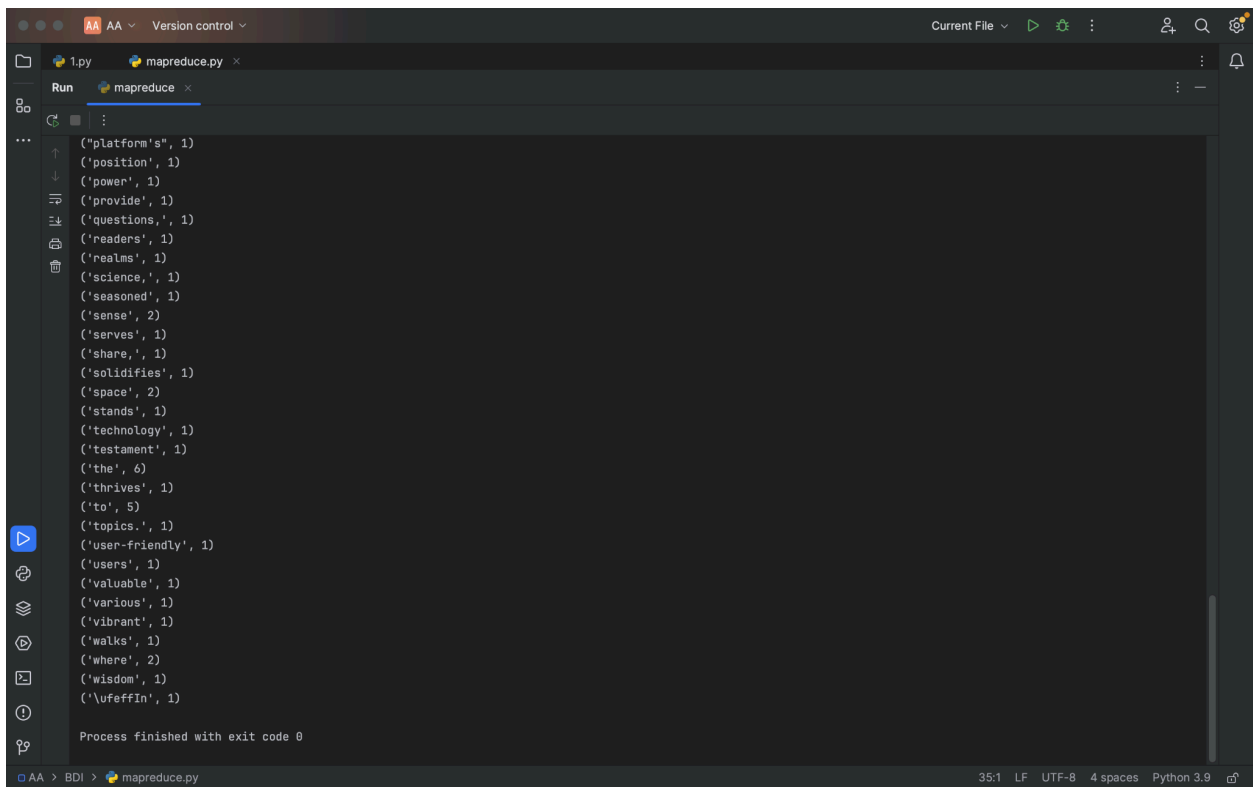


A screenshot of a code editor window. The title bar shows 'AA' and 'Version control'. The editor has two tabs: '1.py' and 'mapreduce.py'. The 'mapreduce.py' tab is active, showing a Python script for a MapReduce job. The script includes a mapper function, a reducer function, and logic to read a text file, process it, and print the results. The status bar at the bottom indicates '35:1 LF UTF-8 4 spaces Python 3.9'.

```
1 from itertools import groupby
2
3 # Mapper function
4 usage
5 def mapper(line):
6     words = line.split()
7     for word in words:
8         yield (word, 1)
9
10 # Reducer function
11 usage
12 def reducer(key, values):
13     yield (key, sum(values))
14
15 # Ask for the file name
16 file_name = input("Enter the name of the text file (including extension): ")
17
18 # MapReduce job
19 mapped_results = []
20 with open(file_name, 'rb') as file:
21     # Read the content of the file using UTF-16LE encoding
22     input_text = file.read().decode(encoding='utf-16le', errors='ignore').splitlines()
23
24 for paragraph in input_text:
25     mapped_results.extend(mapper(None, paragraph))
26
27 mapped_results.sort(key=lambda x: x[0])
28
29 reduced_results = []
30 for key, group in groupby(mapped_results, lambda x: x[0]):
31     values = [x[1] for x in group]
32     reduced_results.extend(reducer(key, values))
33
34 # Print the result
35 for result in reduced_results:
```

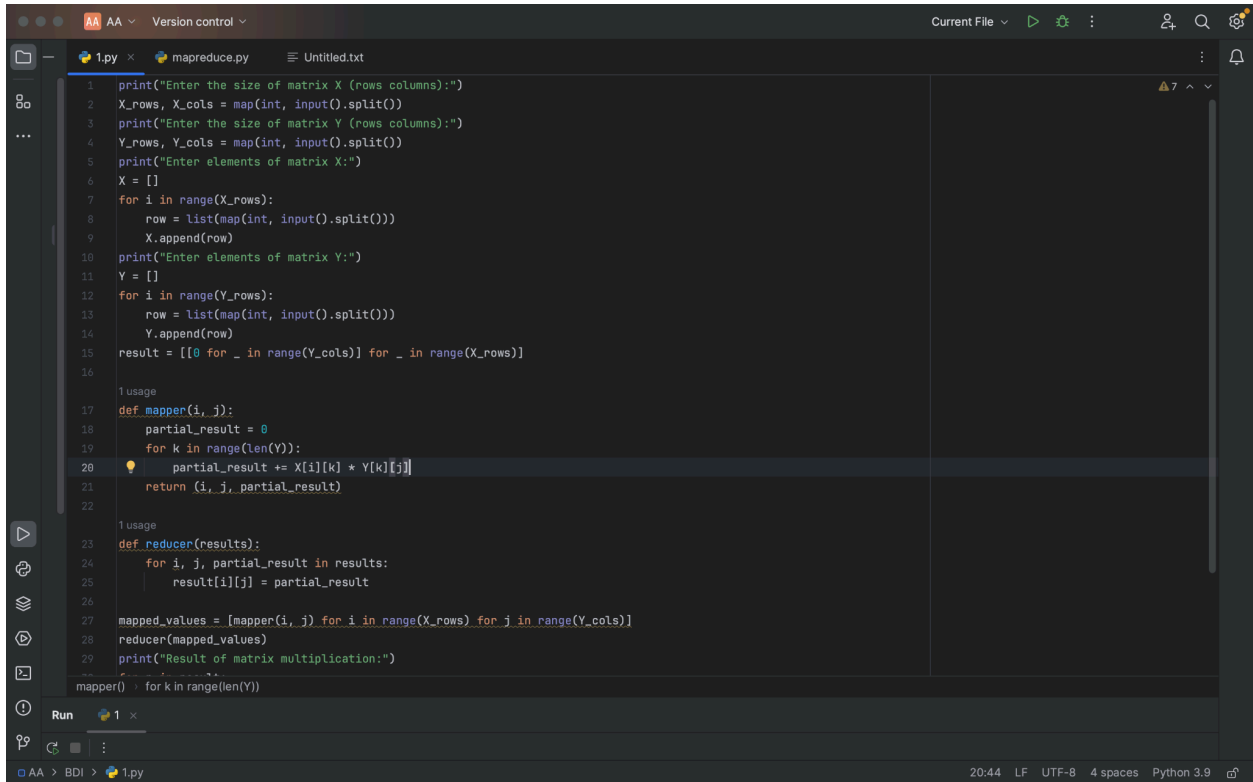


```
AA AA Version control Current File Run mapreduce.py
1.py mapreduce.py
Run mapreduce
/usr/local/bin/python3.9 /Users/anayshah/Desktop/AA/BDI/mapreduce.py
Enter the name of the text file (including extension): Untitled.txt
('As', 1)
('Forum', 5)
('From', 1)
('Its', 1)
('Nurturing', 1)
('The', 1)
('Whether', 1)
