



## **CLASS TEACHER ASSISTANT**

**Komal Raj Tandiya**

**Submitted to: Mr. Hemant Singh D**

**Guided By: Mr. Hemant Singh D**

# STUDENT DECLARATION

I Komal Raj Tandiya here by declare that the work presented in this project report entitled "Class Teacher Assistant" is a work carried out by me and my group at St. Patrick's Academy under the guidance of Mr. Hemant Sir and this work has submitted for purpose of my project to St. Patrick's Academy The project was done in full compliance with the requirements and constraints of the prescribed curriculum and avoiding plagiarism and violations of copyright issues with keeping everything under the ethical and cyber law by India.

Date: 11 october 2021  
Place: Manendragarh

Komal Raj Tandiya  
12<sup>th</sup> / 20211214

# ACCEPTANCE CERTIFICATE

This is to certify that the report entitled "Class Teacher Assistant" is submitted by Komal Raj Tandiya, having Roll number 20211214, from class 12<sup>th</sup>, St. Patrick's Academy, Manendragarh.

A bonafide record of the work carried out by him during the academic year 2021-2022 is accepted for being evaluated.

Date: 11 October 2021  
Hemant Singh D  
CS Teacher  
St. Patrick's Academy  
Manendragarh (C.G)

# ACKNOWLEDGEMENT

I would like to express my deepest appreciation to all those who provided me the possibility to complete this report. It is a genuine pleasure to express my deep sense of thanks and gratitude to my mentor and guide **Mr. Hemant S D**. His dedication, scholarly advice and scientific approach have helped me to very great extent and mainly responsible for completing my work.

I would also like to thank my school teachers and my principal and school staff, SPA School for providing his sincere guidance and opportunity to complete my project.

I am thankful for exceptional help to every friend of my class at SPA and friends for their great sources of help and cooperation in every field.

I express my gratitude towards parents and uncle....for their support in various non-technical matters and providing a healthy environment for completing my project in the lockdown environment.

I express my greatest regards to my parents and especially my sister for their co-operation, understanding and constant encouragement which were the sustaining factors in carrying out the project successfully.

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# Abstract

The aim of project is to prepare a result for individual student with the help of given data which is given by our class teacher Mr. Sanjay sir.

To achieve this, I am going to use python to develop our program with the help of its supporting modules that is:

- Pandas
- matplotlib
- numpy

With the help of panda module we are going to read data from CSV file that is given from my class teacher Mr. Sanajay sir and my teacher Mr. Hemant sir.

Again convert individual student's data into respective CSV file. Which contain individual student's marks, percentage and aggregate in form of result:

## 1.Introduction

The main motive of our project is to make a software for our class teachers in which they can make the results of students with ease, they just have to input some data of the students and the software will process the input data and give them the result as output , this will help them a lot.

