Applied AI Course

Follow 337 Followers About

FAQ's of Python Mandatory Assignment

Applied AI Course Sep 17, 2019 · 3 min read

Q1: I'm getting math domain error while using math.acos() function.

Ans: https://www.tutorialspoint.com/python/number_acos.htm as per the documentation, for the function math.acos(x), the x value should be -1 to 1. if you get that domain error, print the value of x and check if you are having value >1 or < -1.

Q2: should I use *log* base *e* or *log* base *10* for calculating log loss function?

Ans: you can use either of them: https://qr.ae/TWKafj. We have that log_10{x}=log_e{x} /log_e{10}, so we have the same scaling for all the components. One reason to use the natural log is that it is typically faster to calculate using a computer.

Q3: Second question is not clear, can you explain it a little more?

Ans: Check this video: http://bit.ly/proportional_sampling, in the *pick_a_number_from_list* function you need to create a mapping between an element *e* and a range [a, b), so that when you generate a random variable you can pick the element *e* if $a \leq e < b$.

```
def pick_a_number_from_list(A):
    # your code here for picking an element from with the probability propotional to its magnitude
    #.
    #.
    #.
    return #selected_random_number

def sampling_based_on_magnitued():
    for i in range(1,100):
        number = pick_a_number_from_list(A)
        print(number)

sampling_based_on_magnitued()
```

sample code for proportional sampling

Q4: Not able to code that Cosine similarity question, can you help?

Ans: a. To solve this assignment, you need to understand how to access list elements and elements of tuples.

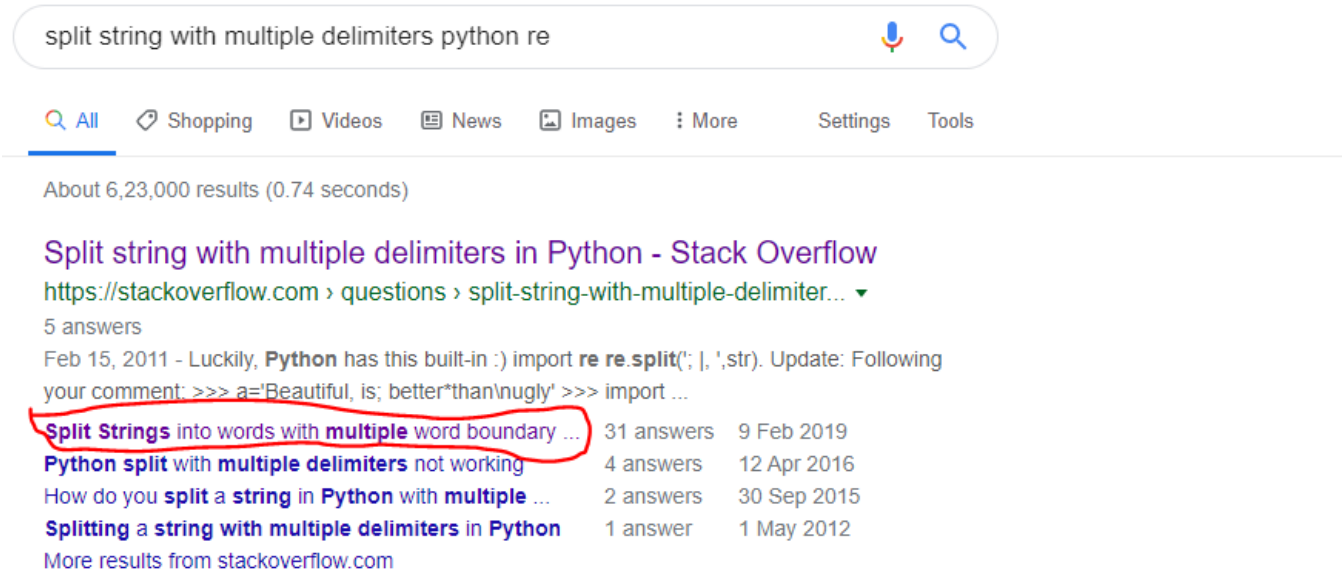
b. you can use dict objects to create a mapping between data points and distance check this for better understanding: https://ideone.com/nbTsuB **or** you can use the *zip* function

c. Once after you created the mapping either with *dict* or *zip*, you need to sort the elements based on distances.

d. you can pint the data points which are very close to the given data point

Q5: How to parse the equation of a line and getting the coefficients?

