



Mahavir Education Trust's
SHAH & ANCHOR KUTCHHI ENGINEERING COLLEGE
Chembur, Mumbai - 400 088
UG Program in Information Technology

Face Recognition and QR-Code Application.

By:

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Guided by:

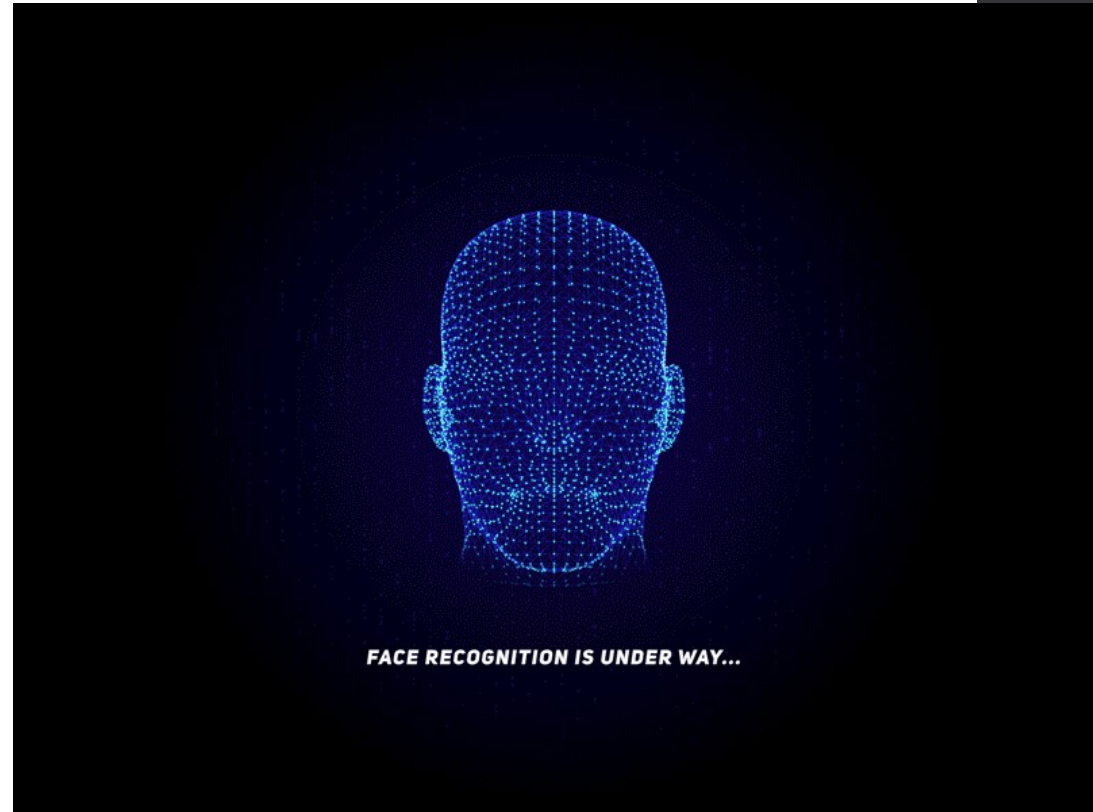
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MODULES:

OpenCV

- OpenCV(Open Source Computer Vision Library) is a library of programming functions mainly aimed at real-time computer vision.
- Developed by Intel, and now supported by Willow Garage and Itseez.
- It is free for use under the open source BSD license.
- The library is cross-platform. It focuses mainly on real-time image processing.
- Used for facial recognition, tracking objects in videos, image manipulation etc.
- Has more than 2500 optimized algorithms.



Pyqrcode

- The pyqrcode module is a QR code generator that is simple to use and written in pure python.
- The module can automates most of the building process for creating QR codes.
- Unlike other generators, all of the helpers can be controlled manually. You are free to set any or all of the properties of your QR code.
- QR codes can be saved as SVG, PNG (by using the pypng module), and plain text. They can also be displayed directly in most Linux terminal emulators. PIL is not used to render the image files.



