"LAB RESERVATION SYSTEM"

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ABSTRACT

There have been many times that if a person wants to use the school or institute's laboratory, they have to walk to the labs and check if they are occupied or not. The whole journey from a class or a staff room can be very exhausting and also sometimes annoying. So we thought of making and establishing a system that helps us know just by a click if the labs are in use or not and if not they can be booked so the other person does not have to be disappointed if they show up to check for the vacant labs.

The lab reservation system in our database based project was done with help of python language. It is very easily accessible as it can be used from any digital smartphone or desktop. This project is very useful for people to book or cancel lab slots by sitting in one place with one cell phone in their hand. This project can be modified for various reservations. The one to book can see the teacher who has booked and the number of students being present in the lab at the particular period.

Keywords: Lab reservation system, Lab , academics

INTRODUCTION

Many times, if a person wants to use a laboratory at a school or institute, they must first walk to the labs and check whether or not they are occupied. The entire trek from a class or a staff room might be tiresome and irritating at times. So we devised and implemented a system that allows us to determine whether the laboratories are in use or not with a single click, and if not, to book them so that the other person is not disappointed when they arrive to look for vacant labs.

The python language was used to create the lab reservation system in our database-driven project. It is really convenient to use because it can be accessed from any digital smartphone or computer. This idea is really handy for folks who want to schedule or cancel lab times while sitting in one spot and holding only one cell phone. This project can be tweaked to fit a variety of reservations. The person making the reservation can see the teacher who has made the reservation as well as the number of students present in the lab at that time.

OBJECTIVES

The objective of this project is to let the students apply the programming knowledge into a real- world situation/problem and exposed the students how programming skills helps in developing a good software.

- Write programs utilizing modern software tools.

- Apply object oriented programming principles effectively when developing small to medium sized projects.

- Write effective procedural code to solve small to medium sized problems.

- Students will demonstrate a breadth of knowledge in computer science, as exemplified in the areas of systems, theory and software development.

- Students will demonstrate ability to conduct a research or applied Computer Science project, requiring writing and presentation skills which exemplify scholarly style in computer science.

LITERATURE SURVEY

Users of the lab, needs to have a prior reservation to use the PCs. To overcome difficulties & drawbacks of the current system a web based solution needed to be implemented. Using the On line Lab Reservation System, users can remotely login & make their reservations aggregating to the allocated times & sequences to suit their software needs. Users can also cancel the reservations they done. In the meantime, users can keep requests on their software needs. Users are also given the opportunity to download software through the web-site. Administrators can update resource details such as user, client, software & hardware details through the web site. Administrators can view all the reservation details in optimized views. Management gets reports regarding the reservation details & the usage of the system. Systems analysis & design was done using object oriented methodologies.

The reservation process was still using manual approach. To make reservation, a user must fill the form; meet the administrator to check lab availability and lastly the admin will approve it. A computer system must be developed to manage the reservation for user request. This system was used multiple intelligent agents that assist the user and the admin to manage the lab reservation based on a few constraints such as holiday and permanent classes. The agents also try to give alternative session if the request session is not available. The agents have ability to evaluate user authentication based on inconsistent action on the system and will keep up the security level based on individual authentication. The collection of user action pattern is recorded then gives direction to the agent to reconstruct its intend action related to user behavior. FIPA-ACL as communication standard between the agents to make them able to be socializes in their environment.

PROPOSED SYSTEM

Today one cannot afford to rely on the fallible human beings of be really wants to stand against today's merciless competition where not to wise saying "to err is human" no longer valid, it's outdated to rationalize your mistake. So, to keep pace with time, to bring about the best result without malfunctioning and greater efficiency so to replace the unending heaps of flies with a much sophisticated hard disk of the computer.

One has to use the data management software. Software has been an ascent in atomization various organisations. Many software products working are now in markets, which have helped in making the organizations work easier and efficiently. Data management initially had to maintain a lot of ledgers and a lot of paper work has to be done but now software product on this organization has made their work faster and easier. Now only this software has to be loaded on the computer and work can be done.

This prevents a lot of time and money. The work becomes fully automated and any information regarding the organization can be obtained by clicking the button. Moreover, now it's an age of computers of and automating such an organization gives the better look.

