ST. PATRICK'S ACADEMY

MANENDRAGARH

CLASS TEACHER ASSISTANT

Sanskriti Gupta

Submitted to: Mr. Hemant Singh D

Guided By: Mr. Hemant Singh D

STUDENT DECLARATION

I Sanskriti Gupta 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 Sanskriti Gupta

Place: Manendragarh 12th / 20211222

ACCEPTANCE CERTIFICATE

This is to certify that the report entitled "Class Teacher Assistant" is submitted by Sanskriti Gupta, having Roll number 20211222, from class 12th 'A', St. Patrick's Academy, Manendragarh.

A bonafide record of the work carried out by him during the acadamic 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.

Contents

1.Introduction 7
1.1. Problem statement 8
1.2. Objective 8
2.Getting Started with Python 9
2.1 Introduction 9
2.2 Installing python on system 9
2.Pandas 11
3.1 Introduction 11
3.2. Why Use Pandas? 11
3.3. Installation of Pandas 11
4. Matplotlib 12
4.2. Introduction 12
4.3. Installing matplotlib 12
5. Working principal of project 13
5.2. Introduction 13
5.3. Working of program 14
6. Results/ discussion 15
Akash Verma's Result 15
Amrita Singh Jaudon's Result 16
Appendix-1 18

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.

