PROJECT REPORT

ON

STUDENT REGISTRATION SYSTEM

Submitted to

NMAM INSTITUTE OF TECHNOLOGY, NITTE
(Off-Campus Centre, Nitte Deemed to be University, Nitte - 574 110, Karnataka, India)

In partial fulfilment of the requirements for the award of the degree of
Bachelor of Technology

in

INFORMATION SCIENCE AND ENGINEERING

By

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Under the guidance of

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Associate Professor

NITTE (Deemed to be University) | NMAM INSTITUTE OF TECHNOLOGY

2023 - 2024

NITTE (Deemed to be University) | NMAM INSTITUTE OF TECHNOLOGY

Department of Information Science & Engineering

CERTIFICATE

This is to certify that **Ms. SAANVI U(NNM22IS133) and Ms. SANYA SHRESTA JATHANNA (NNM22IS141)** of II-year B.Tech., a bonafide student of NMAM Institute of Technology, Nitte, has carried out project on **"STUDENT REGISTRATION SYSTEM"** as part of the **Python Programming Fundamentals(IS2155-1)** course during 2023-24, fulfilling the partial requirements for the award of degree of Bachelor of Technology in Information Science and Engineering at NMAM Institute of Technology, Nitte.

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Signature of Course Instructor

Dr.Ravi B

Associate Professor

ABSTRACT

The Student Registration System is a Python-based application built using the Tkinter library for graphical user interface (GUI) development. It allows users to manage student information, including registration details, personal information, and parent details. The system provides functionalities for adding, searching, updating, and deleting student records, along with features for uploading profile pictures. Data is stored in an Excel spreadsheet format for easy access and management.

In addition to its core functionalities, the Student Registration System offers a user-friendly interface with intuitive navigation, making it accessible to users with varying levels of technical expertise. It incorporates error handling mechanisms to ensure data integrity and smooth operation. The system also includes security features to protect sensitive information, such as user authentication and authorization controls. Furthermore, it allows for customization to accommodate specific requirements or preferences, enabling seamless integration into various educational institutions or settings. With its comprehensive features and flexibility, the Student Registration System serves as a valuable tool for efficiently managing student information and enhancing administrative processes.

LIST OF CONTENTS

CHAPTER 1 INTRODUCTION

The Student Registration System aims to streamline the process of managing student data within educational institutions. With a user-friendly interface, the system enables administrators to efficiently handle student information, ensuring accuracy and accessibility. The application automates tasks such as generating registration numbers, capturing essential details like name, date of birth, class, gender, and more. Additionally, it allows for the inclusion of parent information, enhancing communication and coordination between the school and parents/guardians.

The Student Registration System serves as a comprehensive solution to streamline the management of student data within educational institutions. Its user-friendly interface empowers administrators to efficiently handle student information, fostering accuracy and accessibility across all aspects of the registration process. By automating tasks such as generating registration numbers and capturing essential details like name, date of birth, class, and gender, the system significantly reduces the time and effort required for data entry and verification. Moreover, its capability to include parent information facilitates improved communication and coordination between the school and parents/guardians, thereby enhancing the overall efficiency and effectiveness of administrative operations.

CHAPTER 2 ANALYSIS & REQUIREMENT SPECIFICATION

2.1 Purpose

The primary purpose of the Student Registration System is to simplify the management of student records. By digitizing the registration process, the system reduces paperwork, minimizes errors, and enhances data organization. It provides administrators with a centralized platform to store and retrieve student information promptly. Moreover, the system offers functionalities to update and search for student records efficiently, facilitating timely updates and retrieval of relevant data. Overall, the purpose is to improve administrative efficiency, data accuracy, and user experience in handling student registration tasks.

2.2 Scope

The scope of the Student Registration System encompasses various aspects of student data management within educational institutions. It caters to tasks related to registering new students, updating existing records, searching for specific student details, and managing parent information. The system allows for customization to suit the specific requirements of different educational institutions, including schools, colleges, and universities. While the current implementation focuses on basic functionalities, the system can be extended to incorporate additional features such as attendance tracking, fee management, and academic performance monitoring. Additionally, the system provides flexibility for future enhancements and integration with other educational management systems.

CHAPTER 3 IMPLEMENTATION

3.11 Module Explanation

Technologies Used:

Student Registration System is built using Python and Tkinter for GUI development, along with other libraries like openpyxl for Excel file handling and PIL (Pillow) for image processing.

IDE used: IDLE Python 3.12 64-bit

Libraries imported:

```
from tkinter import *
from datetime import date
from tkinter import filedialog
from tkinter import messagebox
from PIL import Image, ImageTk
import os
from tkinter.ttk import Combobox
import pathlib
import openpyxl
from openpyxl import Workbook
workbook = Workbook()
```

Widgets Used(GUI Components):

1. Labels: Used to display static text such as headings, instructions, and descriptions.
2. Entry: Used for single-line text input by the user, such as registration number, date, name, and date of birth.
3. Button: Used to trigger actions or functions, such as searching, updating, saving, resetting, and exiting.
4. Radiobutton: Used to present a set of mutually exclusive options, such as gender selection (Male/Female).

