INTERNSHIP REPORT

ON

PYTHON COMPITATIVE CODEING

Internship Report is submitted

In accordance with requirement of degree of

BACHELOR OF TECHNOLOGY

IN

ELECTRICAL AND ELECTRONICS ENGINEERING
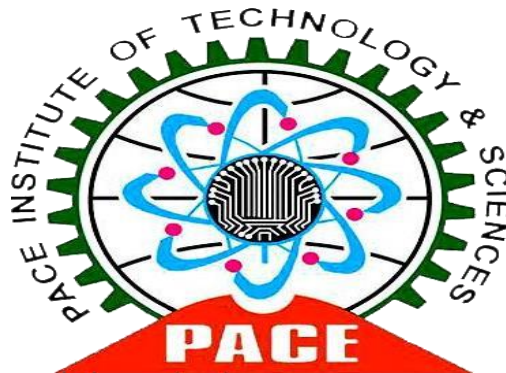
Submitted by

A.NAVYA

21KQ1A0262

Under the Mentorship of

SRAVAN MANTRI

DEPARTMENT OFELECTRICAL AND EL ECTRONICS ENGINEERING

PACE INSTITUTE OF TECNOLOGY AND SCIENCES (AUTONOMOUS)

(AffiliatedtoJawaharlalNehruTechnologicalUniversityKakinada,Kakinada&

Accredited by NAAC 'A' GRADE,An ISO 9001-2015 Certified Institution)

NH-16, Valluru   Post , Prakasam District, A.P-523272.

(2024-2025)

PROJECT TITTLE

PATIENT PULSE ANALYSIS

Date:june 11th 2024

Name:A.navya

ABSTRACT: This project is about brief explination and display about patient pulse analysis. In this analysis we verify how many female patients and male patients are there with there age differences and heart rate, blood pressure, sugar level differences and who has maximum and minimum heart rate and blood pressure and sugar level.

DESCRIPTION: This project is about patient pulse analysis . we take the input as the patient health details .we analysis the patient health conditions based on heart rate, blood pressure and sugar levels.

Requirements:

Functional requirements:

.patient details: user can take input as number of patients

gender: user can take gender differences and store

.condition of patient: user can take the maximum health rate and blood pressure and sugar level

Non functional requirements:

Performance: The system is provide real time analysis with minimal latency to ensure timely patient monitoring

Reliability: It should be highly dependable ensuring accurate pulse measurements consistently

Scalability: The system should be able to handle varying loads from individual patient monitoring to large scale health care facilities

Security: protecting patient data is crucial so the system must comply with health care privacy regulations and employ robust encryption methods.

Usability: The interface should be intuitive and user friendly and health care professionals to easily interpret and utilize the pulse analysis data.

Accuracy: The analysis should be highly accurate with minimal margin of error to ensure the reliability of the diagnostic information provided.

APPROACH:

1.Data acquisition: obtain the pulse data from the patient using sensors such as photo plethysmo graphy (ppg) sensors which measure changes in blood volume in the microvascular bed of tissue .

2.signal processing : pre process the raw pulse data to remove noise and artifacts and extract relevant features such as pulse rate ,pulse wave form morphology and variability .

3.Features extraction: Identify key features from the processed pulse that are indicative of the patients health status.

4.Pattren Recognition: Analyze the extracted features using pattern Recognition algorithms to identify patterns associated with specific health condition or anomalies

5.descriptive analytics: use statistical methods to summarize and describe historical data .This includes calculating the average health rate and blood pressure and sugar levels and other relevant matrics.

6.Continuous monitoring: Implement continuous monitoring machanisms to track changes in the patients pulse over time , enabling early detection of abnormalities or trends indicative of deteriorating health.

7. Coding : To perform this project to create patient health condition details and analysis of patient pulse .here we can perform a coding using python language.