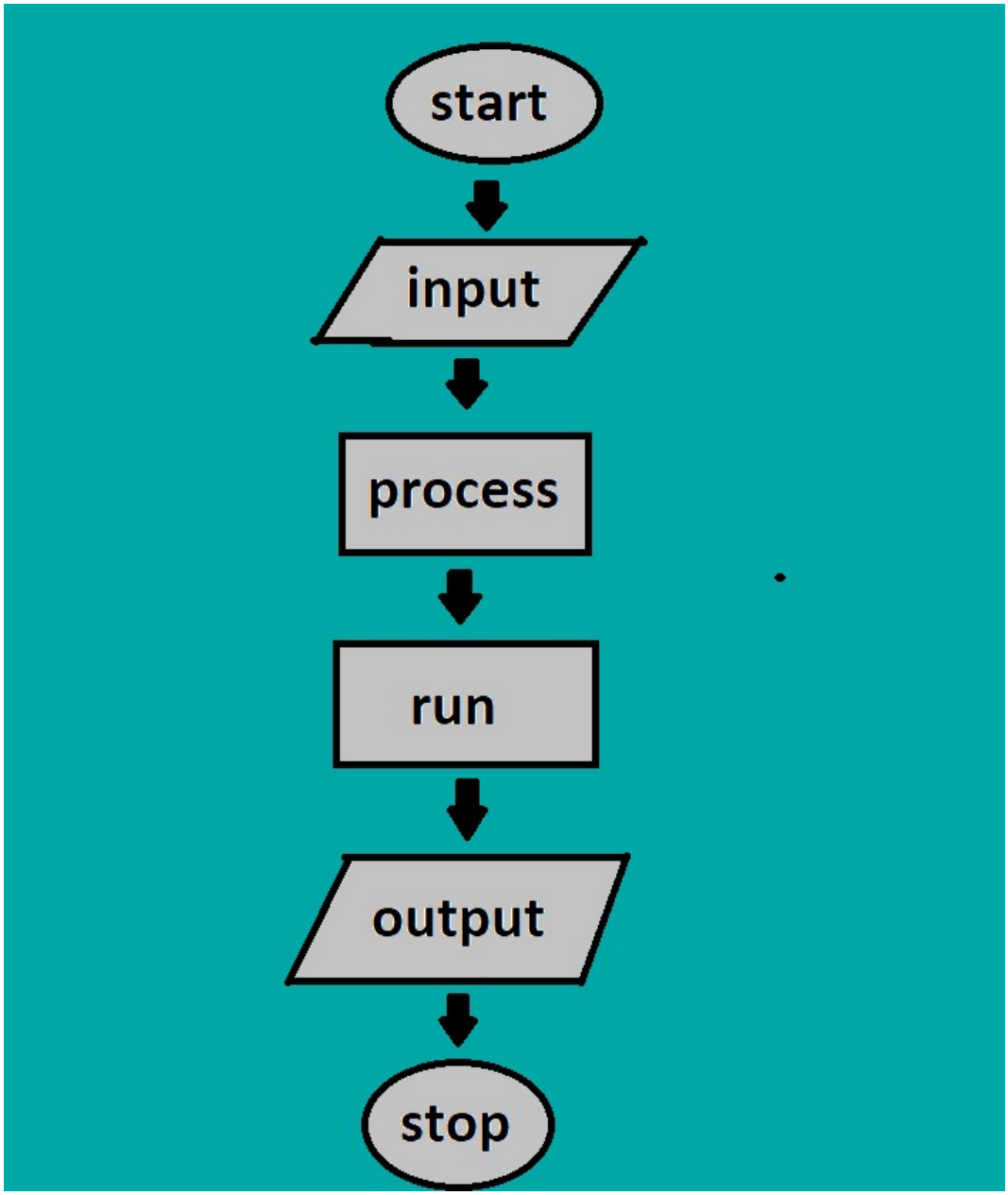


Figure 1-1 shows the flow chart/ of program

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

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 you will find python latest version and download it and open it after download finished, open the program and follow the instruction to install.

python.org

Python | PSF | Docs | PyPI | Jobs | Community

python™

Donate | Search | GO | Socialize

About | Downloads | Documentation | Community | Success Stories | News | Events

```
# Python 3: Fibonacci series up to n
>>> def fib(n):
>>>     a, b = 0, 1
>>>     while a < n:
>>>         print(a, end=' ')
>>>         a, b = b, a+b
>>>     print()
>>> fib(1000)
0 1 1 2 3 5 8 13 21 34 55 89 144 233 377 610 987
```

Functions Defined

The core of extensible programming is defining functions. Python allows mandatory and optional arguments, keyword arguments, and even arbitrary argument lists. More about defining functions in Python 3

1 2 3 4 5

Python is a programming language that lets you work quickly and integrate systems more effectively. >>> Learn More

python.org

Python | PSF | Docs | PyPI | Jobs | Community

python™

Donate | Search | GO | Socialize

About | Downloads | Documentation | Community | Success Stories | News | Events

```
# For loop on a
>>> numbers = [
>>> product = 1
>>> for number
...     product
...
>>> print('The
The product is:
```

All releases
Source code
Windows
macOS
Other Platforms
License
Alternative Implementations

Download for Windows

Python 3.9.7

Note that Python 3.9+ *cannot* be used on Windows 7 or earlier.

Not the OS you are looking for? Python can be used on many operating systems and environments.

View the full list of downloads.

ents that other
ge — with some
tools in

Python is a programming language that lets you work quickly and integrate systems more effectively. >>> Learn More