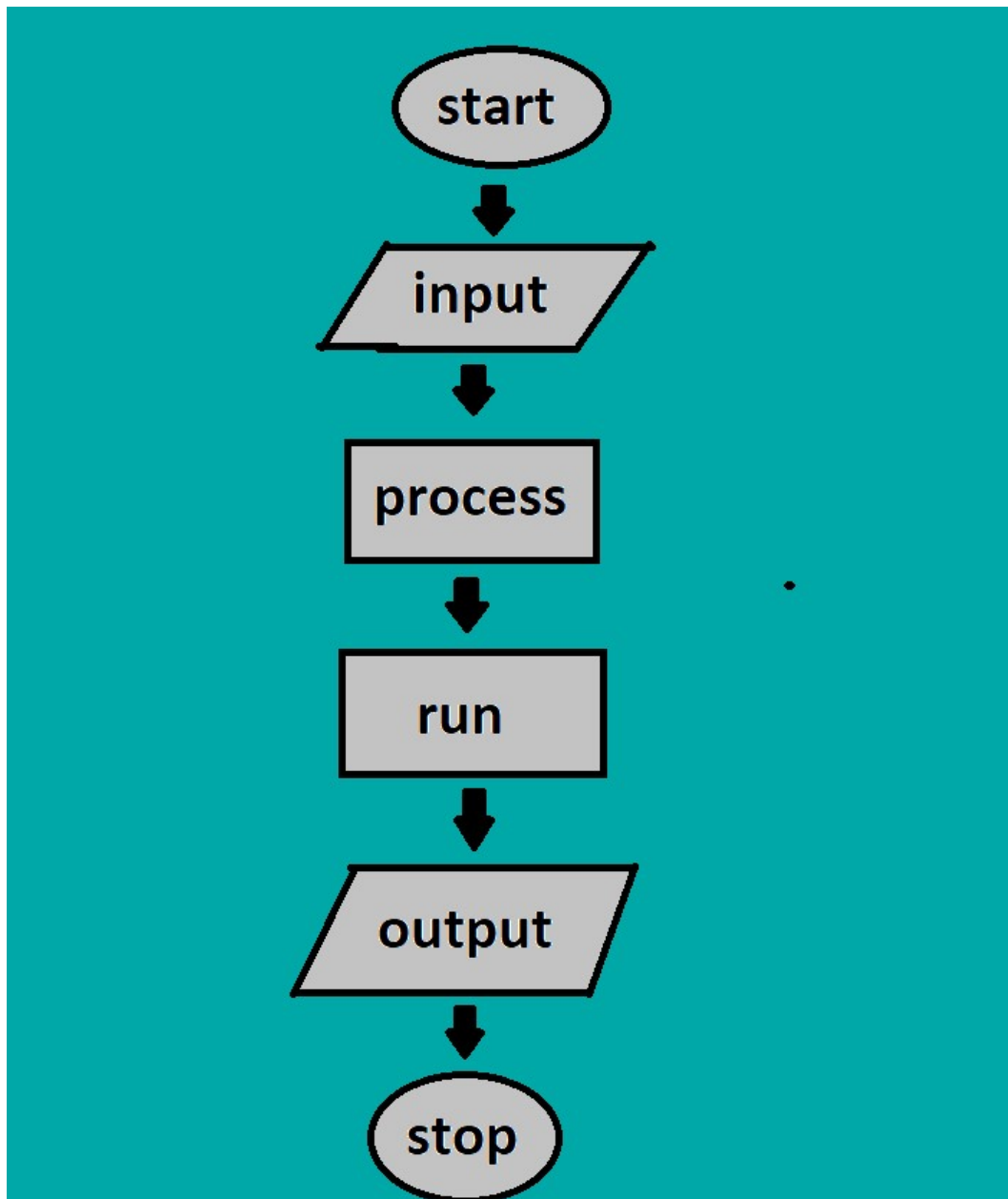


Figure 1-1 shows the flow chart/ of program

### 1.1. Problem statement

- It's is hard to generate results for every students and keep track of each and every single students,
- Track record of progress for every students

### 1.2. Objective

The aim of project is to prepare a result for individual student with the help of given data which is given by our class teacher Mr. Sanjay sir. It can be use for any result as long as user follows the format of csv file.



