CSE 5520

Homework 1

Topics: Bar graph, dynamic plot and web publishing of plots

You have seen how to plot a bar graph for Fibonacci sequence in which the sequence is fixed. Your exercise is to write an extension of that code which enables you to interactively produce the bar graph based on entry of the number of terms entered. Sample Fibonacci number generation code is available in https://www.programiz.com/python-programming/examples/fibonacci-sequence It has been modified to a function as shown below.

```
def fibonacci(Nterms: int, N1: int, N2: int):
      Count = 0
      # check if the number of terms is valid
      if Nterms <= 0:
            print("Please enter a positive integer")

      # if there is only one term, return n1
      elif Nterms == 1:
            print("Fibonacci sequence upto",Nterms,": ")
            print(N1)
      # generate fibonacci sequence
      else:
            print("Fibonacci sequence:")
            while Count < Nterms:
                  print(N1)
                  Nth = N1 + N2
                  # update values
                  N1 = N2
                  N2 = Nth
                  Count += 1
      return N1

nterms = int(input("How many terms? "))
fibonacci(nterms, 0, 1 )
```

Step 1: Produce two different graphs, one for 10 and 50 using pygal for the plots

Some sample code generating bar graph using pygal is available in
http://www.pygal.org/en/latest/index.html

Step 2: Repeat Step 1, this time using plotly.

Some sample code generating bar graph using plotly is available in
https://plotly.com/python/getting-started/

Step 3: Publish your plotly code in Step 2 using Dash in your local web browser http://127.0.0.1:8050/.

Some sample code using Dash with plotly is available in https://dash.plotly.com/layout

You may need to kill Dash server if needed.