('a', 7)
('agora', 1)
('among', 1)
('an', 2)
('and', 5)
('architecture', 1)
('arts', 1)
('as', 4)
('ask', 1)
('avid', 1)
('beginners.', 1)
('both', 1)
('camaraderie', 1)
('collaborative', 1)
('collective', 1)
('community', 1)
('community.', 1)
('connection', 1)
('continues', 1)
('converge', 1)
('conversations', 1)
('conversations.', 1)
('dialogue', 1)
('digital', 2)
```

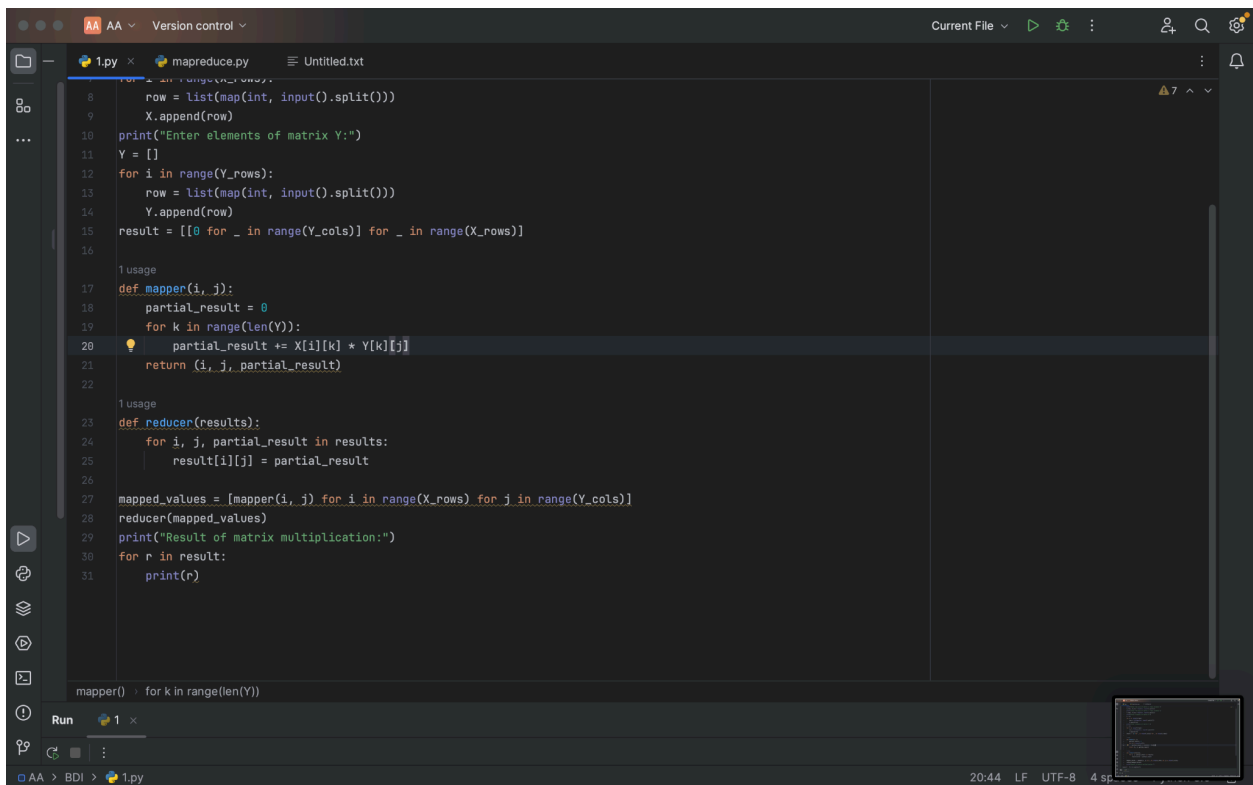


```
AA AA Version control Current File Run mapreduce.py
1.py mapreduce.py
Run mapreduce
('platform's', 1)
('position', 1)
('power', 1)
('provide', 1)
('questions.', 1)
('readers', 1)
('realms', 1)
('science', 1)
('seasoned', 1)
('sense', 2)
('serves', 1)
('share', 1)
('solidifies', 1)
('space', 2)
('stands', 1)
('technology', 1)
('testament', 1)
('the', 6)
('thrives', 1)
('to', 5)
('topics.', 1)
('user-friendly', 1)
('users', 1)
('valuable', 1)
('various', 1)
('vibrant', 1)
('walks', 1)
('where', 2)
('wisdom', 1)
('\\uffeffIn', 1)

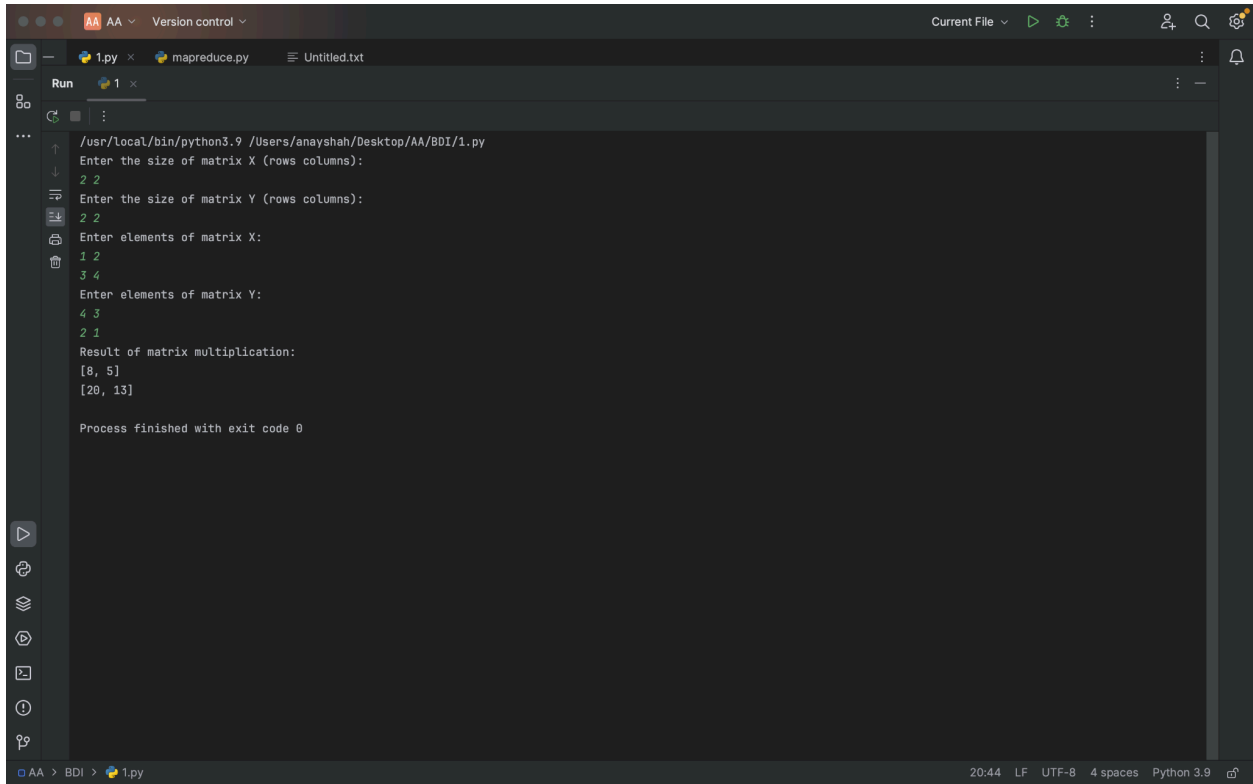
Process finished with exit code 0
```



```
1 print("Enter the size of matrix X (rows columns):")
2 X_rows, X_cols = map(int, input().split())
3 print("Enter the size of matrix Y (rows columns):")
4 Y_rows, Y_cols = map(int, input().split())
5 print("Enter elements of matrix X:")
6 X = []
7 for i in range(X_rows):
8     row = list(map(int, input().split()))