5. Combobox: Used to present a dropdown list of options, such as selecting the student's class.
6. Frame: Used to organize and group related widgets together, providing structure and visual separation.
7. Image: Used to display images within the GUI, such as logos and profile pictures.
8. LabelFrame: Similar to a Frame but with an added border and title, used to group related widgets with a title for better organization**.**

Functionality Overview:

- Registration of new students and Exit feature

```python
def Exit():
    root.destroy()

# Registration form
def registration_no():
    file = openpyxl.load_workbook("Student_data.xlsx")
    sheet = file.active
    row = sheet.max_row
    max_row_value = sheet.cell(row=row, column=1).value
    try:
        Registration.set(max_row_value + 1)
    except:
        Registration.set("1")
```

- Updating existing student records
- Uploading and displaying profile pictures
- Handling parent/guardian information
- Automatic generation of registration numbers
- Data validation and error handling
- Searching for specific student details

```
def search():
    text = Search.get()
    Clear()
    saveButton.config(state='disable')
    file = openpyxl.load_workbook("Student_data.xlsx")
    sheet = file.active
    for row in sheet.rows:
        if row[0].value == int(text):
            name = row[0]
            reg_no_position = str(name)[14:-1]
            reg_number = str(name)[15:-1]
    try:
        print(str(name))
    except:
        messagebox.showerror("Invalid", "Invalid registration number")
    x1 = sheet.cell(row=int(reg_number), column=1).value
    x2 = sheet.cell(row=int(reg_number), column=2).value
    x3 = sheet.cell(row=int(reg_number), column=3).value
    x4 = sheet.cell(row=int(reg_number), column=4).value
    x5 = sheet.cell(row=int(reg_number), column=5).value
    x6 = sheet.cell(row=int(reg_number), column=6).value
    x7 = sheet.cell(row=int(reg_number), column=7).value
    x8 = sheet.cell(row=int(reg_number), column=8).value
    x9 = sheet.cell(row=int(reg_number), column=9).value
    x10 = sheet.cell(row=int(reg_number), column=10).value
    x11 = sheet.cell(row=int(reg_number), column=11).value
    x12 = sheet.cell(row=int(reg_number), column=12).value

    Registration.set(x1)
    Name.set(x2)
    Class.set(x3)
```

```
if x4 == 'Female':
    R2.select()
else:
    R1.select()

DOB.set(x5)
Date.set(x6)
Religion.set(x7)
Skill.set(x8)
F_Name.set(x9)
M_Name.set(x10)
Father_Occupation.set(x11)
Mother_Occupation.set(x12)

img = (Image.open("StudentImages/" + str(x1) + ".png"))
resized_image = img.resize((220, 200))
photo2 = ImageTk.PhotoImage(resized_image)
lbl.config(image=photo2)
lbl.image = photo2
```

CHAPTER 4 RESULTS

1. Streamlined Data Management: The system simplifies student registration and data management tasks, ensuring accuracy and efficiency.

2. User-Friendly Interface: A visually appealing interface built with Tkinter offers easy navigation and accessibility for administrators.

3. Automation of Tasks: Tasks such as generating registration numbers and storing records in Excel format are automated, reducing manual errors and saving time.

4. Improved Communication: Inclusion of parent/guardian details facilitates better communication between the institution and parents/guardians.

5. Centralized Record Keeping: The system provides a centralized platform for storing and retrieving student records, ensuring data consistency and easy access.

6. Customization and Scalability: The system is customizable to meet specific institutional needs and can be scaled up for additional features or integrations.

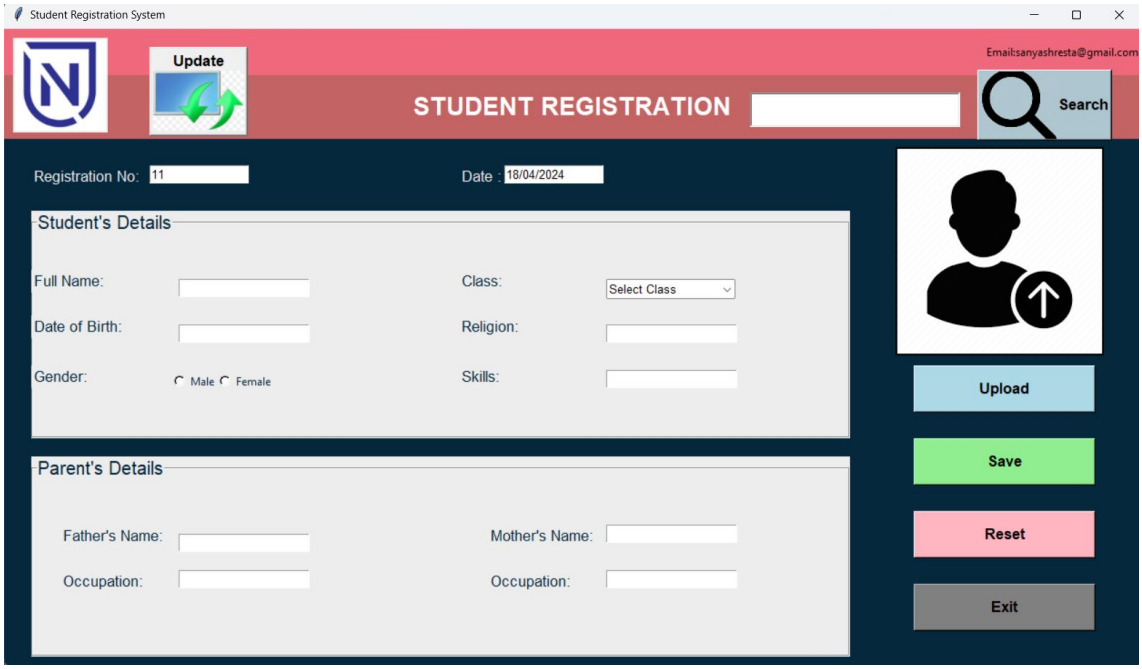
7. Enhanced Administrative Efficiency: By streamlining processes and automating tasks, the system improves administrative efficiency and productivity.