## 2.Getting Started with Python

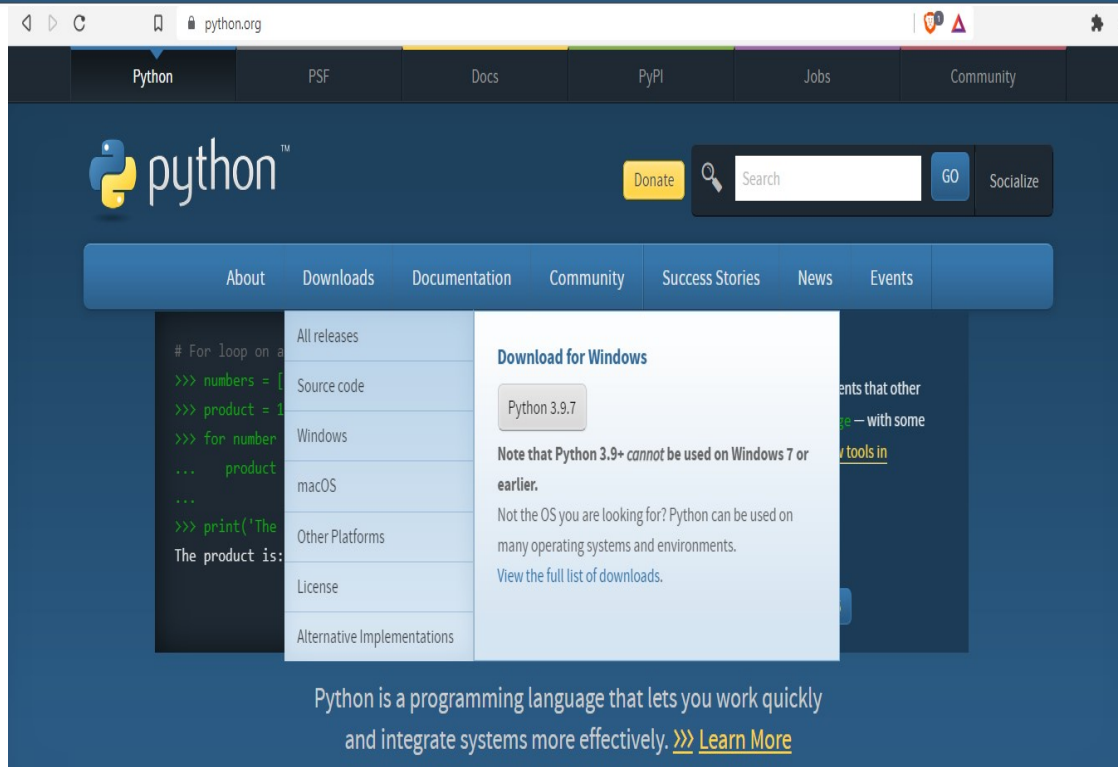
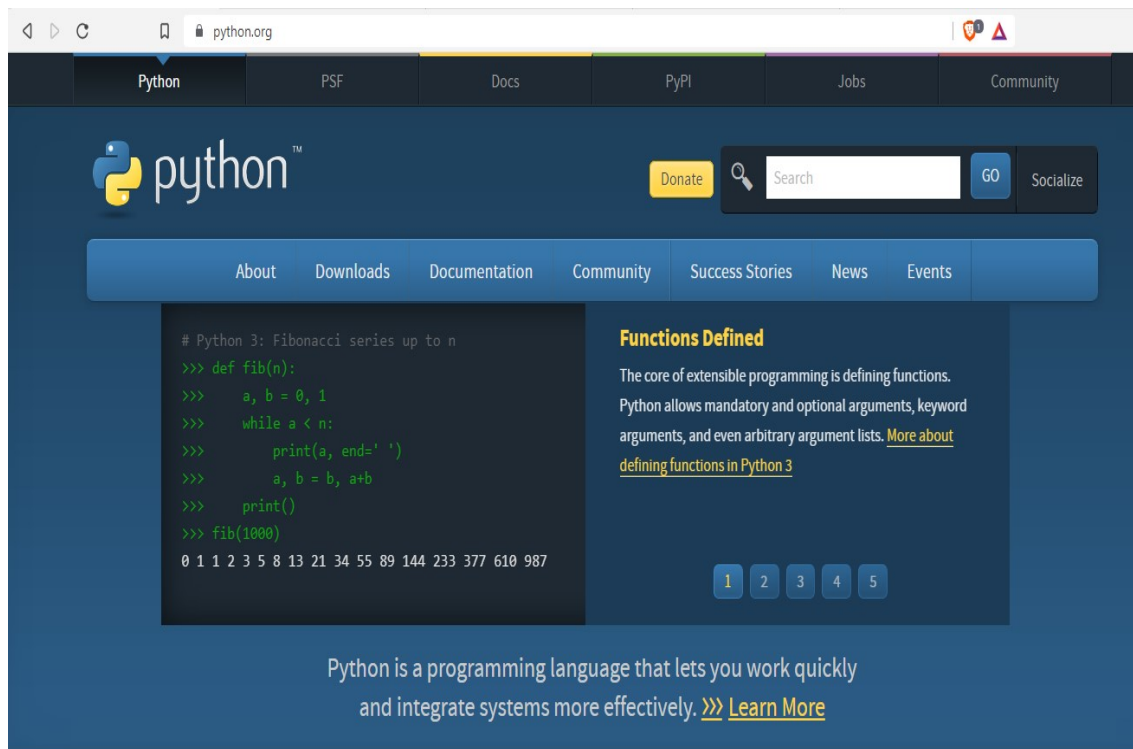
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### 2.1 Introduction

Python is a widely used general-purpose, high level programming language. It was created by Guido van Rossum in 1991 and further developed by the Python Software Foundation. It was designed with an emphasis on code readability, and its syntax allows programmers to express their concepts in fewer lines of code. Python is a programming language that lets you work quickly and integrate systems more efficiently.