Program or source code:


```
rakesh.py - C:\Users\EEE\AppData\Local\Programs\Python\Python312\rakesh.py (3.12.3)
File Edit Format Run Options Window Help
import pandas as pd
s = []
f=[]
m=[]
hr=[]
bp=[]
sl=[]
m_age=[]
f_age=[]


def patient(patient_name, gender, age, heart_rate, blood_pressure, sugar_level):
    details = {
        'patient_name': patient_name,
        'gender': gender,
        'age': age,
        'heart_rate': heart_rate,
        'blood_pressure': blood_pressure,
        'sugar_level': sugar_level
    }
    s.append(details)
    if gender=="female":
        f.append(gender)
    else:
        m.append(gender)
n = int(input("Enter the number of patients: "))
for i in range(n):
    patient_name = input("Enter patient name: ")
    gender = input("Enter gender: ")
    age = int(input("Enter age: "))
    heart_rate = int(input("Enter heart rate: "))
    blood_pressure = int(input("Enter blood pressure: "))
    sugar_level = int(input("Enter sugar level: "))
    patient(patient_name, gender, age, heart_rate, blood_pressure, sugar_level)
for i in range(n):
    hr.append(s[i]['heart_rate'])
    bp.append(s[i]['blood_pressure'])
    sl.append(s[i]['sugar_level'])
```

File Edit Format Run Options Window Help

```python
    heart_rate = int(input("Enter heart rate: "))
    blood_pressure = int(input("Enter blood pressure: "))
    sugar_level = int(input("Enter sugar level: "))
    patient(patient_name, gender, age, heart_rate, blood_pressure, sugar_level)
for i in range(n):
    hr.append(s[i]['heart_rate'])
    bp.append(s[i]['blood_pressure'])
    sl.append(s[i]['sugar_level'])
for j in range(n):
    m_age.append(s[j]['age'])
    f_age.append(s[j]['age'])


sorted_s = sorted(s,key=lambda x: x['patient_name'])
for i in sorted_s:
    print(i['patient_name'])




# Display patient details in tabular format
print("patient_name\tgender\tage\theart_rate\tblood_pressure\tsugar_levels")
for details in s:
    print(f"{details['patient_name']}\t\t{details['gender']}\t{details['age']}\t{details['heart_rate']}\t\t{details['blood_pressure']}\
df=pd.DataFrame(s)
print(df)
print({len(f)})
print({len(m)})
print(sorted_s)
print(max(hr))
print(min(hr))
print(max(bp))
print(min(bp))
print(max(sl))
print(min(sl))
print(max(m_age))
print(min(f_age))
```

Ln: 1 Col: 0

OUTPUT:

```
Python 3.12.3 (tags/v3.12.3:f6650f9, Apr  9 2024, 14:05:25) [MSC v.1938 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\EEE\AppData\Local\Programs\Python\Python312\rakesh.py
Enter the number of patients: 20
Enter patient name: srujana
Enter gender: female
Enter age: 20
Enter heart rate: 100
Enter blood pressure: 150
Enter sugar level: 120
Enter patient name: poornima
Enter gender: female
Enter age: 21
Enter heart rate: 100
Enter blood pressure: 120
Enter sugar level: 130
Enter patient name: rakesh
Enter gender: male
Enter age: 25
Enter heart rate: 100
Enter blood pressure: 150
Enter sugar level: 180
Enter patient name: dileep
Enter gender: male
Enter age: 26
Enter heart rate: 150
Enter blood pressure: 120
Enter sugar level: 130
Enter patient name: dipeeka
Enter gender: female
Enter age: 21
Enter heart rate: 100
Enter blood pressure: 120
Enter sugar level: 130
Enter patient name: kavya
Enter gender: female
Enter age: 29
```