8. Positive User Experience: The user-friendly interface, automation features, and robust data management contribute to a positive user experience for administrators.

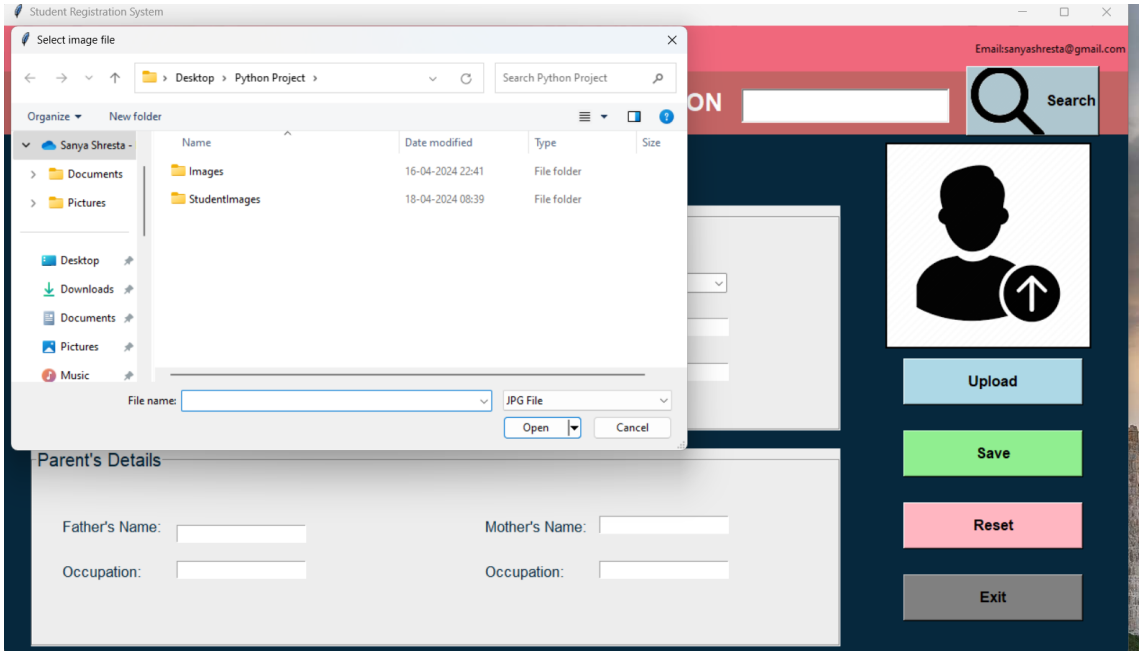
9. Potential for Future Enhancements: The system serves as a foundation for future enhancements, allowing for the integration of additional features as educational needs evolve.

10. Overall Impact: The implementation of the Student Registration System leads to improved administrative efficiency, data accuracy, and user satisfaction within educational institutions.