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: cycler>=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 cycler>=0.10->matplotlib) (1.16.0)
```

5. Working principal of project

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

.

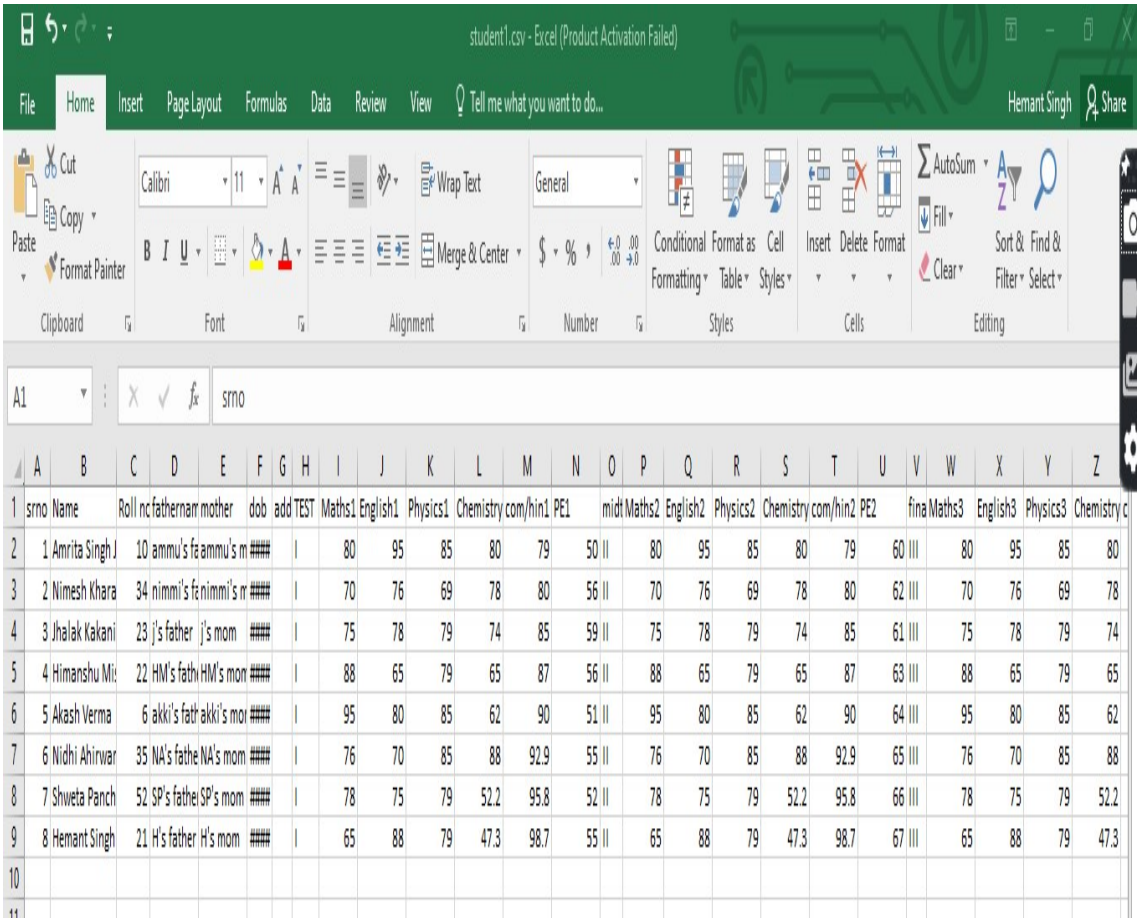
We're going to run this program with the help of python and its libraries (i.e Pandas, Matplotlib and Numpy). The installation process and the working of these libraries are mentioned above

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).

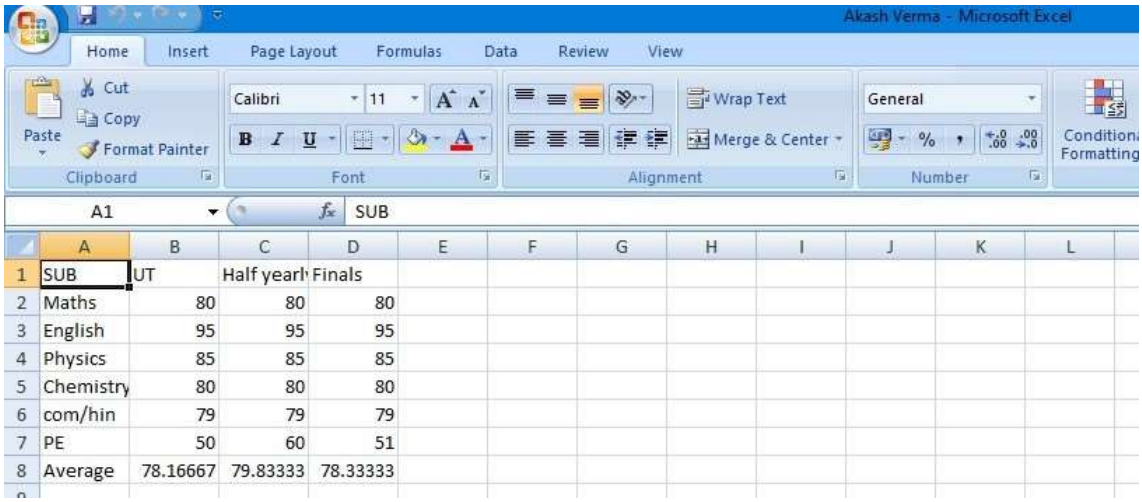
6. Results/ discussion

Actual data in csv format



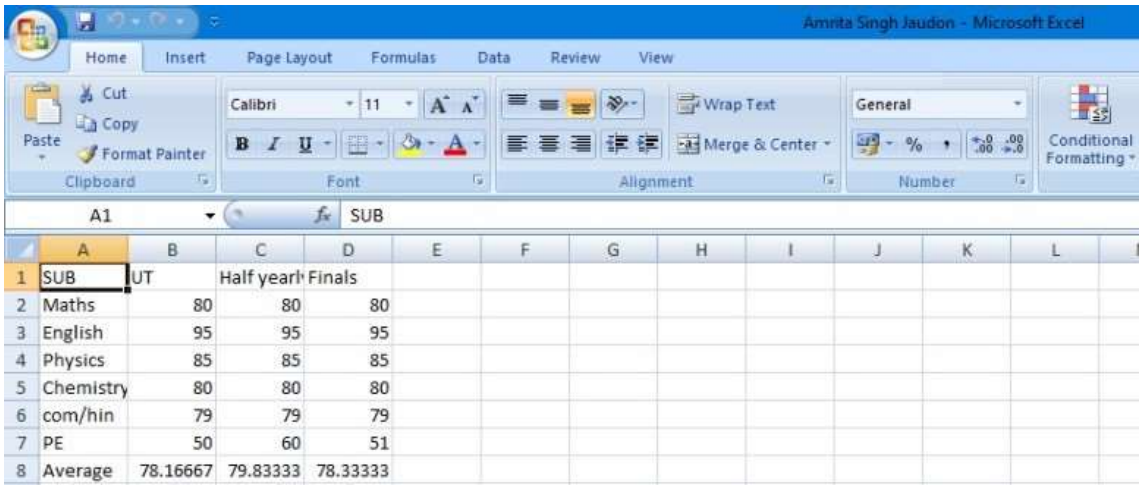
srno	Name	Roll nc	fathernar	mother	dob	add	TEST	Maths1	English1	Physics1	Chemistry	com/hin1	PE1	midt	Maths2	English2	Physics2	Chemistry	com/hin2	PE2	fina	Maths3	English3	Physics3	Chemistry c
1	Amrita Singh J	10	ammu's fa	ammu's m	####		I	80	95	85	80	79	50	II	80	95	85	80	79	60	III	80	95	85	80
2	Nimesh Khara	34	nimmi's fa	nimmi's m	####		I	70	76	69	78	80	56	II	70	76	69	78	80	62	III	70	76	69	78
3	Jhalak Kakani	23	j's father	j's mom	####		I	75	78	79	74	85	59	II	75	78	79	74	85	61	III	75	78	79	74
