PIMPRI CHICHWAD COLLEGE OF ENGINEERING (PCCOE)
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Experimental Study on

Automatic Attendance Manager using MATLAB

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Problem Statement:

Manual attendance marking is time-consuming and prone to errors. This project aims to automate attendance recording using MATLAB by accepting student data and generating attendance statistics efficiently.

Aim :

To design a MATLAB program that records student attendance and calculates attendance statistics automatically.

Objectives:

- To learn basic MATLAB programming
- To use arrays and loops for data handling
- To calculate attendance percentage mathematically
- To store attendance data in Excel format.

Applications:

- Classroom attendance management
- College laboratories
- Training institutes
- Small organizations

Algorithm (Steps):

1) Start
2) Input number of students
3) Enter student names
4) Take attendance input (1 or 0)
5) Calculate total present and absent
6) Compute attendance percentage
7) Display results
8) Save data to Excel
9) Stop

MATLAB Code:

```
clc;
clear;
```

```
% Step 1: Number of students
n = input('Enter number of students:');
```

```
% Step 2: Enter student names
names= cell(n,1);
for i = 1:n
    names{i} = input(['Enter name of student',num2str(i),':'],'s');
end
```

```
% Step 3: Take attendance (1 = Present, 0 = Absent)
attendance = zeros(n,1);
for i= 1:n
    attendance(i) = input(['Is',names{i},'present? (1 = yes,0=no):']);
end
```

```
% Step 4: Calculate attendance statistics
 presentCount = sum(attendance);
absentCount  = n - presentCount;
percentage = (presentCount /n) * 100;
disp(presentCount);
disp(absentCount);
disp(percentage);
```

```
% Step 5:Display attendance table
T = table(names,attendance,'VariableNames',{'Students_Name','Present'}); disp(T);
```

```
fprintf('Total Present : %d\n', presentCount);
fprintf('Total Absent : %d\n', absentCount);
fprintf('Attendance Percentage: %.2f %%\n',percentage);
```

```
% Step 6: save to Excel
filename = 'AttendanceSheet.xlsx';
writetable(T,filename);
disp('Attendance saved successfully in Excel file.');
```

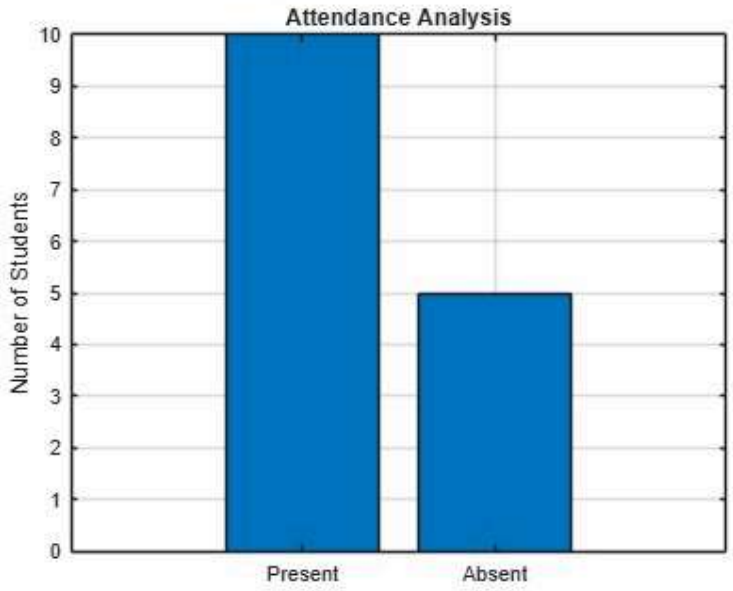
```
figure
bar([presentCount absentCount])
set(gca,'XTicklabel',{'Present','Absent'})
ylabel('Number of Students')
title('Attendance Analysis')
grid on
drawnow
```

Output and Graph:

```
Command Window
Enter number of students:15
Enter name of student1:Pratiksha
Enter name of student2:Ishwari
Enter name of student3:Swati
Enter name of student4:Kranti
Enter name of student5:Gauri
Enter name of student6:Akshata
Enter name of student7:Anushka
Enter name of student8:Vedika
Enter name of student9:Shruti
Enter name of student10:Riya
Enter name of student11:Akansha
Enter name of student12:Anjali
Enter name of student13:Shrawani
Enter name of student14:Arya
Enter name of student15:kunali
IsPratikshapresent? (1 = yes,0=no):1
IsIshwaripresent? (1 = yes,0=no):1
IsSwatipresent? (1 = yes,0=no):1
IsKrantipresent? (1 = yes,0=no):1
IsGauripresent? (1 = yes,0=no):1
IsAkshatapresent? (1 = yes,0=no):1
IsAnushkapresent? (1 = yes,0=no):0
IsVedikapresent? (1 = yes,0=no):0
IsShrutipresent? (1 = yes,0=no):1
IsRiyapresent? (1 = yes,0=no):0
IsAkanshapresent? (1 = yes,0=no):0
IsAnjalipresent? (1 = yes,0=no):1
IsShrawanipresent? (1 = yes,0=no):0
IsAryapresent? (1 = yes,0=no):1
Iskunalipresent? (1 = yes,0=no):1
>>
```

```
    10

     5

   66.6667

    Students_Name    Present
    _____________    _______

    {'Pratiksha'}       1
    {'Ishwari'  }       1
    {'Swati'    }       1
    {'Kranti'   }       1
    {'Gauri'    }       1
    {'Akshata'  }       1
    {'Anushka'  }       0
    {'Vedika'   }       0
    {'Shruti'   }       1
    {'Riya'     }       0
    {'Akansha'  }       0
    {'Anjali'   }       1
    {'Shrawani' }       0
    {'Arya'     }       1
    {'kunali'   }       1

Total Present : 10

Total Absent : 5

Attendance Percentage: 66.67 %

Attendance saved successfully in Excel file.
```

```
Total Present : 10
Total Absent : 5
Attendance Percentage: 66.67 %
Attendance saved successfully in Excel file.
```



◆ Conclusion:

The MATLAB based Attendance Manager successfully automates the attendance process. It reduces manual effort, avoids errors, and provide quick attendance analysis. The project demonstrates the practical application of MATLAB programming in real-world problems.

◆ Future Scope:

- Adding student ID system
- Monthly attendance tracking
- Login and authentication system
- GUI based attendance system