A Project Report of

Contact Organizer Management System

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Subject & Subject Code: Python Programming Lab & 24CAP-605

Abstract:

A Contact Management System (CMS) is an essential tool for individuals and or ganizations to efficiently manage their contact information.This system provide s a centralized database to store, organize, and retrieve contact details, includin g names, phone numbers, address, and gender. It streamlines communication and supports relationshipsbuilding efforts by offering features such as search a nd filter capabilities, group , and integration with contactingplatforms. The CMS aims to improve productivity and ensure that vital contact information is easily accessible, uptodate, and secure, ultimately fostering better connections and informed decision-making.

Introduction:

The **Contact Management System** is a Python-based application designed to manage and organize a list of contacts efficiently. This project helps users store, update, and delete contact details like name, address, gender, and phone number, all within a simple GUI created using the Tkinter module. The system's primary purpose is to allow users to store personal information and maintain an organized contact list, which can be modified as needed.

This project is a great way to demonstrate how Python can be used to build functional GUI applications. It's also an excellent learning tool for beginners to improve their skills in Python programming, especially in creating GUI-based applications using Tkinter.

Purpose:

The purpose of creating a Contact Management System (CMS) is to streamline the process of organizing, storing, and accessing contact information efficiently. By centralizing contact details, such as names, phone numbers,age. Contact Management System enhances communication and collaboration.

Features of the Contact Management System:

1. **View All Contacts:** On launching the application, the user can view all stored contacts.
2. **Add Contacts:** Users can add new contacts by filling out the form with relevant details.
3. **Update Contacts:** The system allows users to modify existing contact details by double-clicking on a particular entry.
4. **Delete Contacts:** Users can remove any contact from the list by selecting it and clicking the delete button.

Requirement:

The system was developed using **Tkinter**, which is a Python package used for building simple GUI applications. Below are the essential packages required for this project:

Tkinter:

- Used for building the graphical user interface (GUI).
- Provides various widgets such as buttons, text fields, and tables, which are essential for creating the contact management system.
- Installation: pip install tk

SQLite3:

- Used for managing the database that stores all the contact details.
- SQLite is a lightweight, file-based database that requires minimal configuration and works well for small applications.
- No external installation is required for SQLite, as it comes bundled with Python.

Database Connection:

- The project uses SQLite3 to handle database operations, ensuring efficient management of contact information.

```
import sqlite3

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

c = conn.cursor()
```

Here, a connection to the ***contact.db*** database is created, allowing the system to read and write contact data.

Adding Contacts:

- A function is created to allow users to add a new contact by inputting their personal details.

```
def add_contact():

first_name = entry_first_name.get()

last_name = entry_last_name.get()

c.execute('INSERT INTO contacts (first_name, last_name, ...) VALUES (?, ?, ...)', ...)
```

```
conn.commit()
```

- This function retrieves user input and inserts it into the database using an SQL query.

Updating Contacts:

- The system allows updating contact details by double-clicking on a contact and editing the data.

```
def update_contact():
selected_contact = contact_list.selection()
...
c.execute('UPDATE contacts SET first_name=?, last_name=? WHERE id=?', ...)
conn.commit()
```

- The updated contact details are then saved back to the database.

Deleting Contacts:

- A function to delete contacts from the database.

```
def delete_contact():
selected_contact = contact_list.selection()
...
c.execute('DELETE FROM contacts WHERE id=?', ...)
conn.commit()
```

Future Work:

Integration with Other Tools: Seamless integration with other productivit
y tools like email clients, calendars, and project management software wi
ll make CMS more efficient and user-
friendly.Improved User Interfaces: Future CMS will feature more intuitive
 and user-
friendly interfaces, possibly incorporating voice commands and chatbots
for easier navigation and interaction.

Customization and Scalability: Systems will offer more customization opti ons to cater to the specific needs of different businesses and industries. S calability will be a key feature, allowing systems to grow with the user's n eeds.