SYSTEM REQUIREMENTS

i.   OS: WINDOWS 7 OR HIGHER.

ii. RAM: 2 GB OR MORE.

iii. HARD DISK SPACE: 1GB.

iv. PROCESSOR: INTEL PENTIUM DUAL CORE OR MORE.

v.   FLOPPY DISK: FOR BACKUP IF REQUIRED.

SOURCECODE

```
#SOURCE CODE LAB RESERVATION SYSTEM

print("---------------------------WELCOME TO LAB RESERVATION SYSTEM---------------------------")

#creating database

import sqlite3


#Connecting to sqlite

conn = sqlite3.connect('example.db')


#Creating a cursor object using the cursor() method

cursor = conn.cursor()


#creating required tables

cursor.execute("create table if not exists lab_account(acno char(4) primary key,name varchar(30),city char(20),mobileno char(10),reserved lab varchar(50))")
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cursor.execute("create table if not exists labtrans(acno char (4),amount int(6),booklab varchar(50) ,date
,ttype char(1),foreign key (acno) references lab_account(acno))")

conn.commit()

while(True):


    print("1=CREATE ACCOUNT")

    print("2=RESRVATION OF LAB")

    print("3=CANCELLATION OF THE LAB")

    print("4=DISPLAY ACCOUNT")

    print("5=EXIT")


 ch=int(input("Enter your choice:"))


#PROCEDURE FOR CREATING A NEW ACCOUNT OF THE APPLICANT
    if(ch==1):
        print("All information prompted are mandatory   to be filled")
        acno=str(input("Enter account number:"))
        name=input("Enter name(limit 35 characters):")
        city=str(input("Enter city name:"))
        mn=str(input("Enter mobile no.:"))
        reservedlab=""
        cursor.execute("insert                          into                    lab_account
values('"+acno+"','"+name+"','"+city+"','"+mn+"','"+str(reservedlab)+"')")
        conn.commit()
        print("Account is successfully created!!!")


#PROCEDURE FOR RESERVATION OF LABORATORY
    elif(ch==2):
        acno=str(input("Enter account number:"))
        dp=(input("Enter you name:"))
        labname=str(input("Enter Name of Lab:"))
        date=str(input("enter date of reservation:"))
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```
    ttype="d"

    cursor.execute("insert                                    into                              labtrans
values('"+acno+"','"+dp+"','"+labname+"','"+date+"','"+ttype+"')")

    conn.commit()

    print("LABS ARE BEEN SUCCESFULLY RESERVED!!!")


#PROCEDURE FOR CANCELLATION OF LABORATORY

  elif(ch==3):

    acno=str(input("Enter account number:"))

    wd=input("Enter your name:")

    labname=input("Enter lab names to be cancelled:")

    date=str(input("enter date of reservation:"))

    ttype="w"

    cursor.execute("insert                                    into                              labtrans
values('"+acno+"','"+str(wd)+"','"+date+"','"+labname+"','"+ttype+"')")
    conn.commit()

    print("LABS ARE BEEN SUCCESFULLY CANCELLED!!!")


#PROCEDURE FOR DISPLAYING THE ACCOUNT CREATED

  elif(ch==4):

    acno=str(input("Enter account number:"))

    cursor.execute("select * from lab_account where acno='"+acno+"'")

    for i in cursor:

      print(i)

  else:

    break
```

IMPLEMENTATION

The new system can be implemented in any kind of institution that has the facilities of labs. It can be provided by any capable establishment that have the required systems and the digital media like smart phones and desktops.

It can be seen in schools of higher class, senior secondary to pre universities, colleges, universities to P.H.D academies and also the clinics and private labs with hospitals.

They are very efficient and easy to understand and access. They keep records of all the database and people thus the information is easy and efficient to store.

CONCLUSION AND FUTURE WORK

- ❖ It can be modified to use facial recognition and finger prints to access the labs.
- ❖ It can be modified to take in information in voice hangover.
- ❖ It can be modified to make an app too that can be easily and feasibly downloaded.
- ❖ Etc.

Therefore, this research can do the work of many hours in minutes. It can book slots and help you search the history of all the people who visited the lab in the last hour, week, month or even year.

REFERENCES

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