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# ATTENDANCE MANAGEMENT SYSTEM (AMS)

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## **Abstract**

Attendance plays an important role in students' academics which are most considered in terms of allowance in examinations or other internals. We are working in writing a program which makes it very helpful in minimising this issue.

The teacher will take the attendance of the list of students from the pre-existing excel csv file and he can get the option of modifying the taken attendance in case any mistakes, the taken attendance will be updated to the same csv file and can be used in further days also. The students who were kept absent will be getting an e-mail regarding their absence to their respective e-mails.

By this, many of the students feel useful and try to manage their schedules and give their best to attend the classes to the fullest.

## **CONTENTS**

1.	<a href="#">Introduction .....</a>	4
2.	<a href="#">Description .....</a>	5
3.	<a href="#">Imported Libraries .....</a>	6
3.1	<a href="#">Pandas .....</a>	6
3.2	<a href="#">Smtplib .....</a>	6
3.3	<a href="#">Email.Message .....</a>	6
4.	<a href="#">Source Code .....</a>	7
5.	<a href="#">Sample Input .....</a>	11
6.	<a href="#">Sample Output .....</a>	12
7.	<a href="#">Sample CSV File .....</a>	13
7.1	<a href="#">Before .....</a>	13
7.2	<a href="#">After .....</a>	13
8.	<a href="#">E-mail Message .....</a>	14
9.	<a href="#">Future and Conclusion .....</a>	15
10.	<a href="#">References .....</a>	16

## **1. INTRODUCTION**

Basically our program is a simple attendance marking system.

Our program reads a pre-existing csv file which contains the students' information and allow the user to mark attendance for each student displayed by the program and update that to the csv file. There is also an option to edit the attendance and update the file again.

Once attendance and modification done and the user likes to exit the program the program sends an email to those students who are marked absent in the class.

## **2. DESCRIPTION**

This program helps the user to take the attendance report of a larger data it even allows user to modify a particular students attendance on a particular date and at the end, it notify the students who are absent with an email to their particular mail id.

### **3. IMPORTED LIBRARIES**

#### **3.1 PANDAS**

Pandas is a software library written for the Python programming language for data manipulation and analysis. In particular, it offers data structures and operations for manipulating numerical tables and time series. Data is unavoidably messy in real world. And Pandas is seriously a game changer when it comes to cleaning, transforming, manipulating and analyzing data

#### **3.2 SMTPLIB**

SMTP->SIMPLE MAIL TRANSFER PROTOCOL

The smtplib module defines an SMTP client session object that can be used to send mail to any internet machine with an SMTP or ESMTP listener daemon. It handles sending email and routing email between mail servers

#### **3.3 EMAIL.MESSAGE**

The central class in the email package is the EmailMessage class, imported from the email.message module. It is the base class for the email object model. EmailMessage provides the core functionality for setting and querying header fields, for accessing message bodies, and for creating or modifying structured messages

## **4. SOURCE CODE**

```
import numpy as np
import pandas as pd
import smtplib
from email.message import EmailMessage

#function for automated email
def email_alert(subject, body, to):

    msg = EmailMessage()
    msg.set_content(body)

    msg['subject'] = subject
    msg['to'] = to
    msg['from'] = "python.attendance@gmail.com"

    user = "python.attendance@gmail.com"
    password = "xovsswwosuwkmfge"

    server = smtplib.SMTP("smtp.gmail.com", 587)
    server.starttls()
    server.login(user, password)
    server.send_message(msg)

    server.quit()

class attendance:

    def __init__(self, name, roll):

        self.name=name
        self.roll=roll

    def takeattendance(self):

        while(True):

            self.take=input(f"{self.roll} - {self.name} : ")

            if(self.take=='p' or self.take=='P' or self.take=='A' or
self.take=='a'):

                if(self.take=='P' or self.take=='p'):

                    att_list.append(self.take.upper())
                    break
```

```

        elif(self.take=='A' or self.take=='a'):

            absent_list.append(self.roll)
            att_list.append(self.take.upper())
            break

        elif(not(self.take=='P' or self.take=='p' or self.take=='a' or
self.take=='A')):

            print("\nInvalid input, Please Enter again")

#function to
def stud_attendance():

    date=input("\nEnter date:")

    for i in range(len(name_list)):

        att_list1.append(attendance(name_list[i], roll_list[i]))

    for i in range(len(roll_list)):

        att_list1[i].takeattendance()

    data[date]=att_list

#function to modify attendance
def modify():
    while(True):

        mod=input("\nDo you want to make any modifications (Yes/No): ")

        if(mod.lower()=="no"):
            break

        elif(mod.lower()=="yes"):

            date=input("\nEnter required date(DD/MM/YYYY): ")

            while(True):

                change=input("\nEnter roll number (0 to exit): ")

                if(change=="0"):
                    break

                else:
                    # mod_att = input("Enter modified attendance: ")