Tkinter

- Tkinter is the most commonly used library for developing GUI (Graphical User Interface) in Python.
- It is a standard Python interface to the Tk GUI toolkit shipped with Python.
- As Tk and Tkinter are available on most of the Unix platforms as well as on the Windows system, developing GUI applications with Tkinter becomes the fastest and easiest.

```
from tkinter import *
from PIL import ImageTk, Image
root=Tk()
root.title("Face Recognizer")
root.iconbitmap('gui_images/hacker.ico')
root.state("zoomed")
bg5 = ImageTk.PhotoImage(file='gui_images/black_bg.png')
my_canvas1=Canvas(root,height=1400, width=1020)
my_canvas1.pack(fill = "both",expand=True)
my_canvas1.create_image(0,0, image=bg5,anchor="nw")
my_canvas1.create_text(290,45, text = "Facial recognition",font=("Times","56"),fill='white')
root.mainloop()
```



WORKING:

About

Facial recognition is a way of identifying or confirming an individual's identity using their face. Facial recognition systems can be used to identify people in photos, videos, or in real-time. Facial recognition is a category of biometric security. Other forms of biometric software include voice recognition, fingerprint recognition, and eye retina or iris recognition. The technology is mostly used for security and law enforcement, though there is increasing interest in other areas of use.

Many people are familiar with face recognition technology through the FaceID used to unlock iPhones (however, this is only one application of face recognition). Typically, facial recognition does not rely on a massive database of photos to determine an individual's identity — it simply identifies and recognizes one person as the sole owner of the device, while limiting access to others. Beyond unlocking phones, facial recognition works by matching the faces of people walking past special cameras, to images of people on a watch list. The watch lists can contain pictures of anyone, including people who are not suspected of any wrong doing, and the images can come from anywhere — even from our social media accounts.

Next button will take you to the home page.

NEXT

Face Recognition

EXIT

Exit button is use to close the program.



SCAN



RECOGNISE



INFORMATION

These icon buttons are use to perform task like scanning data(SCAN), recognize faces (RECOGNISE) and to get details (INFORMATION).

Frame Tkinter Application

Scan. — □ ×

Full Name:

After clicking on the SCAN icon button you'll get this pop-up screen where you have to enter your name. This process is done to check whether you are a new user or an existing user.

