

Outline

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Abstract

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1 Introduction

The rationale behind analyzing this dataset is to determine if there are any trends between characteristics of patients with differing levels of heart disease. Knowing these trends will perhaps enable us to better understand and treat those affected and make predictions on the direction their health may be heading.
include papers about heart disease?

2 Methods

```
1
2 # MAIN FUNCTION
3 op = '' # defining variable op
4 clmns = [] # defining list clmns
5 filename = '' # defining variable filename
6 def shellfunction(filename, clmns, op): # defining function with 3 inputs
7     import pandas as pd # importing pandas
8     import seaborn as sns # importing seaborn for plotting
9     import re # importing regex
10    print('Input .csv file you wish to analyze')
11    filename = str(input()) # allows user to input filename
12    assert check(filename) == True, 'This function will only work with .csv files\nPlease
    input a .csv file.'
13    print('\n') # the assert statement will ensure we are working with a .csv file
14    cl = [] # making an empty list
15    clmns = cl # making the empty list equal to clmns
16    print('age = 0, sex = 1\nchest pain = 2, resting blood pressure = 3\ncholesterol = 4,
    fasting blood sugar = 5\nresting ECG = 6, max heart rate = 7\nexercise induced angina =
    8, ST depression induced by exercise = 9\nslope of the peak exercise ST segment = 10\
    nnumber of major vessels colored by flourosopy = 11\nthal = 12, target = 13')
17    print('\n') # providing a key
18    for i in range(0, 2): # making a for loop where the user can input what elements they
        want to use
19        print("Enter number corresponding to desired element to be plotted")
20        item = int(input())
21        cl.append(item) # appending user input to the empty list made earlier
22    x, y = cl # setting up assert statement
23    assert x != y, 'Please input different values' # using assert statement to ensure
        differnt values are used
24    print('\n')
25    df = pd.read_csv(filename, usecols = clmns) # importing file and designating columns to
        use from pandas
26    op = str(input("What operation would you like to run on this data?:\nAverage(A), Maximum
        (MX), Minimum(MN), Standard Deviation(STD)\nType A, MX, MN, or STD: "))
27    print('\n') # providing instructions for the user
28    if op == "A" or op == "a": # set up if, elif, else statements to take on use inputs
29        avg = df.mean(axis=0) # average function
30        v1, v2 = df
31        sns.lmplot(v1, v2, data=df, fit_reg=True) #plotting using seaborn
32        print(avg)
33    elif op == "MX" or op == "mx":
34        mx = df.max(axis=0) # max function
35        v1, v2 = df
36        sns.lmplot(v1, v2, data=df, fit_reg=True)
37        print(mx)
38    elif op == "MN" or op == "mn":
39        mn = df.min(axis=0) # min function
40        v1, v2 = df
41        sns.lmplot(v1, v2, data=df, fit_reg=True)
42        print(mn)
43    elif op == "STD" or op == "std":
44        stdev = df.std(axis=0) # standard deviation function
45        v1, v2 = df
46        sns.lmplot(v1, v2, data=df, fit_reg=True)
47        print(stdev)
48    else:
```

```

49     print("Invalid Input")
50
51
52 # SUB FUNCTION
53 def check(file): # defining function check
54     import re # importing regex
55     csv = re.compile(r'.*\.csv') # will search for input ending in .csv
56     file = csv.search(file) # returns first match
57     return bool(file) # if the input ends in .csv, this function will return True

```

3 Results

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4 Discussion

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