Source Code:

Download Complete Source Code Folder

```
from tkinter import *

import sqlite3

import tkinter.ttk as ttk

import tkinter.messagebox as tkMessageBox

root = Tk()

root.title("Contact Management System")

width = 700

height = 400

screen_width = root.winfo_screenwidth()

screen_height = root.winfo_screenheight()

x = (screen_width/2) - (width/2)

y = (screen_height/2) - (height/2)

root.geometry("%dx%d+%d+%d" % (width, height, x, y))

root.resizable(0, 0)

root.config(bg="#6666ff")


#============================VARIABLES==========================
=========

FIRSTNAME = StringVar()

LASTNAME = StringVar()
```

```
GENDER = StringVar()

AGE = StringVar()

ADDRESS = StringVar()

CONTACT = StringVar()


#============================METHODS============================


def Database():

conn = sqlite3.connect("contact.db")

cursor = conn.cursor()

cursor.execute("CREATE TABLE IF NOT EXISTS `member` (mem_id INTEGER NOT NULL  PRIMARY KEY AUTOINCREMENT, firstname TEXT, lastname TEXT, gender TEXT, age TEXT, address TEXT, contact TEXT)")

cursor.execute("SELECT * FROM `member` ORDER BY `lastname` ASC")

fetch = cursor.fetchall()

for data in fetch:

tree.insert('', 'end', values=(data))

cursor.close()

conn.close()


def SubmitData():

if  FIRSTNAME.get() == "" or LASTNAME.get() == "" or GENDER.get() == "" or AGE.get() == "" or ADDRESS.get() == "" or CONTACT.get() == "":

result = tkMessageBox.showwarning('', 'Please Complete The Required Field', icon="warning")

else:

tree.delete(*tree.get_children())
```

```
conn = sqlite3.connect("contact.db")

cursor = conn.cursor()

cursor.execute("INSERT INTO `member` (firstname, lastname, gender, age, address, contact) VALUES(?, ?, ?, ?, ?, ?)", (str(FIRSTNAME.get()), str(LASTNAME.get()), str(GENDER.get()), int(AGE.get()), str(ADDRESS.get()), str(CONTACT.get())))

conn.commit()

cursor.execute("SELECT * FROM `member` ORDER BY `lastname` ASC")

fetch = cursor.fetchall()

for data in fetch:

tree.insert('', 'end', values=(data))

cursor.close()

conn.close()

FIRSTNAME.set("")

LASTNAME.set("")

GENDER.set("")

AGE.set("")

ADDRESS.set("")

CONTACT.set("")


def UpdateData():

if GENDER.get() == "":

result = tkMessageBox.showwarning('', 'Please Complete The Required Field', icon="warning")

else:

tree.delete(*tree.get_children())

conn = sqlite3.connect("contact.db")
```

```
cursor = conn.cursor()

cursor.execute("UPDATE `member` SET `firstname` = ?, `lastname` = ?, `gender` =?, `age` = ?,  `address` = ?, `contact` = ? WHERE `mem_id` = ?", (str(FIRSTNAME.get()), str(LASTNAME.get()), str(GENDER.get()), str(AGE.get()), str(ADDRESS.get()), str(CONTACT.get()), int(mem_id)))

conn.commit()

cursor.execute("SELECT * FROM `member` ORDER BY `lastname` ASC")

fetch = cursor.fetchall()

for data in fetch:

tree.insert('', 'end', values=(data))

cursor.close()

conn.close()

FIRSTNAME.set("")

LASTNAME.set("")

GENDER.set("")

AGE.set("")

ADDRESS.set("")

CONTACT.set("")



def OnSelected(event):

global mem_id, UpdateWindow

curItem = tree.focus()

contents =(tree.item(curItem))

selecteditem = contents['values']

mem_id = selecteditem[0]

FIRSTNAME.set("")
```

```
LASTNAME.set("")
GENDER.set("")
AGE.set("")
ADDRESS.set("")
CONTACT.set("")
FIRSTNAME.set(selecteditem[1])
LASTNAME.set(selecteditem[2])
AGE.set(selecteditem[4])
ADDRESS.set(selecteditem[5])
CONTACT.set(selecteditem[6])
UpdateWindow = Toplevel()
