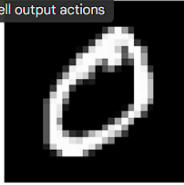


Worksheet 2 output:

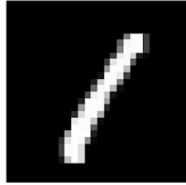


Code cell output actions

Digit: 0



Digit: 1



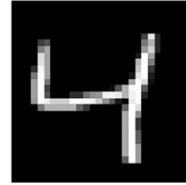
Digit: 2



Digit: 3



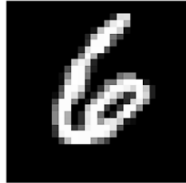
Digit: 4



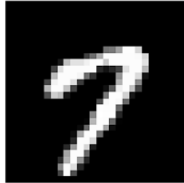
Digit: 5



Digit: 6



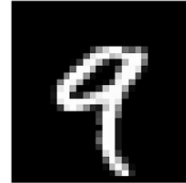
Digit: 7



Digit: 8



Digit: 9



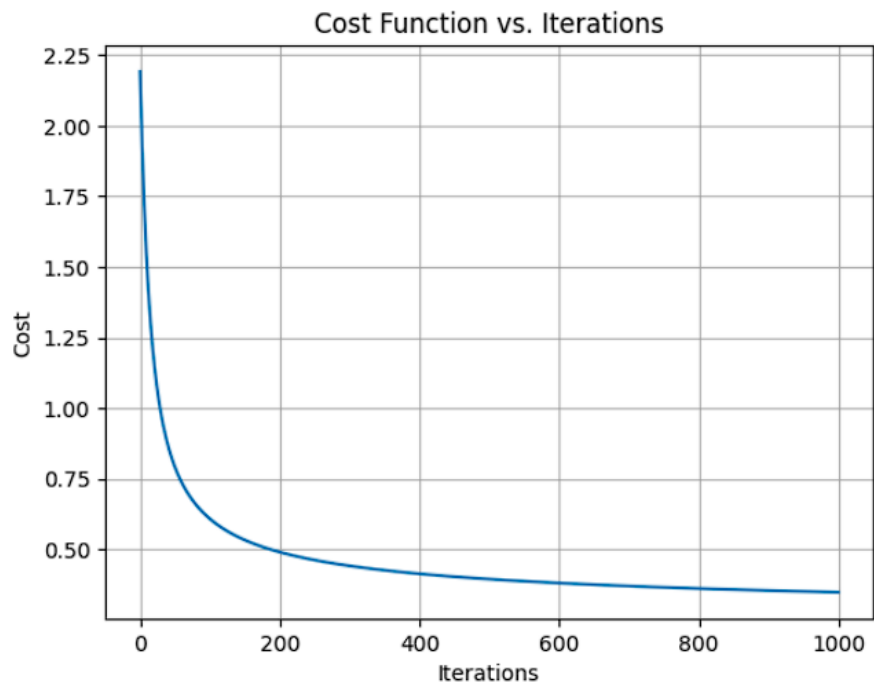
Move forward: Dimension of Feature Matrix X and label vector y matched.



Training data shape: (48000, 784)
Test data shape: (12000, 784)



```
Iteration 0: Cost = 2.1923
Iteration 100: Cost = 0.6075
Iteration 200: Cost = 0.4897
Iteration 300: Cost = 0.4411
Iteration 400: Cost = 0.4129
Iteration 500: Cost = 0.3940
Iteration 600: Cost = 0.3802
Iteration 700: Cost = 0.3695
Iteration 800: Cost = 0.3609
Iteration 900: Cost = 0.3537
```



```
Confusion Matrix:
[[1127    0    5    2    3   11    9    2   13    3]
 [    0 1274    7   11    1    5    1    4   18    1]
 [    1   14 1027   16   19    4   27   24   35    7]
 [    8    4   34 1051    1   53    9    8   30   21]
 [    1    5    7    1 1094    0   10    4    4   50]
 [   22   14   12   44   12  921   14    7   45   13]
 [    7    2    9    1   11   15 1120    2   10    0]
 [    6   27   23    3   15    3    0 1185    7   30]
 [    8   27   14   34    9   32   13    6 1002   15]
 [    8    6   10   18   44    9    0   39   10 1050]]

Precision: 0.90
Recall: 0.90
F1-Score: 0.90
```

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