Ans: This is the most important part of the whole task, try to search for how to split string with multiple delimiters, your search results can be like this.



Q6: I'm not able to find the 25th and 75th percentiles or How can I calculate percentiles without using numpy?

Ans: check this out: https://ideone.com/7NyfF9 and https://stackoverflow.com/a/48799350/4084039

Q7: I do not understand the logic to fill the spaces for the example

S = _,_,30,_,_,_,50,_,_

Ans: the whole solution lies in finding the indices of '_'.

a. you start checking from the left and store the index of '_' that you encountered, and also find the index *j* of a number which you reach while moving from left to right.

If *i* is not zero, then fill all the gaps with (S[i-1]+S[j])/(j-i+1)

If *i* is zero, then fill all the gaps with (S[j])/(j-i+1), similarly, you can figure the 3rd condition we have given in the instructions.

Q8: Last question answer is wrong?

Ans: Yes, we gave as 0.44982 and the original answer should be 0.42431

Q9: I am not able to find how I can differentiate on which side of line point lies

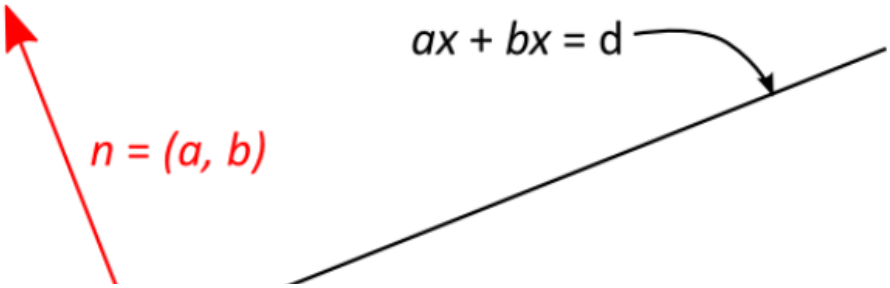
Ans: check this: https://math.stackexchange.com/a/757603/350900

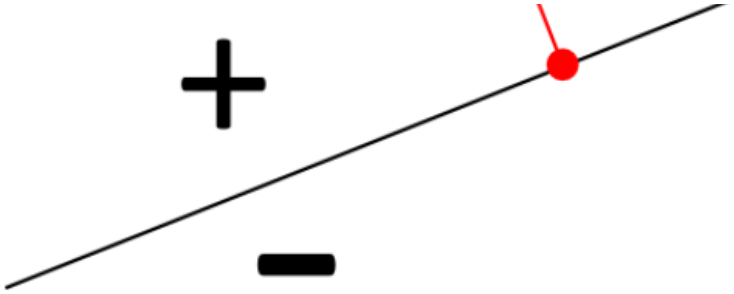
Let your line be given by $ax + by = d$, and call $\vec{n} = (a, b)$ the normal vector of the line. Let's label the side $\vec{n}$ points to $+$ and the opposite side $-$. Then for any point (p, q) in the plane, the sign of

$$ap + bq - d$$

determines which side the point (p, q) is on. Notice that this is 0 if and only if (p, q) is *on* the line, so all points not on the line get $+$ or $-$.

Here's a picture illustrating the situation:





Edit: Oops, the equation should be $ax + by = d$ of course...

Q10: Please explain how to compute probabilities.

Ans: a. this is one of the easiest questions in the whole assignment. If you have a complete understanding of how to access list elements you can easily solve this one.

b. you need to keep the counts of how many times both F's and S's occurred together and how many times each S occurred, once you have stored these, it's it will be simple division operation.

Programming