UpdateWindow.title("Contact Management System")
width = 400
height = 300
screen_width = root.winfo_screenwidth()
screen_height = root.winfo_screenheight()
x = ((screen_width/2) + 450) - (width/2)
y = ((screen_height/2) + 20) - (height/2)
UpdateWindow.resizable(0, 0)
UpdateWindow.geometry("%dx%d+%d+%d" % (width, height, x, y))
if 'NewWindow' in globals():
NewWindow.destroy()

#===================FRAMES==============================
FormTitle = Frame(UpdateWindow)
FormTitle.pack(side=TOP)
```

```
ContactForm = Frame(UpdateWindow)

ContactForm.pack(side=TOP, pady=10)

RadioGroup = Frame(ContactForm)

Male = Radiobutton(RadioGroup, text="Male", variable=GENDER, value="Male", font=('arial', 14)).pack(side=LEFT)

Female = Radiobutton(RadioGroup, text="Female", variable=GENDER, value="Female",  font=('arial', 14)).pack(side=LEFT)


#==================LABELS==============================

lbl_title = Label(FormTitle, text="Updating Contacts", font=('arial', 16), bg="orange",  width = 300)

lbl_title.pack(fill=X)

lbl_firstname = Label(ContactForm, text="Firstname", font=('arial', 14), bd=5)

lbl_firstname.grid(row=0, sticky=W)

lbl_lastname = Label(ContactForm, text="Lastname", font=('arial', 14), bd=5)

lbl_lastname.grid(row=1, sticky=W)

lbl_gender = Label(ContactForm, text="Gender", font=('arial', 14), bd=5)

lbl_gender.grid(row=2, sticky=W)

lbl_age = Label(ContactForm, text="Age", font=('arial', 14), bd=5)

lbl_age.grid(row=3, sticky=W)

lbl_address = Label(ContactForm, text="Address", font=('arial', 14), bd=5)

lbl_address.grid(row=4, sticky=W)

lbl_contact = Label(ContactForm, text="Contact", font=('arial', 14), bd=5)

lbl_contact.grid(row=5, sticky=W)


#==================ENTRY===============================

firstname = Entry(ContactForm, textvariable=FIRSTNAME, font=('arial', 14))
```

```
firstname.grid(row=0, column=1)

lastname = Entry(ContactForm, textvariable=LASTNAME, font=('arial', 14))

lastname.grid(row=1, column=1)

RadioGroup.grid(row=2, column=1)

age = Entry(ContactForm, textvariable=AGE,  font=('arial', 14))

age.grid(row=3, column=1)

address = Entry(ContactForm, textvariable=ADDRESS,  font=('arial', 14))

address.grid(row=4, column=1)

contact = Entry(ContactForm, textvariable=CONTACT,  font=('arial', 14))

contact.grid(row=5, column=1)



#==================BUTTONS==============================

btn_updatecon = Button(ContactForm, text="Update", width=50,
command=UpdateData)

btn_updatecon.grid(row=6, columnspan=2, pady=10)



#fn1353p

def DeleteData():

if not tree.selection():

result = tkMessageBox.showwarning('', 'Please Select Something First!',
icon="warning")

else:

result = tkMessageBox.askquestion('', 'Are you sure you want to delete this
record?', icon="warning")

if result == 'yes':
```

```
curItem = tree.focus()
contents =(tree.item(curItem))
selecteditem = contents['values']
tree.delete(curItem)
conn = sqlite3.connect("contact.db")
cursor = conn.cursor()
cursor.execute("DELETE FROM `member` WHERE `mem_id` = %d" % selecteditem[0])
conn.commit()
cursor.close()
conn.close()

def AddNewWindow():
global NewWindow
FIRSTNAME.set("")
LASTNAME.set("")
GENDER.set("")
AGE.set("")
ADDRESS.set("")
CONTACT.set("")
NewWindow = Toplevel()
NewWindow.title("Contact Management System")
width = 400
height = 300
screen_width = root.winfo_screenwidth()
screen_height = root.winfo_screenheight()
x = ((screen_width/2) - 455) - (width/2)
```