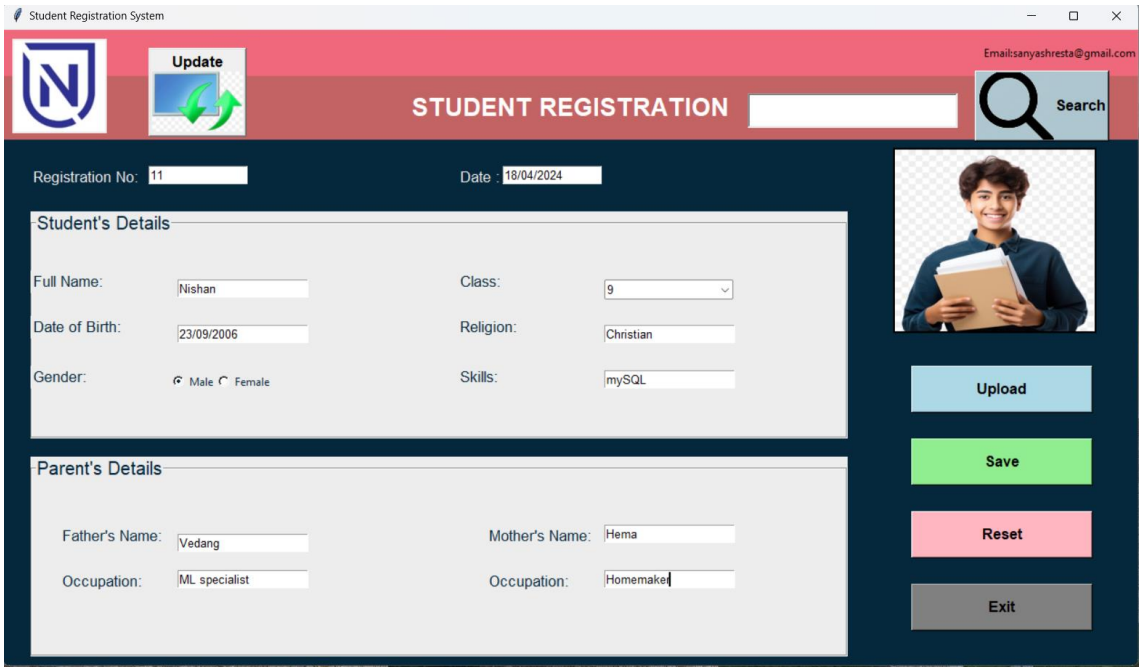
CHAPTER 5 OUTPUT

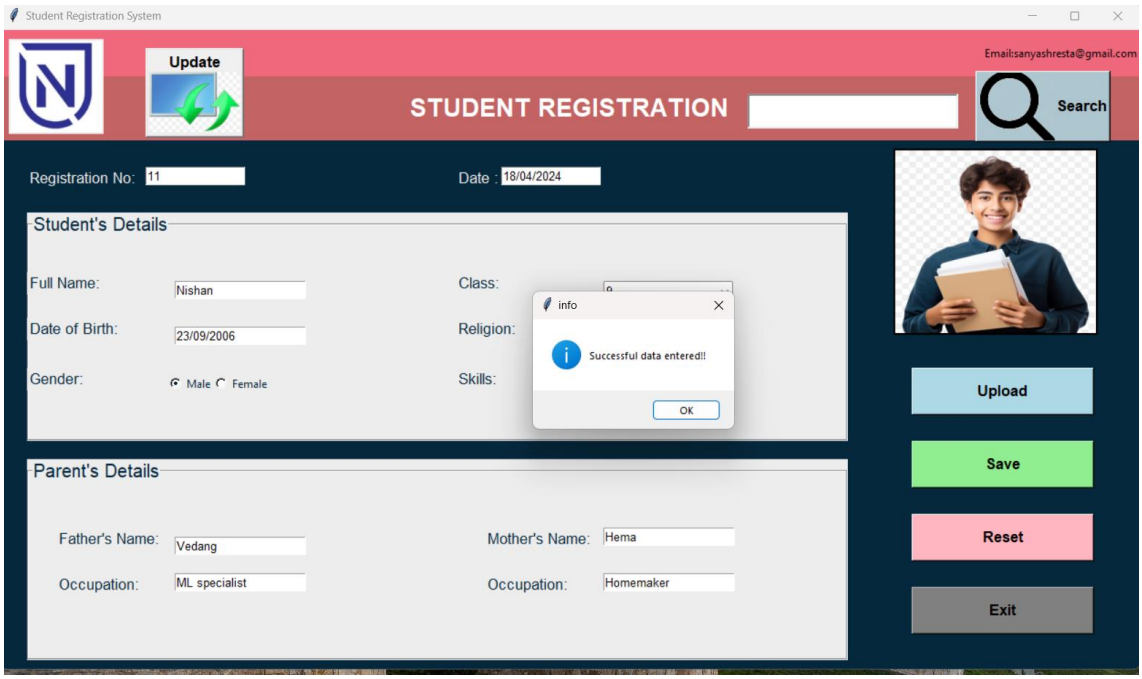


UPLOAD IMAGE

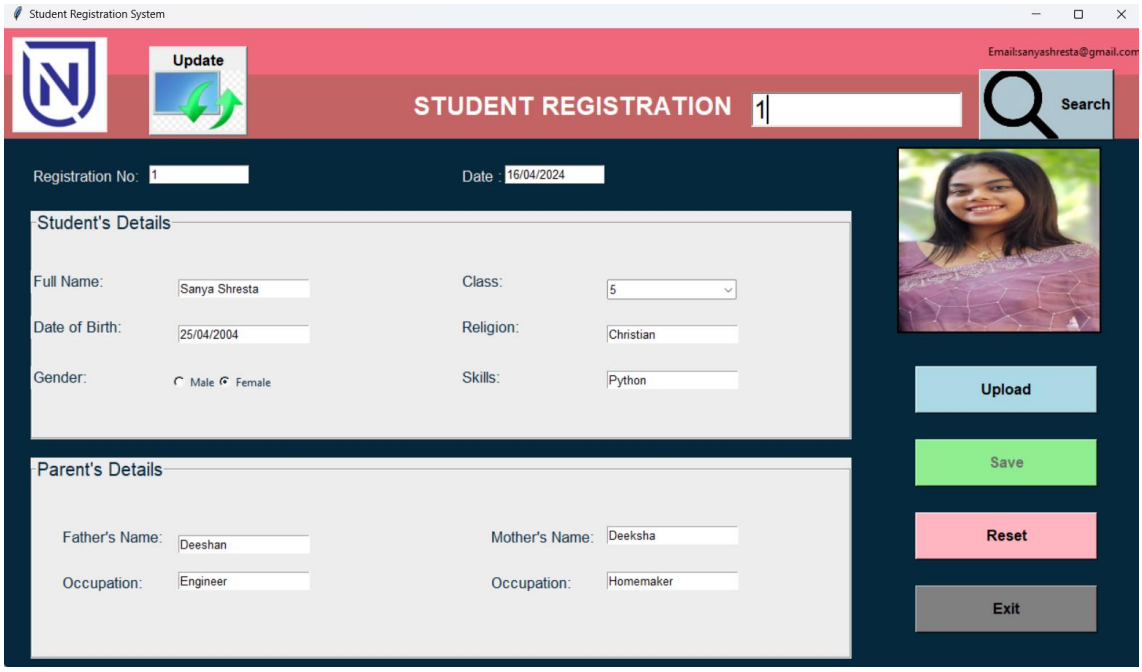


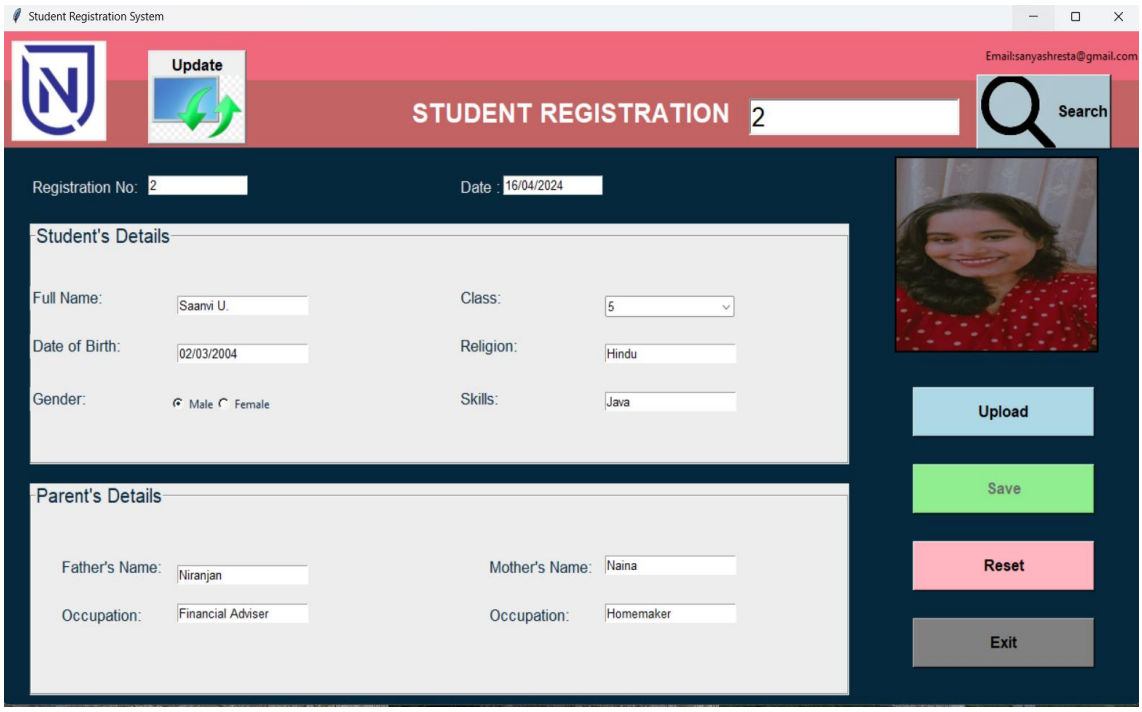
REGISTER NEW STUDENT