### 2.2 Installing python on system

Open your web browser and in url section search [python.org](https://python.org) you will find python latest version and download it and open it after download finished, open the program and follow the instruction to install.



## 2.Pandas

---

### 3.1 Introduction

Pandas is a Python library used for working with data sets. It has functions for analyzing, cleaning, exploring, and manipulating data. The name "Pandas" has a reference to both "Panel Data", and "Python Data Analysis" and was created by Wes McKinney in 2008.

### 3.2. Why Use Pandas?

Pandas allows us to analyze big data and make conclusions based on statistical theories. Pandas can clean messy data sets, and make them readable and relevant. Relevant data is very important in data science.

### 3.3. Installation of Pandas

If you have Python and PIP already installed on a system, then installation of Pandas is very easy.

Install it using this command:

```
C:\Users\Your Name>pip install pandas
```

```
C:\Users\user>py -m pip install pandas
Requirement already satisfied: pandas in c:\users\user\appdata\local\programs\python\python39\lib\site-packages (1.2.5)
Requirement already satisfied: pytz>=2017.3 in c:\users\user\appdata\local\programs\python\python39\lib\site-packages (from pandas) (2021.1)
Requirement already satisfied: numpy>=1.16.5 in c:\users\user\appdata\local\programs\python\python39\lib\site-packages (from pandas) (1.21.0)
Requirement already satisfied: python-dateutil>=2.7.3 in c:\users\user\appdata\local\programs\python\python39\lib\site-packages (from pandas) (2.8.1)
Requirement already satisfied: six>=1.5 in c:\users\user\appdata\local\programs\python\python39\lib\site-packages (from python-dateutil>=2.7.3->pandas) (1.16.0)
```

## 4. Matplotlib

---

### 4.2. Introduction

Matplotlib is a low level graph plotting library in python that serves as a visualization utility. Matplotlib was created by John D. Hunter. Matplotlib is open source and we can use it freely. Matplotlib is mostly written in python, a few segments are written in C, Objective-C and Javascript for Platform compatibility.

### 4.3. Installing matplotlib

If you have Python and PIP already installed on a system, then installation of Matplotlib is very easy. Install it using this command:

```
C:\Users\Your Name>pip install matplotlib
```

```
C:\Users\user>py -m pip install matplotlib
Requirement already satisfied: matplotlib in c:\users\user\appdata\local\programs\python\python39\lib\site-packages (3.4.2)
Requirement already satisfied: kiwisolver>=1.0.1 in c:\users\user\appdata\local\programs\python\python39\lib\site-packages (from matplotlib) (1.3.1)
Requirement already satisfied: python-dateutil>=2.7 in c:\users\user\appdata\local\programs\python\python39\lib\site-packages (from matplotlib) (2.8.1)
Requirement already satisfied: pillow>=6.2.0 in c:\users\user\appdata\local\programs\python\python39\lib\site-packages (from matplotlib) (8.2.0)
Requirement already satisfied: numpy>=1.16 in c:\users\user\appdata\local\programs\python\python39\lib\site-packages (from matplotlib) (1.21.0)
Requirement already satisfied: pyparsing>=2.2.1 in c:\users\user\appdata\local\programs\python\python39\lib\site-packages (from matplotlib) (2.4.7)
Requirement already satisfied: cyycler>=0.10 in c:\users\user\appdata\local\programs\python\python39\lib\site-packages (from matplotlib) (0.10.0)
Requirement already satisfied: six in c:\users\user\appdata\local\programs\python\python39\lib\site-packages (from cyycler>=0.10->matplotlib) (1.16.0)
```

## 5. Working principal of project

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### 5.2. Introduction

The aim of project is to prepare a result for individual student with the help of given data which is given by our class teacher Mr. Sanjay sir.

To achieve this, I am going to use python to develop our program with the help of its supporting modules that is:

- Pandas
- matplotlib
- numpy

With the help of panda module we are going to read data from CSV file that is given from my class teacher Mr. Sanjay sir and my cs teacher Mr. Hemant sir.