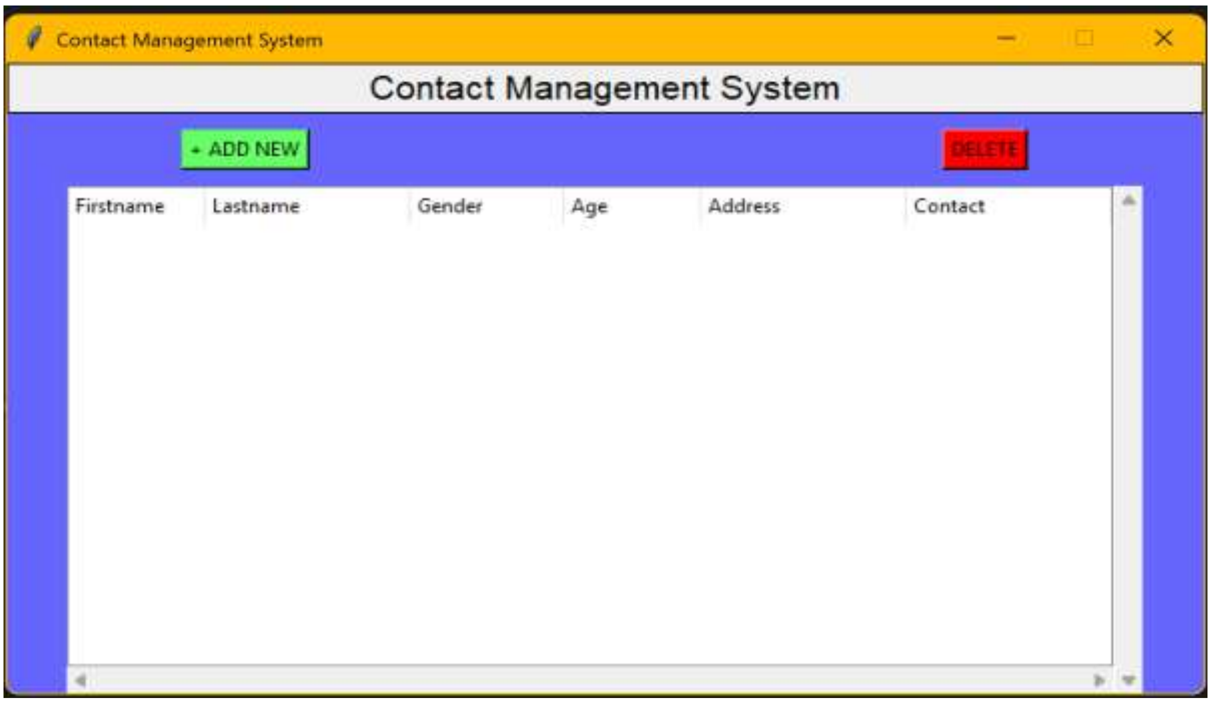
```
y = ((screen_height/2) + 20) - (height/2)
NewWindow.resizable(0, 0)
NewWindow.geometry("%dx%d+%d+%d" % (width, height, x, y))
if 'UpdateWindow' in globals():
UpdateWindow.destroy()

#===================FRAMES==============================
FormTitle = Frame(NewWindow)
FormTitle.pack(side=TOP)
ContactForm = Frame(NewWindow)
ContactForm.pack(side=TOP, pady=10)
RadioGroup = Frame(ContactForm)
Male = Radiobutton(RadioGroup, text="Male", variable=GENDER, value="Male", font=('arial', 14)).pack(side=LEFT)
Female = Radiobutton(RadioGroup, text="Female", variable=GENDER, value="Female",  font=('arial', 14)).pack(side=LEFT)

#===================LABELS==============================
lbl_title = Label(FormTitle, text="Adding New Contacts", font=('arial', 16), bg="#66ff66",  width = 300)
lbl_title.pack(fill=X)
lbl_firstname = Label(ContactForm, text="Firstname", font=('arial', 14), bd=5)
lbl_firstname.grid(row=0, sticky=W)
lbl_lastname = Label(ContactForm, text="Lastname", font=('arial', 14), bd=5)
lbl_lastname.grid(row=1, sticky=W)
lbl_gender = Label(ContactForm, text="Gender", font=('arial', 14), bd=5)
lbl_gender.grid(row=2, sticky=W)
```

```
lbl_age = Label(ContactForm, text="Age", font=('arial', 14), bd=5)

lbl_age.grid(row=3, sticky=W)

lbl_address = Label(ContactForm, text="Address", font=('arial', 14), bd=5)

lbl_address.grid(row=4, sticky=W)

lbl_contact = Label(ContactForm, text="Contact", font=('arial', 14), bd=5)

lbl_contact.grid(row=5, sticky=W)


#===================ENTRY===============================

firstname = Entry(ContactForm, textvariable=FIRSTNAME, font=('arial', 14))

firstname.grid(row=0, column=1)

lastname = Entry(ContactForm, textvariable=LASTNAME, font=('arial', 14))

lastname.grid(row=1, column=1)

RadioGroup.grid(row=2, column=1)

age = Entry(ContactForm, textvariable=AGE,  font=('arial', 14))

age.grid(row=3, column=1)

address = Entry(ContactForm, textvariable=ADDRESS,  font=('arial', 14))

address.grid(row=4, column=1)

contact = Entry(ContactForm, textvariable=CONTACT,  font=('arial', 14))

contact.grid(row=5, column=1)



#==================BUTTONS==============================

btn_addcon = Button(ContactForm, text="Save", width=50,
command=SubmitData)

btn_addcon.grid(row=6, columnspan=2, pady=10)

#============================FRAMES=============================
==========
Top = Frame(root, width=500, bd=1, relief=SOLID)

Top.pack(side=TOP)

Mid = Frame(root, width=500,  bg="#6666ff")

Mid.pack(side=TOP)

MidLeft = Frame(Mid, width=100)

MidLeft.pack(side=LEFT, pady=10)

MidLeftPadding = Frame(Mid, width=370, bg="#6666ff")

MidLeftPadding.pack(side=LEFT)

MidRight = Frame(Mid, width=100)

MidRight.pack(side=RIGHT, pady=10)

TableMargin = Frame(root, width=500)

TableMargin.pack(side=TOP)

#=============================LABELS==============================
=========

lbl_title = Label(Top, text="Contact Management System", font=('arial', 16),
width=500)

lbl_title.pack(fill=X)

#=============================ENTRY===============================
=========

#=============================BUTTONS===========================
==========

btn_add = Button(MidLeft, text="+ ADD NEW", bg="#66ff66",
command=AddNewWindow)

btn_add.pack()

btn_delete = Button(MidRight, text="DELETE", bg="red", command=DeleteData)

btn_delete.pack(side=RIGHT)
```