4	Himanshu Mi	22	HM's fath	HM's mon	####		I	88	65	79	65	87	56	II	88	65	79	65	87	63	III	88	65	79	65
5	Akash Verma	6	akki's fath	akki's mor	####		I	95	80	85	62	90	51	II	95	80	85	62	90	64	III	95	80	85	62
6	Nidhi Ahirwar	35	NA's fathe	NA's mom	####		I	76	70	85	88	92.9	55	II	76	70	85	88	92.9	65	III	76	70	85	88
7	Shweta Panch	52	SP's father	SP's mom	####		I	78	75	79	52.2	95.8	52	II	78	75	79	52.2	95.8	66	III	78	75	79	52.2
8	Hemant Singh	21	H's father	H's mom	####		I	65	88	79	47.3	98.7	55	II	65	88	79	47.3	98.7	67	III	65	88	79	47.3

Akash Verma's Result



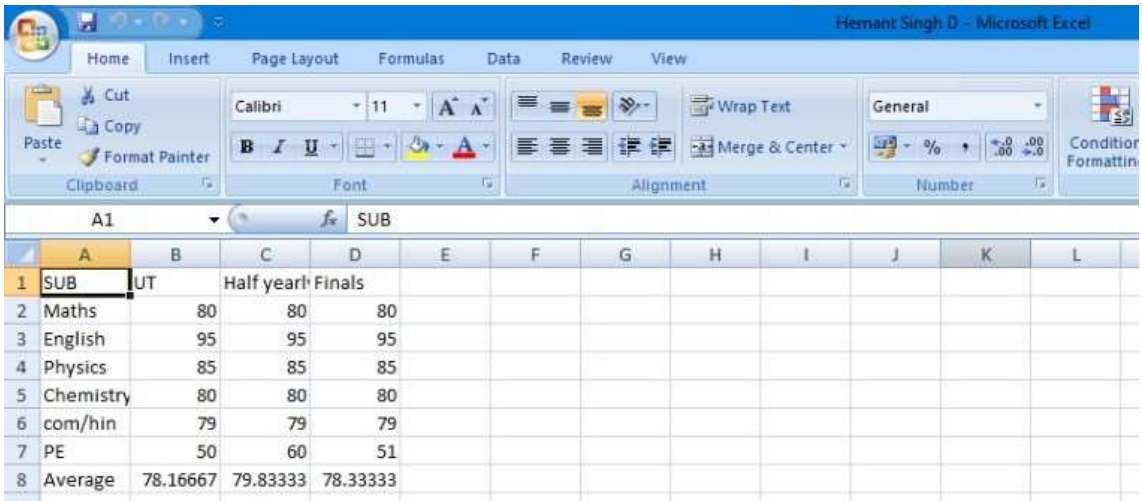
SUB	UT	Half yearl	Finals
Maths	80	80	80
English	95	95	95
Physics	85	85	85
Chemistry	80	80	80
com/hin	79	79	79
PE	50	60	51
Average	78.16667	79.83333	78.33333

Amrita Singh Jaudon's Result



SUB	UT	Half yearl	Finals
Maths	80	80	80
English	95	95	95
Physics	85	85	85
Chemistry	80	80	80
com/hin	79	79	79
PE	50	60	51
Average	78.16667	79.83333	78.33333

Hemant Singh D's Result



SUB	UT	Half yearl	Finals
Maths	80	80	80
English	95	95	95
Physics	85	85	85
Chemistry	80	80	80
com/hin	79	79	79
PE	50	60	51
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
```