9     X.append(row)
10 print("Enter elements of matrix Y:")
11 Y = []
12 for i in range(Y_rows):
13     row = list(map(int, input().split()))
14     Y.append(row)
15 result = [[0 for _ in range(Y_cols)] for _ in range(X_rows)]
16
17 usage
18 def mapper(i, j):
19     partial_result = 0
20     for k in range(len(Y)):
21         partial_result += X[i][k] * Y[k][j]
22     return (i, j, partial_result)
23
24 usage
25 def reducer(results):
26     for i, j, partial_result in results:
27         result[i][j] = partial_result
28
29 mapped_values = [mapper(i, j) for i in range(X_rows) for j in range(Y_cols)]
30 reducer(mapped_values)
31 print("Result of matrix multiplication:")
32
33 mapper() for k in range(len(Y))
```



```
8     row = list(map(int, input().split()))
9     X.append(row)
10 print("Enter elements of matrix Y:")
11 Y = []
12 for i in range(Y_rows):
13     row = list(map(int, input().split()))
14     Y.append(row)
15 result = [[0 for _ in range(Y_cols)] for _ in range(X_rows)]
16
17 usage
18 def mapper(i, j):
19     partial_result = 0
20     for k in range(len(Y)):
21         partial_result += X[i][k] * Y[k][j]
22     return (i, j, partial_result)
23
24 usage
25 def reducer(results):
26     for i, j, partial_result in results:
27         result[i][j] = partial_result
28
