Project Proposal
for
Software Engineering Course Project

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Idea: Efficient scheduling of public washing machines and getting real time status.

Problem statement :-
This project develops a system to manage washing machine usage in a public washing machine setting typically college hostels.

This project will allow students to view and book free slots of washing machines available in the hostels of IIIT-H. It shall allow users to view and reserve available slots and also check the current availability of machines in real-time.

Congestion is often caused by students seeking availability of washing machines quite often. Many a time queues of buckets(with clothes) throng the washing machine area because the students walk around to inspect the occupancy of individual machines. We propose a software system which would allow the end users to reserve a slot based on the availability in the near future.

Solution Overview :-
This project will provide an app which will show the current status of the washing machine(vacant/occupied), in case it is occupied, the app will show how much time is left before the machine will be vacant.

In order for this to work we assume that appropriate cameras are in place and our system is provided with an image of the display panel of the washing machine. Our system will use computer vision to extract remaining time from the washing machine control panel's image.

The user interface will also provide a calendar view where users can find a free slot and can reserve desired slots.

Following are the proposed features:-

- Each user can access the app using a mobile phone.
- Current status
- View slots (Calendar)
- Reserve a slot
- Cancel a slot
- Alarm before a schedule
- Scheduling assistant(Automatically suggests free slots)

AI/ML/CV Component: Application uses computer vision to identify the remaining time from the washing machine control panel's image.

Distributed Component: The backend code will be implemented incorporating scalability principles so that it does not need any code changes in future when the number of users of the system increases.