Again convert individual student's data into respective CSV file. Which contain individual student's marks, percentage and aggregate in form of result:

#what is our output is going to be end result will be to ease the work of result making in our school, primary we are making for our class.

### 5.3. Working of program

We're going to run this program with the help of python and its libraries (i.e Pandas, Matplotlib and Numpy). The installation process and the working of these libraries are mentioned above

While using this program, teachers have to put the students name, class and roll no. on the software and it will provide them the result of a particular student with their (name , subject wise numbers , Dob , parents name, average, and grades) and at the same time if a teacher want the result of whole class this software will provide them that too and it will include all the datas of students and also the graphs (pie chart, bar chart) according to the result.

For this, the program will need a proper data of students to be inputted first and then it will process the given data with the help of some codes (mentioned below in Appendix 1 ) and give the result as output. (mentioned below).





## Amrita Singh Jaudon's Result

	A	B	C	D	E	F	G	H	I	J	K	L
1	SUB	UT	Half yearly	Finals								
2	Maths	80	80	80								
3	English	95	95	95								
4	Physics	85	85	85								
5	Chemistry	80	80	80								
6	com/hin	79	79	79								
7	PE	50	60	51								
8	Average	78.16667	79.83333	78.33333								

## Hemant Singh D's Result

	A	B	C	D	E	F	G	H	I	J	K	L
1	SUB	UT	Half yearly	Finals								
2	Maths	80	80	80								
3	English	95	95	95								
4	Physics	85	85	85								
5	Chemistry	80	80	80								
6	com/hin	79	79	79								
7	PE	50	60	51								
8	Average	78.16667	79.83333	78.33333								

## Final result

```
===== RESTART: C:/Users/user/Desktop/my_project.py =====
srno      Name      Roll no.  ... Chemistry3 com/hin3 PE3
0 1 Amrita Singh Jaudon 10 ... 80.0 79.0 51
1 2 Nimesh Kharat 34 ... 78.0 80.0 65
2 3 Jhalak Kakani 23 ... 74.0 85.0 60
3 4 Himanshu Mishra 22 ... 65.0 87.0 55
4 5 Akash Verma 6 ... 62.0 90.0 65
5 6 Nidhi Ahirwar 35 ... 88.0 92.9 74
6 7 Shweta Pancholi 52 ... 52.2 95.8 66
7 8 Hemant Singh D 21 ... 47.3 98.7 85

[8 rows x 28 columns]
Name: Hemant Singh D
SUB UT Half yearly Finals
0 Maths 80.000000 80.000000 80.000000
1 English 95.000000 95.000000 95.000000
2 Physics 85.000000 85.000000 85.000000
3 Chemistry 80.000000 80.000000 80.000000
4 com/hin 79.000000 79.000000 79.000000
5 PE 50.000000 60.000000 51.000000
6 Average 78.166667 79.833333 78.333333
```