Ln: 199 Col: 0

```
Enter age: 29
Enter heart rate: 180
Enter blood pressure: 120
Enter sugar level: 130
Enter patient name: naresh
Enter gender: male
Enter age: 21
Enter heart rate: 100
Enter blood pressure: 120
Enter sugar level: 130
Enter patient name: suresh
Enter gender: male
Enter age: 27
Enter heart rate: 100
Enter blood pressure: 120
Enter sugar level: 150
Enter patient name: naveen
Enter gender: male
Enter age: 22
Enter heart rate: 100
Enter blood pressure: 120
Enter sugar level: 140
Enter patient name: sireesha
Enter gender: female
Enter age: 24
Enter heart rate: 100
Enter blood pressure: 120
Enter sugar level: 130
Enter patient name: madhuri
Enter gender: female
Enter age: 23
Enter heart rate: 120
Enter blood pressure: 130
Enter sugar level: 150
Enter patient name: ram
Enter gender: male
Enter age: 26
Enter heart rate: 100
```

Ln: 199 Col: 0

```
= RESTART: C:\Users\EEE\AppData\Local\Programs\Python\Python312\rakesh.py
```

```
Enter blood pressure: 120
Enter sugar level: 130
Enter patient name: madhuri
Enter gender: female
Enter age: 23
Enter heart rate: 120
Enter blood pressure: 130
Enter sugar level: 150
Enter patient name: ram
Enter gender: male
Enter age: 26
Enter heart rate: 100
Enter blood pressure: 120
Enter sugar level: 150
Enter patient name: siri
Enter gender: female
Enter age: 22
Enter heart rate: 120
Enter blood pressure: 130
Enter sugar level: 180
Enter patient name: lokesh
Enter gender: male
Enter age: 19
Enter heart rate: 100
Enter blood pressure: 120
Enter sugar level: 180
Enter patient name: chari
Enter gender: male
Enter age: 28
Enter heart rate: 100
Enter blood pressure: 120
Enter sugar level: 180
Enter patient name: manoj
Enter gender: male
Enter age: 26
Enter heart rate: 25
Enter blood pressure: 100
Enter sugar level: 120
```

```
Enter patient name: meghana
Enter gender: female
Enter age: 21
Enter heart rate: 100
Enter blood pressure: 150
Enter sugar level: 180
Enter patient name: sruthi
Enter gender: female
Enter age: 16
Enter heart rate: 100
Enter blood pressure: 120
Enter sugar level: 130
Enter patient name: vennela
Enter gender: female
Enter age: 28
Enter heart rate: 100
Enter blood pressure: 120
Enter sugar level: 130
Enter patient name: ramya
Enter gender: female
Enter age: 20
Enter heart rate: 120
Enter blood pressure: 100
Enter sugar level: 180
chari
dileep
dipeeka
kavya
lokesh
madhuri
manoj
meghana
naresh
naveen
poornima
rakesh
ram
ramya
```

```
sireesha
siri
srujana
sruthi
suresh
vennela
  patient_name    gender   age    heart_rate       blood_pressure   sugar_levels
srujana         female   20     100              150              120
poornima                 female   21       100              120              130
rakesh          male     25     100              150              180
dileep          male     26     150              120              130
dipeeka         female   21     100              120              130
kavya           female   29     180              120              130
naresh          male     21     100              120              130
suresh          male     27     100              120              150
naveen          male     22     100              120              140
sireesha                 female   24       100              120              130
madhuri         female   23     120              130              150
ram             male     26     100              120              150
siri            female   22     120              130              180
lokesh          male     19     100              120              180
chari           male     28     100              120              180
manoj           male     26     25               100              120
meghana         female   21     100              150              180
sruthi          female   16     100              120              130
vennela         female   28     100              120              130
ramya           female   20     120              100              180
    patient_name   gender   age    heart_rate    blood_pressure   sugar_level
0      srujana    female    20        100              150            120