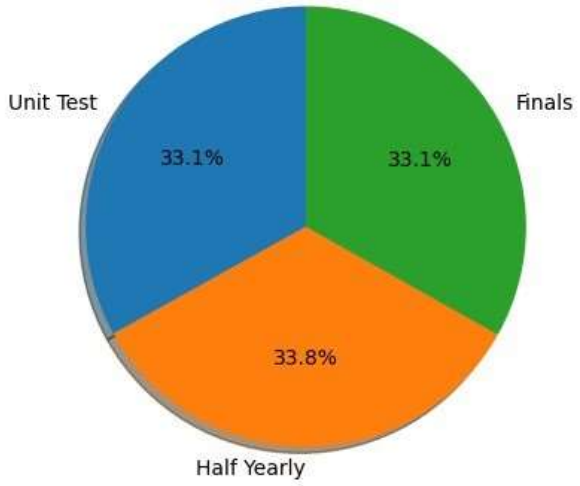


Fig 6-1 over all performance of year

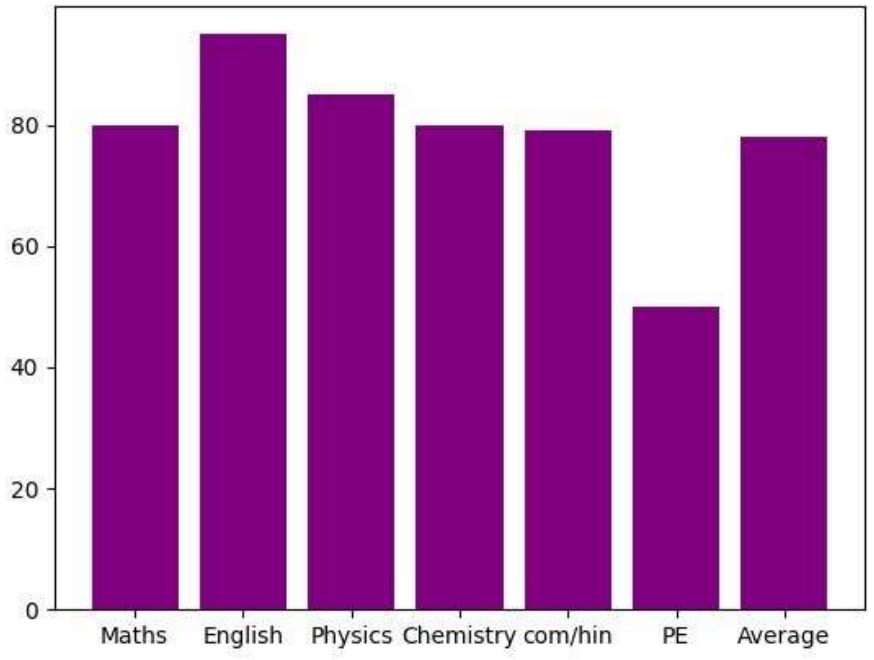


Fig 6-2 Visual Record of first exam

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()
```