NC Lab 6

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Task 1 Addition

Code

```
import numpy as np
a = np.array([[5,2,3],[1,2,3]])
b = np.array([[6,7,-2],[3,5,19]])
c = np.array([[0,0,0],[0,0,0]])
for i in range(2):
   for j in range(3):
      c[i,j]=a[i,j]+b[i,j]
print(c)
```

Output

```
[[11  9  1]
 [ 4  7 22]]
```

Task 2 Subtraction

Code

```
import numpy as np
a = np.array([[5,2,3],[1,2,3]])
b = np.array([[6,7,-2],[3,5,19]])
c = np.array([[0,0,0],[0,0,0]])
for i in range(2):
   for j in range(3):
      c[i,j]=a[i,j]-b[i,j]
print(c)
```

Output

```
[[ -1  -5   5]
 [ -2  -3 -16]]
```

Task 3 Multiplication

Code

```
a = np.array([[5,2,3],[1,2,7]])
b = np.array([[3,-2],[5,-8],[9,-10]])
c = np.array([[0,0],[0,0]])
for i in range(2):
   for j in range(2):
      for k in range(3):
         c[i,j] += a[i,k] * b[k,j]
print(c)
```

Output

```
[[ 52 -56]
 [ 76 -88]]
```

Task 4 Scaler Multiplication

Code

```
a = np.array([[5,2,3],[1,2,7]])
c = np.array([[5,2,3],[1,2,7]])
for i in range(2):
   for j in range(3):
      c[i,j]=a[i,j]*2
print(c)
```

Output

```
[[10  4  6]
 [ 2  4 14]]
```

Task 5 Linear Combination (A+2B-0.5C)

Code

```
a = np.array([[5,2,3],[1,2,7]])

b = np.array([[6,7,-2],[3,5,19]])

c = np.array([[6,7,-2],[3,5,19]])

res = np.array([[6,7,-2],[3,5,19]])

for i in range(2):

   for j in range(2):

      res[i,j] = a[i,j]+(2*b[i,j])-(0.5*c[i,j])

print(res)
```

Output

```
[[14 12 -2]
 [ 5  9 19]]
```