1     poornima    female    21        100              120            130
2       rakesh      male    25        100              150            180
3       dileep      male    26        150              120            130
4      dipeeka    female    21        100              120            130
5        kavya    female    29        180              120            130
6       naresh      male    21        100              120            130
7       suresh      male    27        100              120            150
8       naveen      male    22        100              120            140
9     sireesha    female    24        100              120            130
```

```
1       poornima   female    21        100         120         130
2       rakesh       male    25        100         150         180
3       dileep       male    26        150         120         130
4       dipeeka    female    21        100         120         130
5       kavya      female    29        180         120         130
6       naresh       male    21        100         120         130
7       suresh       male    27        100         120         150
8       naveen       male    22        100         120         140
9       sireesha   female    24        100         120         130
10      madhuri    female    23        120         130         150
11      ram          male    26        100         120         150
12      siri       female    22        120         130         180
13      lokesh       male    19        100         120         180
14      chari        male    28        100         120         180
15      manoj        male    26         25         100         120
16      meghana    female    21        100         150         180
17      sruthi     female    16        100         120         130
18      vennela    female    28        100         120         130
19      ramya      female    20        120         100         180
{11}
{9}
[{'patient_name': 'chari', 'gender': 'male', 'age': 28, 'heart_rate': 100, 'blood_pressure': 120, 'sugar_level': 180}, {'patient_na
me': 'dileep', 'gender': 'male', 'age': 26, 'heart_rate': 150, 'blood_pressure': 120, 'sugar_level': 130}, {'patient_name': 'dipeek
a', 'gender': 'female', 'age': 21, 'heart_rate': 100, 'blood_pressure': 120, 'sugar_level': 130}, {'patient_name': 'kavya', 'gender
': 'female', 'age': 29, 'heart_rate': 180, 'blood_pressure': 120, 'sugar_level': 130}, {'patient_name': 'lokesh', 'gender': 'male',
'age': 19, 'heart_rate': 100, 'blood_pressure': 120, 'sugar_level': 180}, {'patient_name': 'madhuri', 'gender': 'female', 'age': 23
, 'heart_rate': 120, 'blood_pressure': 130, 'sugar_level': 150}, {'patient_name': 'manoj', 'gender': 'male', 'age': 26, 'heart_rate
': 25, 'blood_pressure': 100, 'sugar_level': 120}, {'patient_name': 'meghana', 'gender': 'female', 'age': 21, 'heart_rate': 100, 'b
lood_pressure': 150, 'sugar_level': 180}, {'patient_name': 'naresh', 'gender': 'male', 'age': 21, 'heart_rate': 100, 'blood_pressur
e': 120, 'sugar_level': 130}, {'patient_name': 'naveen', 'gender': 'male', 'age': 22, 'heart_rate': 100, 'blood_pressure': 120, 'su
gar_level': 140}, {'patient_name': 'poornima', 'gender': 'female', 'age': 21, 'heart_rate': 100, 'blood_pressure': 120, 'sugar_leve
l': 130}, {'patient_name': 'rakesh', 'gender': 'male', 'age': 25, 'heart_rate': 100, 'blood_pressure': 150, 'sugar_level': 180}, {'
patient_name': 'ram', 'gender': 'male', 'age': 26, 'heart_rate': 100, 'blood_pressure': 120, 'sugar_level': 150}, {'patient_name':
'ramya', 'gender': 'female', 'age': 20, 'heart_rate': 120, 'blood_pressure': 100, 'sugar_level': 180}, {'patient_name': 'sireesha',
'gender': 'female', 'age': 24, 'heart_rate': 100, 'blood_pressure': 120, 'sugar_level': 130}, {'patient_name': 'siri', 'gender': 'f
emale', 'age': 22, 'heart_rate': 120, 'blood_pressure': 130, 'sugar_level': 180}, {'patient_name': 'srujana', 'gender': 'female', '
age': 20, 'heart_rate': 100, 'blood_pressure': 150, 'sugar_level': 120}, {'patient_name': 'sruthi', 'gender': 'female', 'age': 16,
'heart_rate': 100, 'blood_pressure': 120, 'sugar_level': 130}, {'patient_name': 'suresh', 'gender': 'male', 'age': 27, 'heart_rate'
```