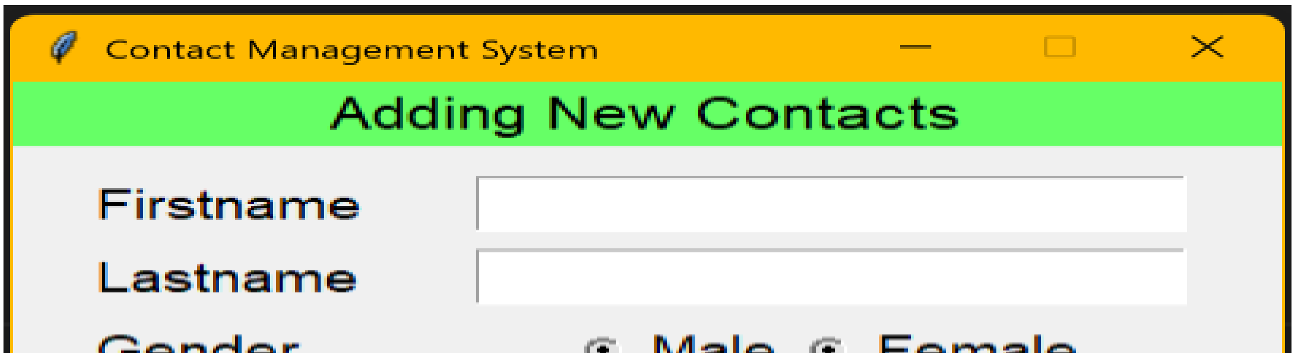
```
#===============================TABLES=================================
==========
scrollbarx = Scrollbar(TableMargin, orient=HORIZONTAL)
scrollbary = Scrollbar(TableMargin, orient=VERTICAL)
tree = ttk.Treeview(TableMargin, columns=("MemberID", "Firstname",
"Lastname", "Gender", "Age", "Address", "Contact"), height=400,
selectmode="extended", yscrollcommand=scrollbary.set,
xscrollcommand=scrollbarx.set)
scrollbary.config(command=tree.yview)
scrollbary.pack(side=RIGHT, fill=Y)
scrollbarx.config(command=tree.xview)
scrollbarx.pack(side=BOTTOM, fill=X)
tree.heading('MemberID', text="MemberID", anchor=W)
tree.heading('Firstname', text="Firstname", anchor=W)
tree.heading('Lastname', text="Lastname", anchor=W)
tree.heading('Gender', text="Gender", anchor=W)
tree.heading('Age', text="Age", anchor=W)
tree.heading('Address', text="Address", anchor=W)
tree.heading('Contact', text="Contact", anchor=W)
tree.column('#0', stretch=NO, minwidth=0, width=0)
tree.column('#1', stretch=NO, minwidth=0, width=0)
tree.column('#2', stretch=NO, minwidth=0, width=80)
tree.column('#3', stretch=NO, minwidth=0, width=120)
tree.column('#4', stretch=NO, minwidth=0, width=90)
tree.column('#5', stretch=NO, minwidth=0, width=80)
tree.column('#6', stretch=NO, minwidth=0, width=120)
tree.column('#7', stretch=NO, minwidth=0, width=120)
tree.pack()

tree.bind('<Double-Button-1>', OnSelected)

#===========================INITIALIZATION=======================
=======

if __name__ == '__main__':

Database()

root.mainloop()
```