```



```
data.loc[data[data['Roll  
No'] == change.upper()].index.tolist(), date] = input("Enter modified attendance:  
")
```

```
break
```

```
name_list=[]  
roll_list=[]  
absent_list=[]  
att_list1=[]  
att_list=[]
```

```
#reading csv file with pandas lib  
data=pd.read_csv("C:/Users/abhia/OneDrive/Desktop/PYTHON  
PROJECT/STUD_data1.csv")
```

```
#storing values of names and roll number in array  
roll_list=data["Roll No"].values  
name_list=data["Name"].values  
data=pd.DataFrame(data)
```

```
#starting screen  
print("\n\n -----> WELCOME TO PYTHON ATTENDANCE MANAGEMNT SYSTEM <----- \n\n  
")
```

```
while(True):
```

```
    print("\n\n1)Take Attendance\n2)Modify Attendance\n3)EXIT\n")
```

```
    choice=int(input("\nEnter your choice: "))
```

```
    if(choice==1):
```

```
        stud_attendance()
```

```
    elif(choice==2):
```

```
        modify()
```

```
    elif(choice==3):
```

```
        break
```

```
    else:
```

```
        print("\nINVALID CHOICE!!")
```

```
#For calling email function providing each students email  
for i in range(0,len(absent_list)):
```

```
email_alert("ABSENCE ALERT", "You have been marked absent for todays  
class", f'{absent_list[i].lower()}@iiitk.ac.in')
```

```
#to store the edited value and save the csv file  
data.to_csv(r"C:\Users\abhia\OneDrive\Desktop\PYTHON PROJECT\STUD_data1.csv",  
index=False)
```

```
print(data)
```

## **5. Sample Input**

```
-----> WELCOME TO PYTHON ATTENDANCE MANAGEMNT SYSTEM <-----
```

- 1)Take Attendance
- 2)Modify Attendance
- 3)EXIT

Enter your choice: █

```
Enter your choice: 1
Enter date:11/11/2021
120CS0006 - SANKALP JAGADUDGU : P
120CS0007 - HIMANSHU : P
120CS0008 - VINOD : P
120CS0009 - NITESH : P
120CS0010 - ABHINEETH : P
120CS0021 - SURYA REGALELLA : A
```

```
Enter your choice: 2
Do you want to make any modifications (Yes/No): YES
Enter required date(DD/MM/YYYY): 11/11/2021
Enter roll number (0 to exit): 120CS0010
Enter modified attendance: A
Enter roll number (0 to exit): 0
```

## **6. SAMPLE OUTPUT**

Enter your choice: 3

	Roll No	Name	11/11/2021
0	120CS0006	SANKALP JAGADUDGU	P
1	120CS0007	HIMANSHU	P
2	120CS0008	VINOD	P
3	120CS0009	NITESH	P
4	120CS0010	ABHINEETH	A
5	120CS0021	SURYA REGALELLA	A

## 7. SAMPLE CSV FILE

### 7.1 BEFORE

	A	B	C
1	Roll No	Name	
2	120CS0006	SANKALP JAGADUDGU	
3	120CS0007	HIMANSHU	
4	120CS0008	VINOD	
5	120CS0009	NITESH	
6	120CS0010	ABHINEETH	
7	120CS0021	SURYA REGALELLA	
8			

### 7.2 AFTER

	A	B	C
1	Roll No	Name	11-11-2021
2	120CS0006	SANKALP JAGADUDGU	P
3	120CS0007	HIMANSHU	P
4	120CS0008	VINOD	P
5	120CS0009	NITESH	P
6	120CS0010	ABHINEETH	A
7	120CS0021	SURYA REGALELLA	A
8			

## 8. E-MAIL MSG

### ABSENCE ALERT

External

Inbox x



**python.attendance@gmail.com**

to me ▼

You have been marked absent for todays class

## **9. Future and Conclusion**

Attendance management is a useful to track how regular the student is and will help to manage their attendance effectively. Code can be even enhanced by adding percentage of attendance a student has at the end of semester which will help to differentiate them to be able to attend exams. Code could be improved with a facial recognition system added to it which will allow to mark attendance via facial recognition.

## **10. References**

10.1 Wikipedia

10.2 Python Website

10.3 Geeks for Geeks

10.4 Stack Overflow

10.5 Tutorials point