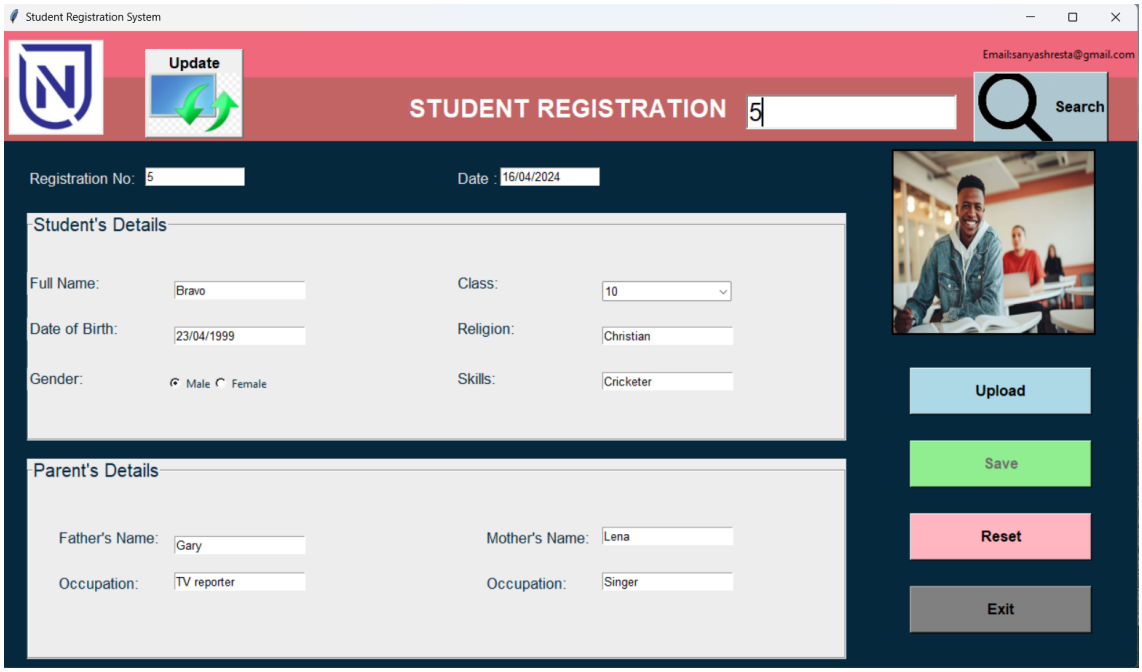


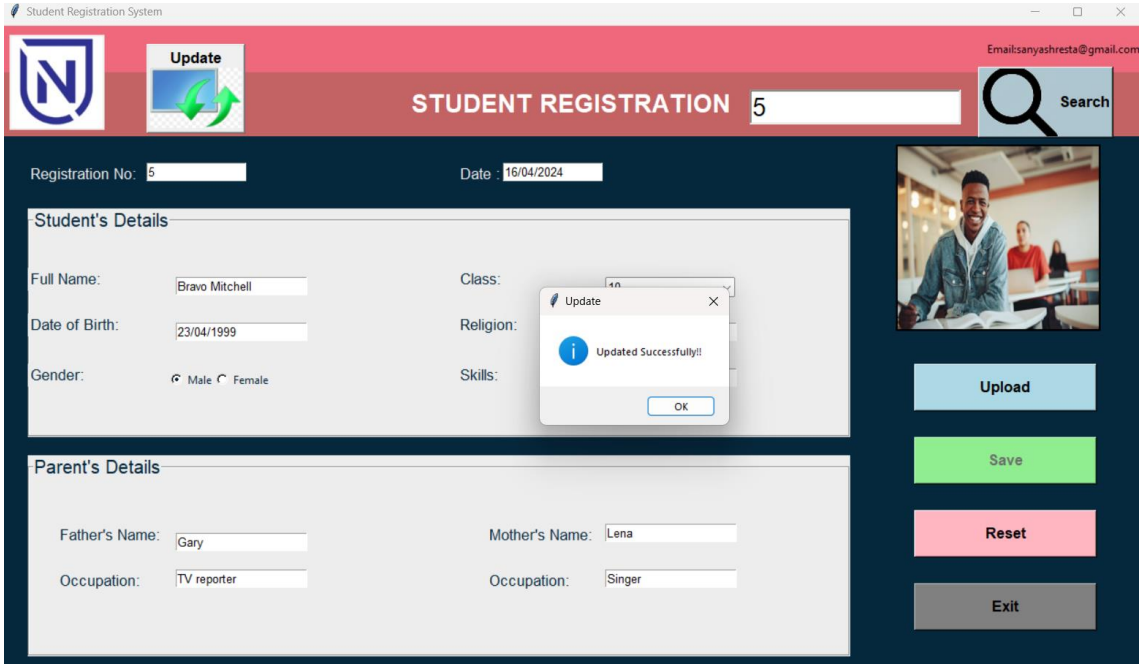
DATA SEARCH


Student Registration System
Update
Email:sanyashresta@gmail.com
STUDENT REGISTRATION
1
Search
Registration No: 1
Date : 16/04/2024
Student's Details
Full Name: Sanya Shresta
Class: 5
Date of Birth: 25/04/2004
Religion: Christian
Gender: Male Female
Skills: Python
Parent's Details
Father's Name: Deeshan
Mother's Name: Deeksha
Occupation: Engineer
Occupation: Homemaker
Upload
Save
Reset
Exit

