Sample_Programming_Solution

February 19, 2019

1 Homework x: Programming Tasks

[Sample] This document is a template for you for programming tasks of homeworks. We are using jupyter notebook as it has very nice presentable format for wroking on your programming task. You can add following things in a jupyter notebook - Simple Markdown for document style - HTML text - *Latex* - inline code and its outptu etc. We encourge you to explore jupyter notebook and get familar with it. For more information, you can visit course website or see following tutoirals: Tutorial.

Write your answer as follows, make a pdf copy, print it and attach it with your solution.

Libraries to import

```
In [11]: import numpy as np
         import matplotlib.pyplot as plt
         %matplotlib inline
```

1.0.1 Question 1

Part (d) Given y and A, we are asked to find x such that,

$y = Ax$

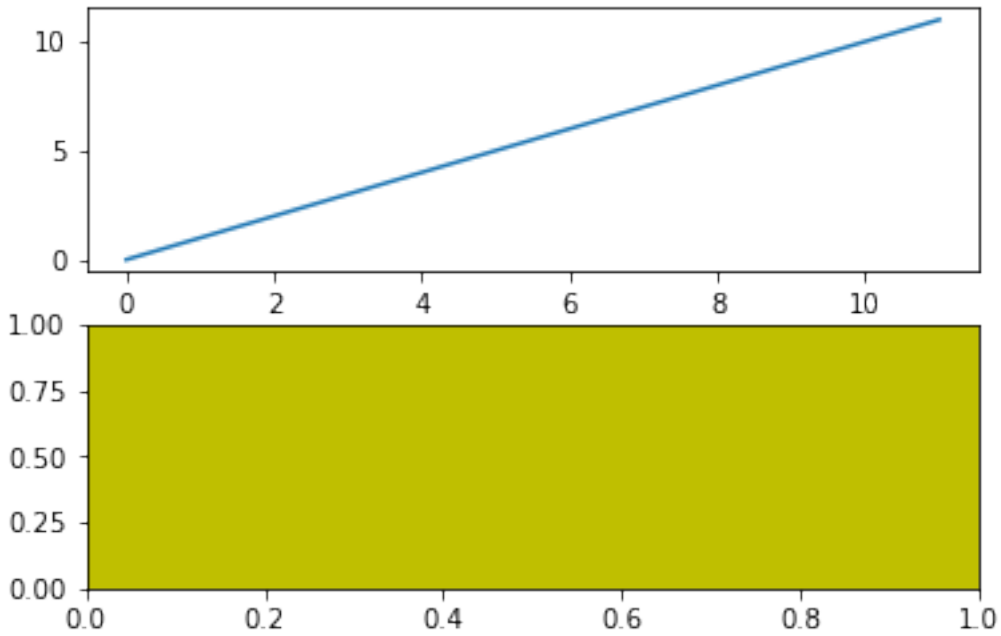
```
In [10]: # Givnen A and y
         A = np.array([[1,3],[3,8]])
         y = np.array([[1,2]]).T
         # Inverse of A
         invA = np.linalg.inv(A)
         # Required X
         x = np.dot(invA,y)
         print('x:\n',x)
```

```
x:
 [[-2.]
 [ 1.]]
```

Graphs Example taken from here.

In [12]:
```
# plot a line, implicitly creating a subplot(111)
plt.plot([1,2,3])
# now create a subplot which represents the top plot of a grid
# with 2 rows and 1 column. Since this subplot will overlap the
# first, the plot (and its axes) previously created, will be removed
plt.subplot(211)
plt.plot(range(12))
plt.subplot(212, facecolor='y') # creates 2nd subplot with yellow background
```

Out[12]:
```
<matplotlib.axes._subplots.AxesSubplot at 0x2056d319e8>
```



In [ ]: