Assignment for Meeting 1

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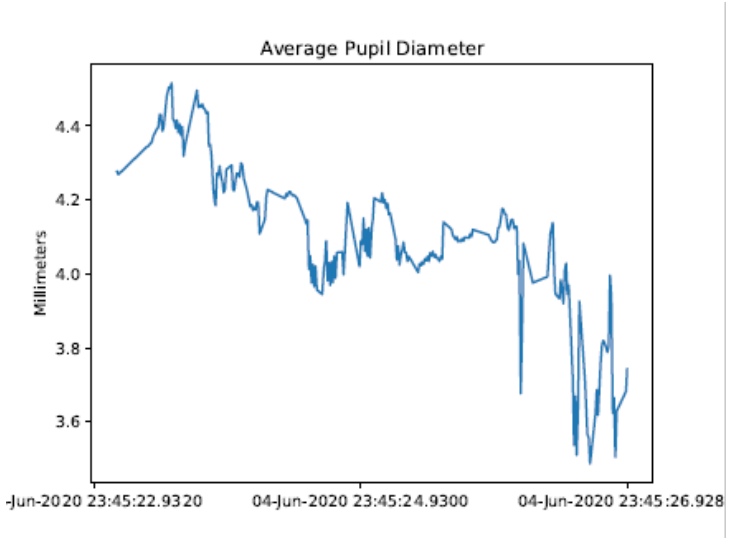
Objective

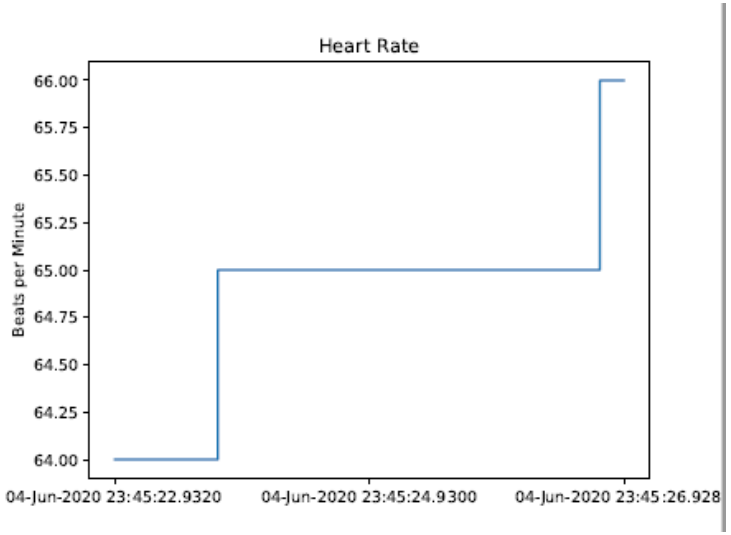
- The objective was to learn the basics of several important python libraries as well as to get a better understanding of the data we will work with

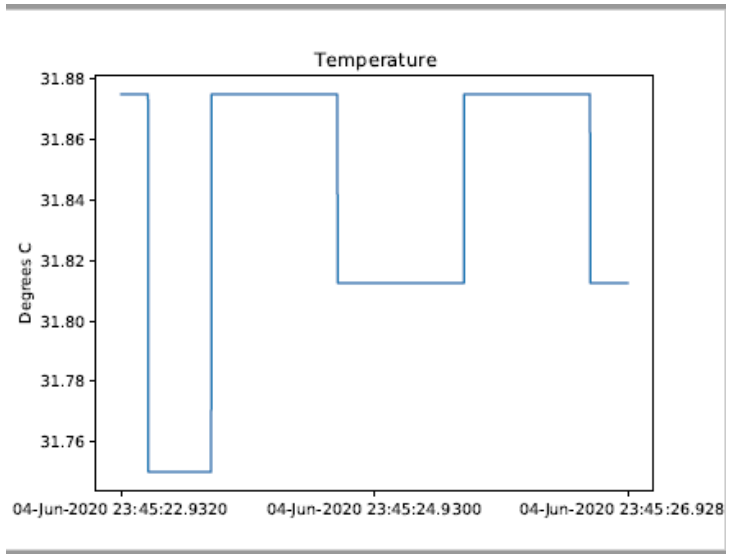
Code:

```
plt.title("Heart Rate")
plt.ylabel("Beats per Minute")
plt.xticks(ticks = [1,1000,1999])
plt.plot_date(data.loc[:,'Datetime'],data.loc[:,'HR'],xdate=True, linestyl
plotHeart = plt.gcf()
plt.figure()

pages = PdfPages('Output.pdf')
pages.savefig(plotTemp)
pages.savefig(plotPupil)
pages.savefig(plotHeart)
pages.close()

cap = cv2.VideoCapture('eyesstream.mp4')
ret, frame = cap.read()

doc =fitz.open("Output.pdf")

image = bytearray(frame.tobytes())
pixI = fitz.Pixmap(fitz.csRGB,frame.shape[0], frame.shape[1], image)
page= doc.newPage(-1,frame.shape[0],frame.shape[1])
rectp = fitz.Rect(0,0,frame.shape[0],frame.shape[1])

page.insertImage(rectp,pixmap = pixI)
rectt= fitz.Rect(0,0,400,400)
paget= doc.newPage(-1,400,400)
text = "The average pupil diameter varies far more rapidly than temp or he
rc = paget.insertTextbox(rectt,text)

doc.save("finished.pdf")
"""
cv2.imshow('frame', frame)
"""
```

```
import pandas as pd
import matplotlib.pyplot as plt
import numpy as np
import cv2
from matplotlib.backends.backend_pdf import PdfPages
import fitz
data = pd.DataFrame(pd.read_csv('data.csv', header = 0, nrows = 2000))

plt.rcdefaults()

plt.xticks(ticks = [1,1000,1999])
plt.title("Temperature")
plt.ylabel("Degrees C")
plt.plot_date(data.loc[:,'Datetime'],data.loc[:,'Temp'],xdate=True,linesty
plotTemp = plt.gcf()
plt.figure()

plt.xticks(ticks = [1,1000,1999])
plt.title("Average Pupil Diameter")
plt.ylabel("Millimeters")
plt.plot_date(data.loc[:,'Datetime'],data.loc[:,'AveragePupilDiameter'],xd
plotPupil = plt.gcf()
plt.figure()
```


Average Pupil Diameter
Millimeters
4.4
4.2
4.0
3.8
3.6
-Jun-2020 23:45:22.9320
04-Jun-2020 23:45:24.9300
04-Jun-2020 23:45:26.928


Heart Rate
Beats per Minute
66.00
65.75
65.50
65.25
65.00
64.75
64.50
64.25
64.00
04-Jun-2020 23:45:22.9320
04-Jun-2020 23:45:24.9300
04-Jun-2020 23:45:26.928


Temperature
Degrees C
31.88
31.86
31.84
31.82
31.80
31.78
31.76
04-Jun-2020 23:45:22.9320
04-Jun-2020 23:45:24.9300
04-Jun-2020 23:45:26.928

Plots

Challenges

- Working with python for the first time
- Figuring out how to get the open cv image into the pdf was difficult
- Ultimately easier than expected for having not used python before