29 mapped_values = [mapper(i, j) for i in range(X_rows) for j in range(Y_cols)]
30 reducer(mapped_values)
31 print("Result of matrix multiplication:")
32 for r in result:
33     print(r)
34
35 mapper() for k in range(len(Y))
```



The screenshot shows a code editor with a dark theme. The top bar includes a file explorer, a version control dropdown, and a 'Current File' dropdown. The editor has three tabs: '1.py', 'mapreduce.py', and 'Untitled.txt'. A 'Run' panel is open, showing the output of a Python script. The script prompts for the size and elements of two matrices, X and Y, and then displays the result of their multiplication. The output shows matrix X as [[1, 2], [3, 4]] and matrix Y as [[4, 3], [2, 1]]. The resulting matrix is [[8, 5], [20, 13]]. The process finished with exit code 0. The bottom status bar indicates the file is '1.py' in the 'BDI' directory, with a timestamp of 20:44, LF line endings, UTF-8 encoding, 4 spaces indentation, and Python 3.9 interpreter.

```
/usr/local/bin/python3.9 /Users/anayshah/Desktop/AA/BDI/1.py
Enter the size of matrix X (rows columns):
2 2
Enter the size of matrix Y (rows columns):
2 2
Enter elements of matrix X:
1 2
3 4
Enter elements of matrix Y:
4 3
2 1
Result of matrix multiplication:
[8, 5]
[20, 13]

Process finished with exit code 0
```

AA > BDI > 1.py 20:44 LF UTF-8 4 spaces Python 3.9