Face Recognition



SCAN



RECOGNISE



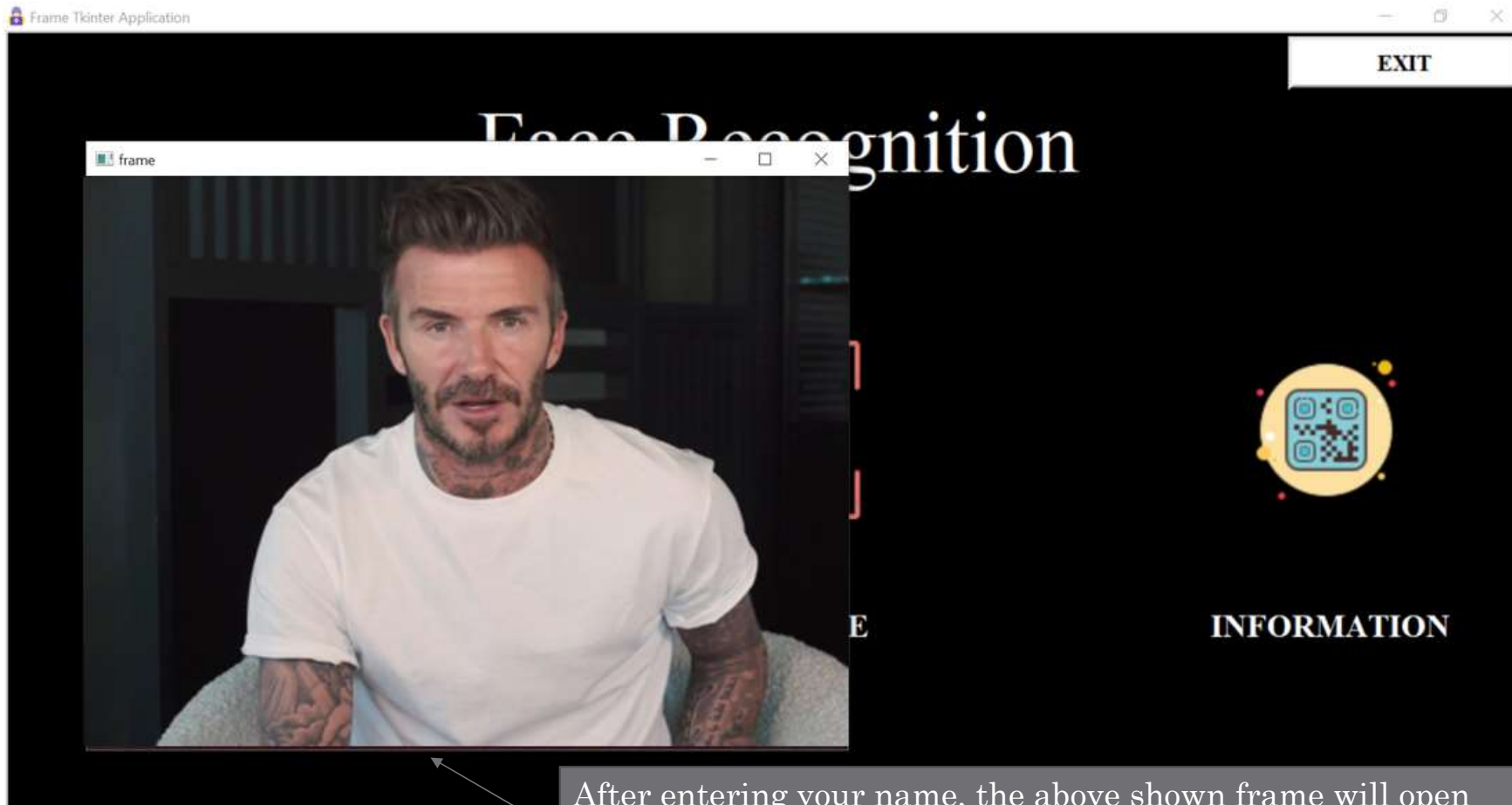
INFORMATION

EXIT

SCAN icon button is used to store data(pictures) for face recognition.

NOTE:

- New user: The program will capture 10 photos and train it using our face trainer for face recognition.
- Existing user: The program will capture single photo and train it using our face trainer for face recognition.



After entering your name, the above shown frame will open and it'll start taking pictures. If you are new user then it'll some take time.