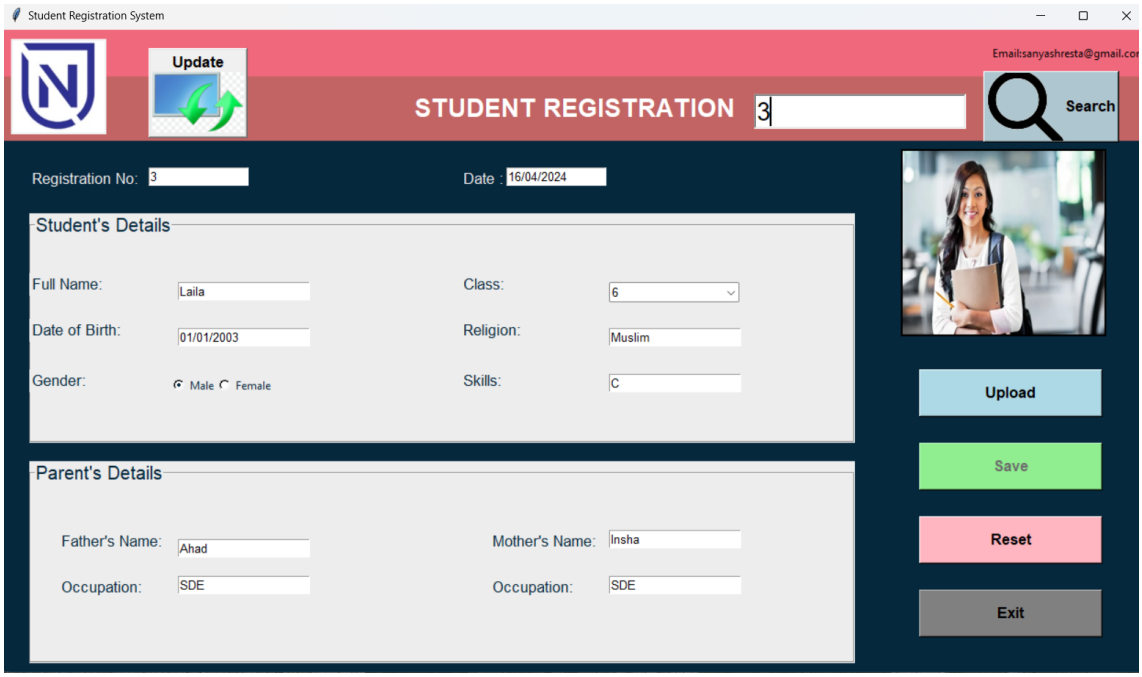

Student Registration System
Update
Email:sanyashresta@gmail.com
STUDENT REGISTRATION
2
Search
Registration No: 2
Date : 16/04/2024
Student's Details
Full Name: Saanvi U.
Class: 5
Date of Birth: 02/03/2004
Religion: Hindu
Gender: Male Female
Skills: Java
Parent's Details
Father's Name: Niranjan
Mother's Name: Naina
Occupation: Financial Adviser
Occupation: Homemaker
Upload
Save
Reset
Exit

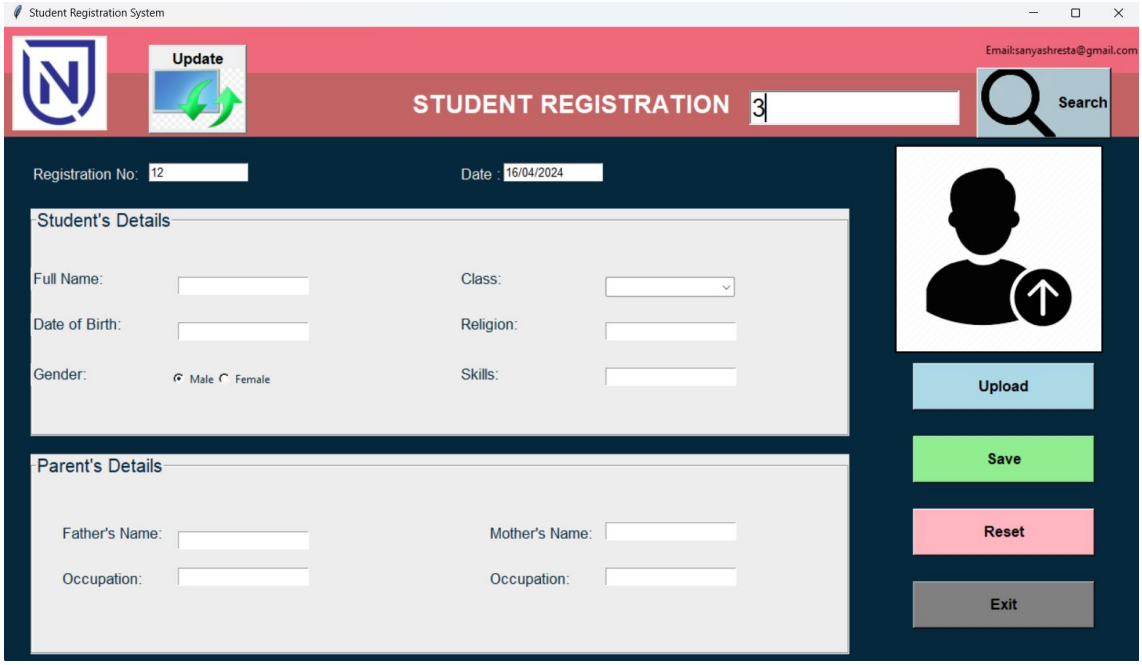
Update Data


Student Registration System
Update
Email:sanyashresta@gmail.com
STUDENT REGISTRATION
5
Search
Registration No: 5
Date : 16/04/2024
Student's Details
Full Name: Bravo
Class: 10
Date of Birth: 23/04/1999
Religion: Christian
Gender: Male Female
Skills: Cricketer
Parent's Details
Father's Name: Gary
Mother's Name: Lena
Occupation: TV reporter
Occupation: Singer
Upload
Save
Reset
Exit