Second window:

```
12      siri       female    22        120         130         180
        lokesh       male    19        100         120         180
        chari        male    28        100         120         180
        manoj        male    26         25         100         120
        meghana    female    21        100         150         180
        sruthi     female    16        100         120         130
        vennela    female    28        100         120         130
        ramya      female    20        120         100         180
{11}
{9}
[{'patient_name': 'chari', 'gender': 'male', 'age': 28, 'heart_rate': 100, 'blood_pressure': 120, 'sugar_level': 180}, {'patient_na
me': 'dileep', 'gender': 'male', 'age': 26, 'heart_rate': 150, 'blood_pressure': 120, 'sugar_level': 130}, {'patient_name': 'dipeek
a', 'gender': 'female', 'age': 21, 'heart_rate': 100, 'blood_pressure': 120, 'sugar_level': 130}, {'patient_name': 'kavya', 'gender
': 'female', 'age': 29, 'heart_rate': 180, 'blood_pressure': 120, 'sugar_level': 130}, {'patient_name': 'lokesh', 'gender': 'male',
'age': 19, 'heart_rate': 100, 'blood_pressure': 120, 'sugar_level': 180}, {'patient_name': 'madhuri', 'gender': 'female', 'age': 23
, 'heart_rate': 120, 'blood_pressure': 130, 'sugar_level': 150}, {'patient_name': 'manoj', 'gender': 'male', 'age': 26, 'heart_rate
': 25, 'blood_pressure': 100, 'sugar_level': 120}, {'patient_name': 'meghana', 'gender': 'female', 'age': 21, 'heart_rate': 100, 'b
lood_pressure': 150, 'sugar_level': 180}, {'patient_name': 'naresh', 'gender': 'male', 'age': 21, 'heart_rate': 100, 'blood_pressur
e': 120, 'sugar_level': 130}, {'patient_name': 'naveen', 'gender': 'male', 'age': 22, 'heart_rate': 100, 'blood_pressure': 120, 'su
gar_level': 140}, {'patient_name': 'poornima', 'gender': 'female', 'age': 21, 'heart_rate': 100, 'blood_pressure': 120, 'sugar_leve
l': 130}, {'patient_name': 'rakesh', 'gender': 'male', 'age': 25, 'heart_rate': 100, 'blood_pressure': 150, 'sugar_level': 180}, {'
patient_name': 'ram', 'gender': 'male', 'age': 26, 'heart_rate': 100, 'blood_pressure': 120, 'sugar_level': 150}, {'patient_name':
'ramya', 'gender': 'female', 'age': 20, 'heart_rate': 120, 'blood_pressure': 100, 'sugar_level': 180}, {'patient_name': 'sireesha',
'gender': 'female', 'age': 24, 'heart_rate': 100, 'blood_pressure': 120, 'sugar_level': 130}, {'patient_name': 'siri', 'gender': 'f
emale', 'age': 22, 'heart_rate': 120, 'blood_pressure': 130, 'sugar_level': 180}, {'patient_name': 'srujana', 'gender': 'female', '
age': 20, 'heart_rate': 100, 'blood_pressure': 150, 'sugar_level': 120}, {'patient_name': 'sruthi', 'gender': 'female', 'age': 16,
'heart_rate': 100, 'blood_pressure': 120, 'sugar_level': 130}, {'patient_name': 'suresh', 'gender': 'male', 'age': 27, 'heart_rate'
: 100, 'blood_pressure': 120, 'sugar_level': 150}, {'patient_name': 'vennela', 'gender': 'female', 'age': 28, 'heart_rate': 100, 'b
lood_pressure': 120, 'sugar_level': 130}]
180
25
150
100
180
120
29
16
>>>
```

Explanation:

For this progect of patient pulse analysis, we can analysis the health status of the patients and their problems.

1.User interaction: First user can analysis the patient details ,gender age, health rate ,blood pressure, sugar levels

2. How to approach: For analysis the patient pulse analysis, we approach our mentors for the process and they gauid us how to analysis of patient pulse analysis. In that gaudiness we create a source or code to make a details of the patients health condition.

Conclusion

Regular and systematic pulse analysis is vital for the early detection and management of various health conditions. This essential skill for healthcare providers requires minimal equipment and offers immediate, valuable information about a patient's cardiovascular status.