EXIT

Face Recognition



SCAN

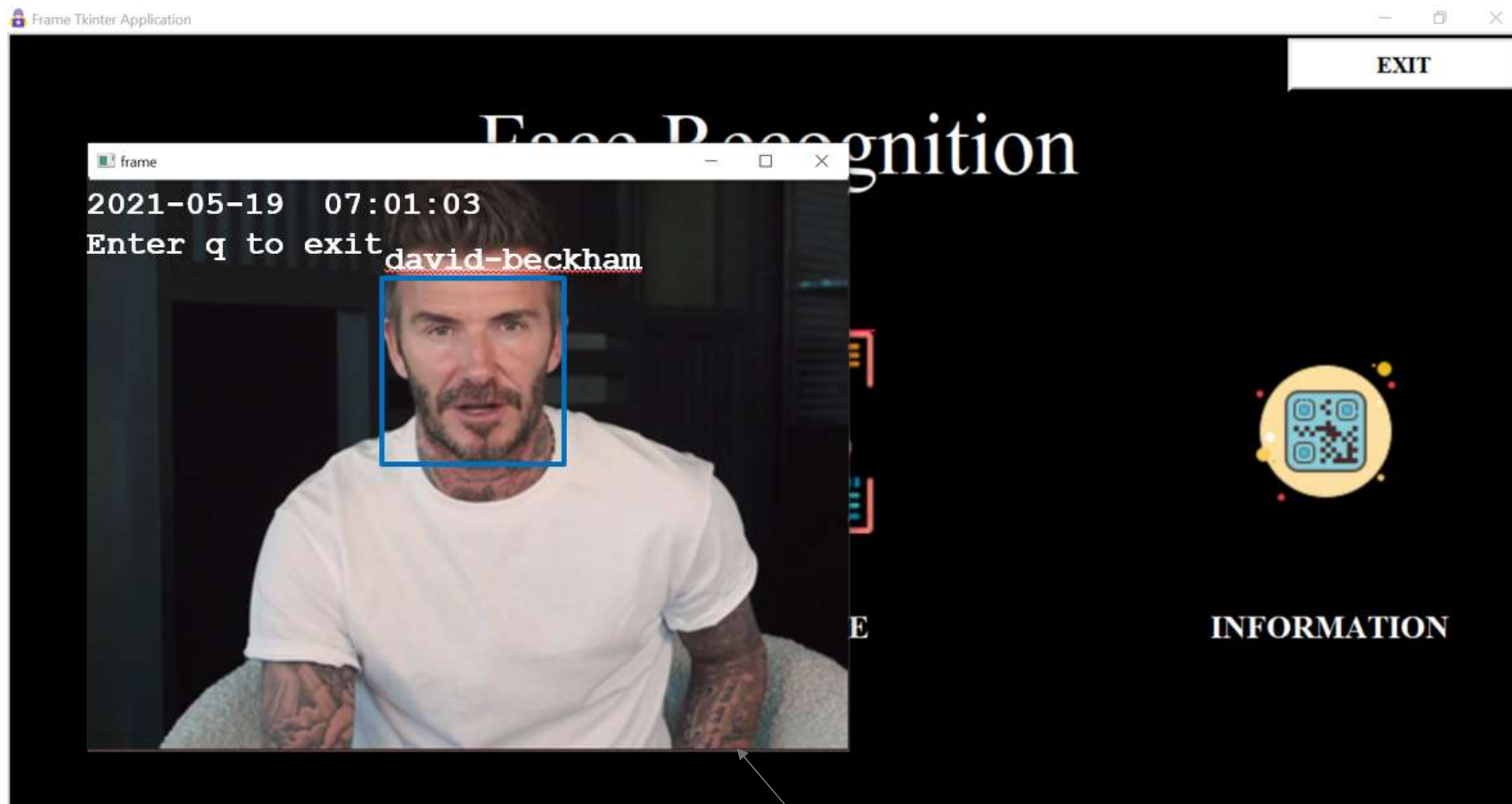


RECOGNISE



INFORMATION

RECOGNISE icon button is use for face recognition.



After clicking on RECOGNISE icon button, new frame will open and it'll show the person's name if it is trained properly.

EXIT

Face Recognition



SCAN

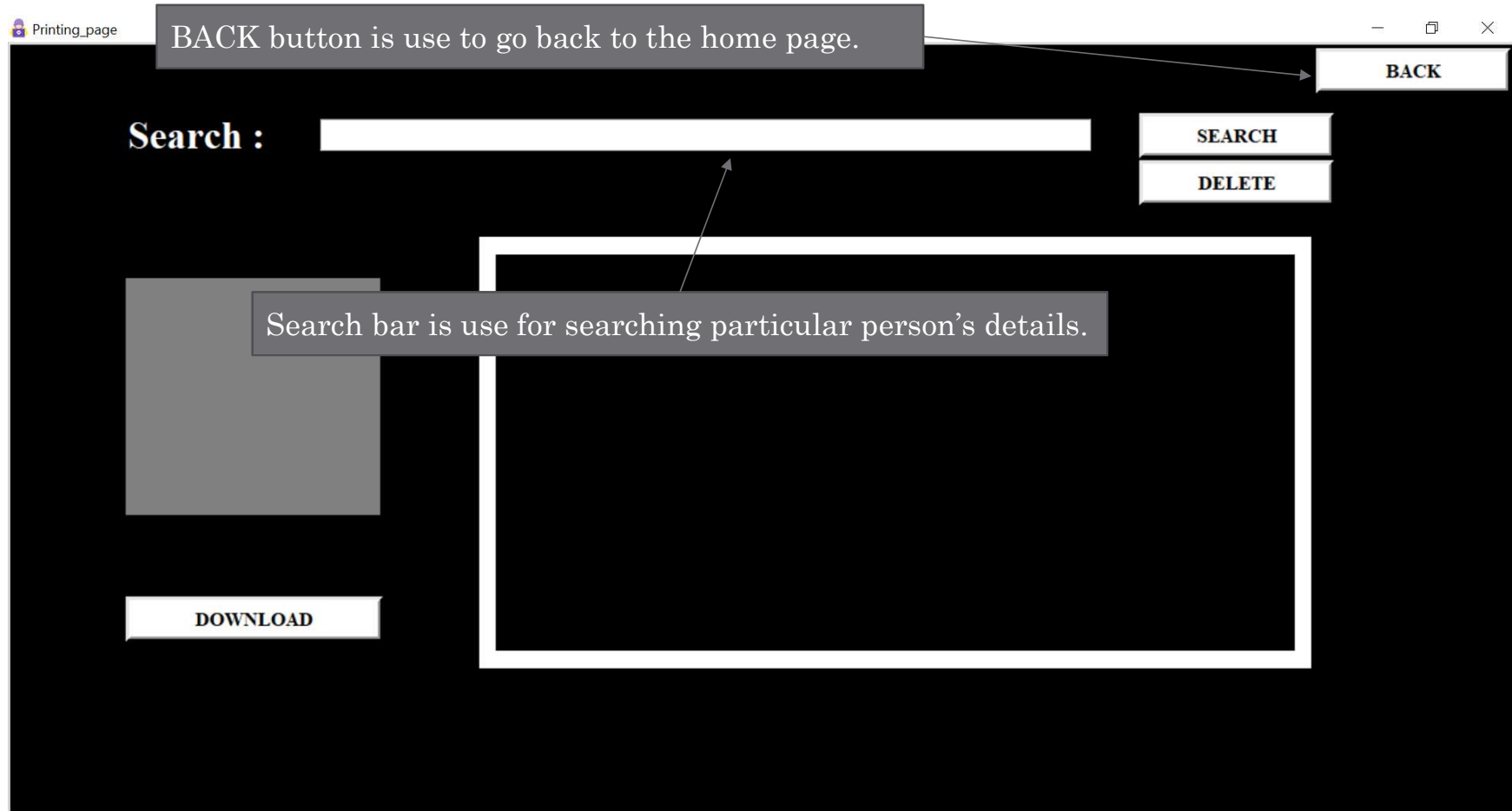


RECOGNISE



INFORMATION

INFORMATION icon button is use to see details of person.