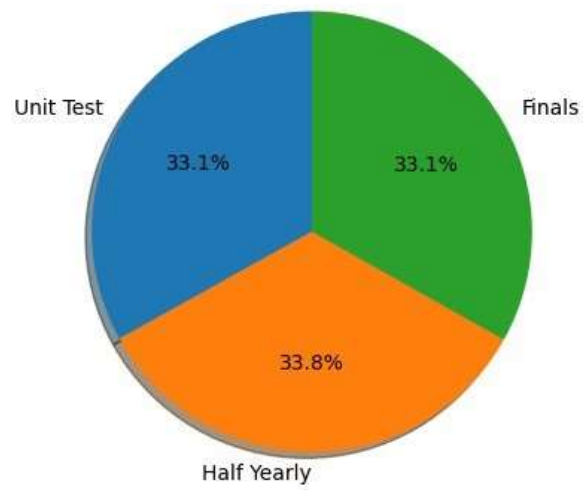


Fig 6-1 over all performance of year

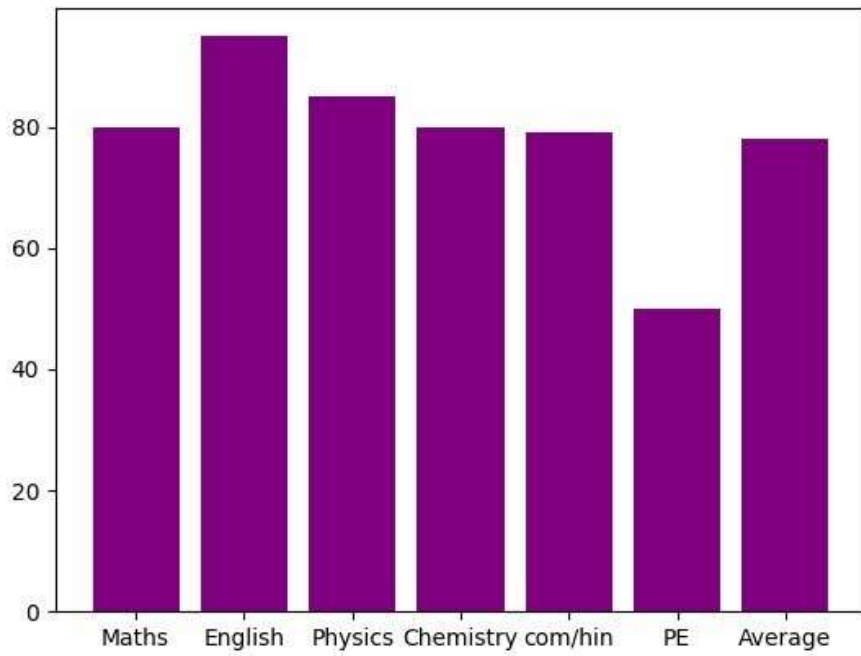


Fig 6-2 Visual Record of first exam

## Appendix-1

```
.....
import numpy as np

import pandas as pd

import matplotlib.pyplot as plt


#C:/Users/user/Desktop/

df = pd.read_csv("C:/Users/user/Desktop/student1.csv")


marks = df[['Maths1','English1', 'Physics1', 'Chemistry1', 'com/hin1', 'PE1',
            'Maths2','English2', 'Physics2', 'Chemistry2', 'com/hin2', 'PE2',
            'Maths3','English3', 'Physics3', 'Chemistry3', 'com/hin3', 'PE3']]

print(df)

data = pd.DataFrame(marks).set_index(df['Name'])


def grade(num):
    if num >= 90 and num <=100:
        return 'A+'
    elif num > 80 and num <90:
        return 'A'
    elif num > 70 and num <80:
        return 'B+'
    elif num > 60 and num <70:
        return 'B'
    elif num > 50 and num <60:
        return 'C'
    .....
```

```

.....
elif num > 40 and num <50:

    return 'D'

elif num > 33 and num <40:

    return 'E'

elif num > 0 and num <30:

    return 'F'


name = df['Name']
na=list(name)
marks_ = data.loc[na[0]]
ut1 = list(marks_[0:6])
hlfyr = list(marks_[6:12])
final = list(marks_[12:24])
# calculating avg, % etc
ut = sum(ut1)/6
hl = sum(hlfyr)/6
f = sum(final)/6
ut1.append(ut)
hlfyr.append(hl)
final.append(f)
for i in range(len(name)):
    #print(data.loc[na[i]])
    file = name[i]
    df3 = {'SUB':['Maths','English','Physics','Chemistry','com/hin','PE', 'Average'],
           'UT':ut1,
           'Half yearly':hlfyr,
           'Finals': final
           #list(data.loc[na[i]])
           }
.....

```

```

.....
df2 = pd.DataFrame(df3)

df2.to_csv('C:/Users/user/Desktop/Sparkel/'+file+'.csv', index=False)


dataframe = pd.DataFrame(df2)

print("Name:",file)

print(dataframe)


labels = 'Unit Test', 'Half Yearly', 'Finals'

sizes = [ut, hl, f]

#explode = (0, 0.1, 0, 0) # only "explode" the 2nd slice (i.e. 'Hogs')


plt.pie(sizes, labels=labels, autopct='%1.1f%%',
        shadow=True, startangle=90)

plt.show()


names = ['Unit', 'Half yr', 'Final']

values = [ut, hl, f]

plt.bar(names, values)

plt.show()

mrk = dataframe

mr1 = mrk['UT']

mr1[0:6]

values = list(mr1)

subjects = dataframe['SUB']

names = list(subjects)


plt.bar(names, values, color='purple')
.....

```

.....  
plt.show()

.....