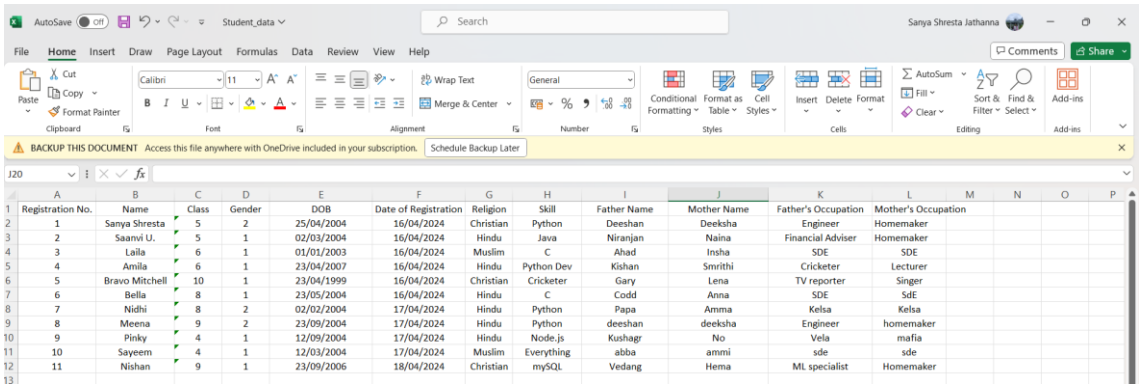

Student Registration System
Update
Email:sanyashresta@gmail.com
STUDENT REGISTRATION
5
Search
Registration No: 5
Date : 16/04/2024
Student's Details
Full Name: Bravo Mitchell
Class:
Date of Birth: 23/04/1999
Religion:
Gender: Male Female
Skills:
Update
Updated Successfully!!
OK
Parent's Details
Father's Name: Gary
Mother's Name: Lena
Occupation: TV reporter
Occupation: Singer
Upload
Save
Reset
Exit

RESET DATA


Student Registration System
Update
STUDENT REGISTRATION
3
Search
Email:sanyashresta@gmail.com
Registration No: 3
Date : 16/04/2024
Student's Details
Full Name: Laila
Class: 6
Date of Birth: 01/01/2003
Religion: Muslim
Gender: Male Female
Skills: C
Parent's Details
Father's Name: Ahad
Mother's Name: Insha
Occupation: SDE
Occupation: SDE
Upload
Save
Reset
Exit


Student Registration System
Update
STUDENT REGISTRATION
3
Search
Email:sanyashresta@gmail.com
Registration No: 12
Date : 16/04/2024
Student's Details
Full Name:
Class:
Date of Birth:
Religion:
Gender: Male Female
Skills:
Parent's Details
Father's Name:
Mother's Name:
Occupation:
Occupation:
Upload
Save
Reset
Exit

DATA GETS STORED IN AN EXCEL SHEET(Local Database)



Registration No.	Name	Class	Gender	DOB	Date of Registration	Religion	Skill	Father Name	Mother Name	Father's Occupation	Mother's Occupation
1	Sanya Shresta	5	2	25/04/2004	16/04/2024	Christian	Python	Deeshan	Deeksha	Engineer	Homemaker
2	Saanvi U.	5	1	02/03/2004	16/04/2024	Hindu	Java	Niranjan	Naina	Financial Adviser	Homemaker
3	Laila	6	1	01/01/2003	16/04/2024	Muslim	C	Ahad	Insha	SDE	SDE
4	Amila	6	1	23/04/2007	16/04/2024	Hindu	Python Dev	Kishan	Smrithi	Cricketer	Lecturer
5	Bravo Mitchell	10	1	23/04/1999	16/04/2024	Christian	Cricketer	Gary	Lena	TV reporter	Singer
6	Bella	8	1	23/05/2004	16/04/2024	Hindu	C	Codd	Anna	SDE	SdE
7	Nidhi	8	2	02/02/2004	17/04/2024	Hindu	Python	Papa	Amma	Kelsa	Kelsa
8	Meena	9	2	23/09/2004	17/04/2024	Hindu	Python	deeshan	deeksha	Engineer	homemaker
9	Pinky	4	1	12/09/2004	17/04/2024	Hindu	Node.js	Kushagr	No	Vela	mafia
10	Sayeem	4	1	12/03/2004	17/04/2024	Muslim	Everything	abba	ammi	sde	sde
11	Nishan	9	1	23/09/2006	18/04/2024	Christian	mySQL	Vedang	Hema	ML specialist	Homemaker

CHAPTER 6 CONCLUSION

In conclusion, the Student Registration System presents a robust solution for managing student data within educational institutions. By leveraging Python and Tkinter for GUI development, the system provides administrators with an intuitive platform for efficiently handling registration, updating, and retrieval of student records.

The implementation of the system showcases the effective utilization of various technologies, including openpyxl for Excel file handling and PIL (Pillow) for image processing. These technologies enable automation of tasks such as generating registration numbers, validating input data, and uploading profile pictures, thereby enhancing administrative efficiency and accuracy.

The user-friendly interface, coupled with functionalities such as search, update, and data validation, ensures a positive user experience for administrators and stakeholders involved in student management. Furthermore, the system's scalability and customization capabilities allow for adaptation to the specific needs of different educational institutions.

Overall, the Student Registration System contributes to streamlined administrative processes, improved data management, and enhanced communication between the institution and parents/guardians. As educational institutions continue to evolve, the system stands ready to accommodate future enhancements and integrations, reaffirming its significance in modern educational administration.

REFERENCES

[1] https://youtu.be/JUGEkFDeuwg?feature=shared

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[4] Learn Python Programming(2nd Edition) By Fabrizio Romano

[5] https://www.w3schools.com/python/