Drop box list gives suggestions as per you type on the search bar.

Printing_page

Search :

N

Naman Desai,SAKEC, IT, year = 2 - 15142
Ritika Jain,SAKEC, IT, year = 2 - 15168
Aryan Yadav,SAKEC, IT, year = 2 - 15170

SEARCH

DELETE

BACK

DOWNLOAD

When you click on the name, their registration number will appear on the search bar.

SEARCH button gives the details of the given registration number on the search bar.


Printing_page

Search : 15142

SEARCH

DELETE

BACK



DOWNLOAD

Name : Naman Desai
College Name : SAKEC
Registration Number : 15142
Branch : IT
Year : 2
CGPA : 9.53

DOWNLOAD button is use to download QR-code image.

Printing_page

Warning. Deleted ! Okay.

15142

BACK

SEARCH

DELETE

DELETE button is used for deleting the printed record.

QR Code

DOWNLOAD

Name : Naman Desai
College Name : SAKEC
Registration Number : 15142
Branch : IT
Year : 2
CGPA : 9.53

Pop-up screen is displayed after clicking on delete button.

Before deleting:

Search :	<input type="text" value="N"/>	<input type="button" value="SEARCH"/>
	Naman Desai,SAKEC, IT, year = 2 - 15142	<input type="button" value="DELETE"/>
	Ritika Jain,SAKEC, IT, year = 2 - 15168	
	Aryan Yadav,SAKEC, IT, year = 2 - 15170	

After deleting:

Search :	<input type="text" value="N"/>	<input type="button" value="SEARCH"/>
	Ritika Jain,SAKEC, IT, year = 2 - 15168	<input type="button" value="DELETE"/>
	Aryan Yadav,SAKEC, IT, year = 2 - 15170	

DELETE button deletes a record from the database.

BACK

Search :

Naman Desai

SEARCH

DELETE

DOWNLOAD

As you can see there is no suggestion for “Naman Desai”. So, After clicking on search you’ll be directed to the form page.

BACK button is use to go back to the page where the person's data is printed.

Form:

Name	:	<input type="text"/>
College Name	:	<input type="text"/>
Registration Number	:	<input type="text"/>
Branch	:	<input type="text"/>
Year	:	<input type="text"/>
CGPA	:	<input type="text"/>

SUBMIT

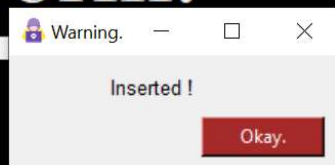
BACK

Enter your details properly to the respective rows.

Form:

Pop-up screen is displayed after clicking on submit.

BACK



College Name

: Naman Desai

Registration Number

: SAKEC

Branch

: IT

Year

: 2

CGPA

: 9.53

SUBMIT

SUBMIT button stores the record into the database

Before inserting:

Search :	<input type="text" value="N"/>	<input type="button" value="SEARCH"/>
	Ritika Jain,SAKEC, IT, year = 2 - 15168	<input type="button" value="DELETE"/>
	Aryan Yadav,SAKEC, IT, year = 2 - 15170	

After inserting :

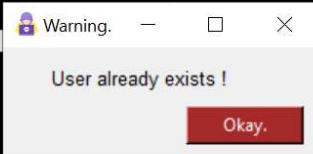
Search :	<input type="text" value="N"/>	<input type="button" value="SEARCH"/>
	Naman Desai,SAKEC, IT, year = 2 - 15142	
	Ritika Jain,SAKEC, IT, year = 2 - 15168	<input type="button" value="DELETE"/>
	Aryan Yadav,SAKEC, IT, year = 2 - 15170	

SUBMIT button inserts a record into the database.

Form:

Pop-up screen is displayed after clicking on submit.

BACK



College Name

: Anmol Agnihotri

Registration Number

: SAKEC

Branch

: 15142

Year

: IT

CGPA

: 2

: 9.0

SUBMIT

As you can see in the previous slide that this is "Naman Desai's" registration number and it already exists