Kanishk Kaushik 23104015 B14
Week 4

Ans 1:

```
import numpy as np
from collections import Counter

print(np.__version__)
user_input = input()
user_list = [x.strip() for x in user_input.split(',')]
frequency = Counter(user_list)
for key, count in frequency.items():
    print(f"{key}: {count}")
```

Ans 2:

```
binary_input = input()
ones = binary_input.count('1')
zeros = binary_input.count('0')
output = '1' * ones + '0' * zeros
print(output)
```

Ans 3:

```
def remove_nth_char(string, n):
    if n < 0 or n >= len(string):
        return "Index out of range"
    return string[:n] + string[n+1:]

string = input()
n = int(input())
print(remove_nth_char(string, n))
```

Ans 4:

```
import numpy as np

arr = np.ones((3,3))
result = np.zeros((5,5))
result[1:-1, 1:-1] = arr
print(result)
```

Ans 5:

```
import numpy as np

array1 = np.array([0, 10, 20, 40, 60])
```

```
array2 = np.array([0, 40])
print(np.isin(array1, array2))
```

Ans 6:

```
import numpy as np

array1 = np.array([0, 10, 20, 40, 60, 80])
array2 = np.array([10, 30, 40, 50, 70])
print(np.setxor1d(array1, array2))
```

Ans 7:

```
import numpy as np

a = np.array([1, 2, 3])
b = np.array([4, 5, 6])
print(np.column_stack((a, b)))
```

Ans 8:

```
import numpy as np

rows = input().split(',')
matrix = np.array([list(map(float, row.strip().split())) for row in rows])
print(np.linalg.matrix_rank(matrix))
print(np.trace(matrix))
try:
    print(np.linalg.det(matrix))
except np.linalg.LinAlgError:
    print("Not defined")
```