

given to a user either to update the database (1) or to discard the current test image (2). But if a face is not present in database, we have an option to ask from the user either to add unrecognized test image to database or to just exit the program without updating the database as shown in fig. 10.

```
Command Window
reading database..
reading test image..
press 1 to apply preprocessing on test image.... 2 to skip2
unrecognized image...
please update your database
press 1 to add this face to database else press 2 to ignore2
f1 >>
```

Figure 10: Unrecognized Person

5. Conclusion

In this paper, we implemented the face recognition system using Principal Component Analysis and Eigen face approach. The system successfully recognized the human faces and worked well with different facial expressions and addition of salt and pepper noise. The face recognition system was used to create an automatic attendance updating system based on face recognition. This attendance system can be used to take attendance of different individuals on the basis of their face images. The system automatically updates the attendance of the individuals and mark present/absent for them in an excel sheet.

The excel sheet used to update attendance is overwritten every time the program is executed. Hence the user has to save the current attendance in the memory in order to use it for future reference. From the results performed on the database, it is evident that the attendance system based on face recognition performs satisfactorily. Hence it can be concluded that the present algorithm demonstrates better performance with respect to speed, low false positive rate and high accuracy.

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