Output:

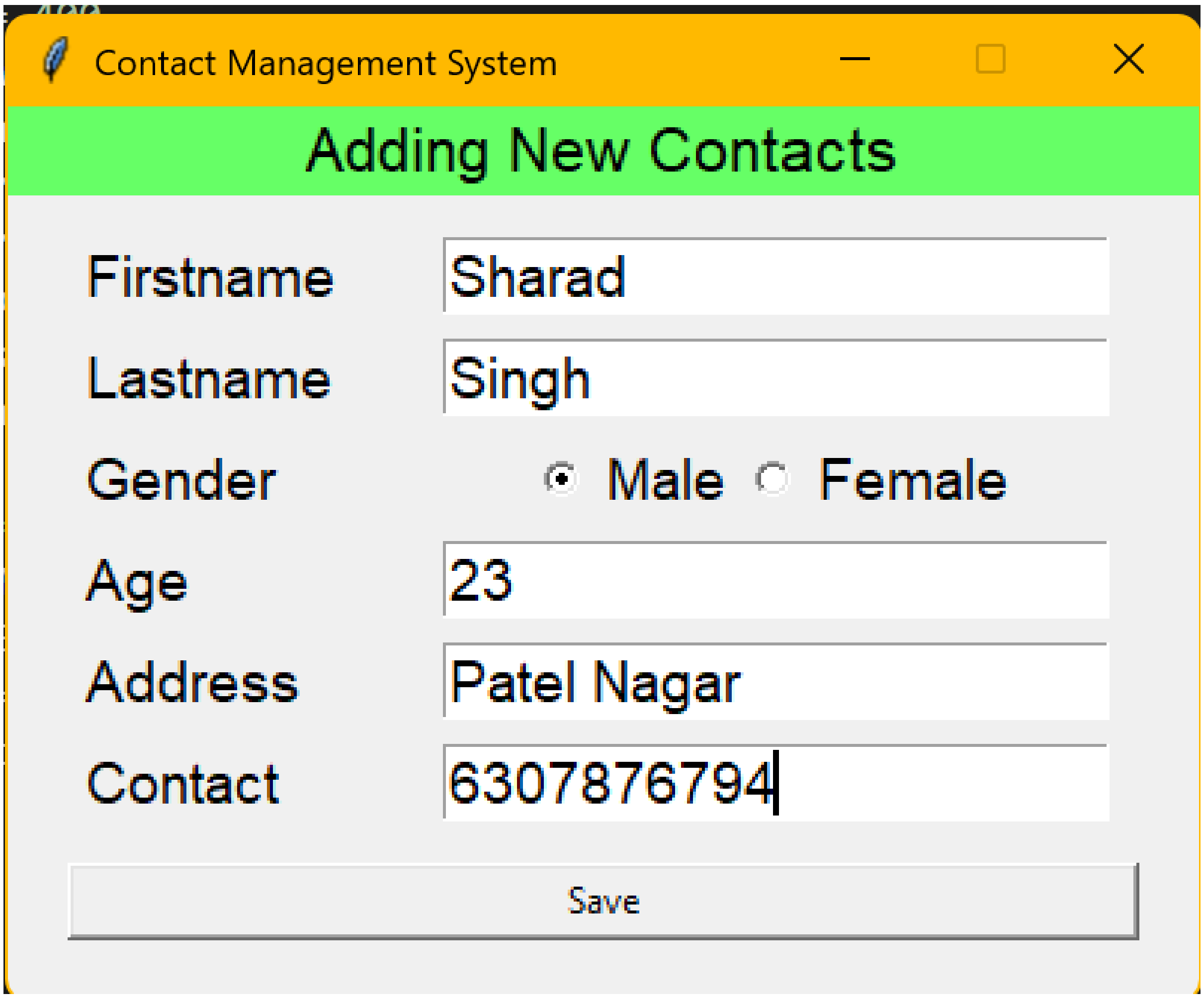
When I run the program:



When I click on add new:

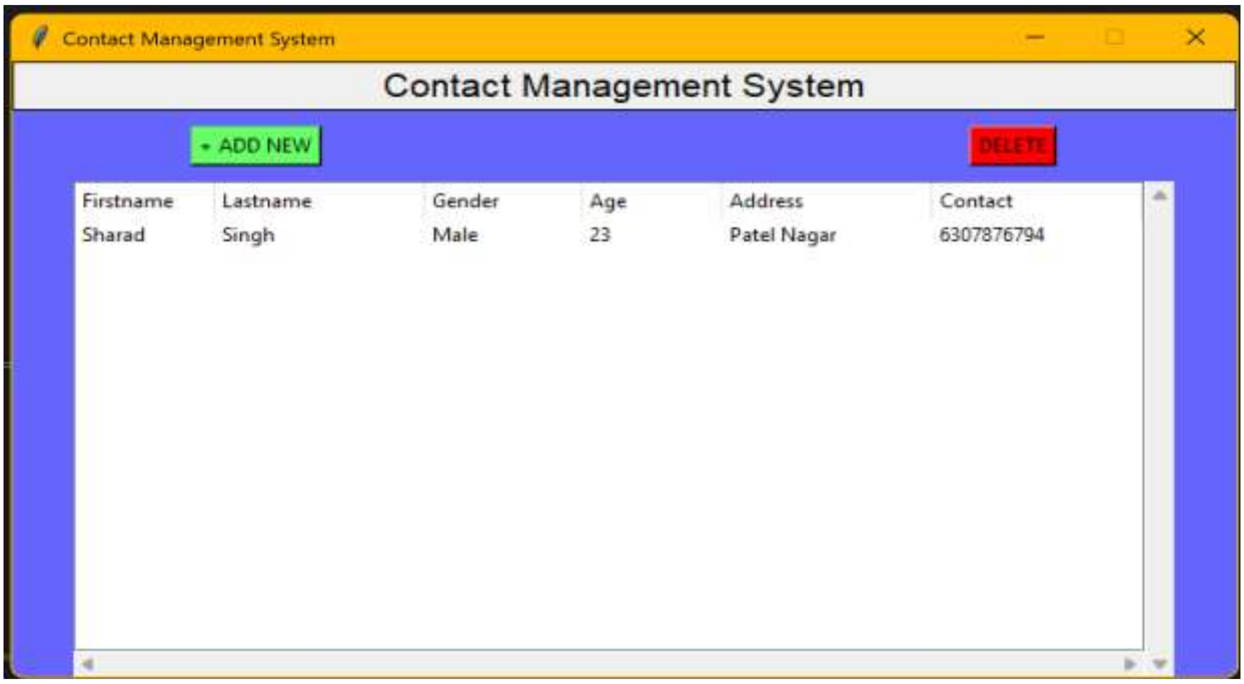


When I fill all the section:



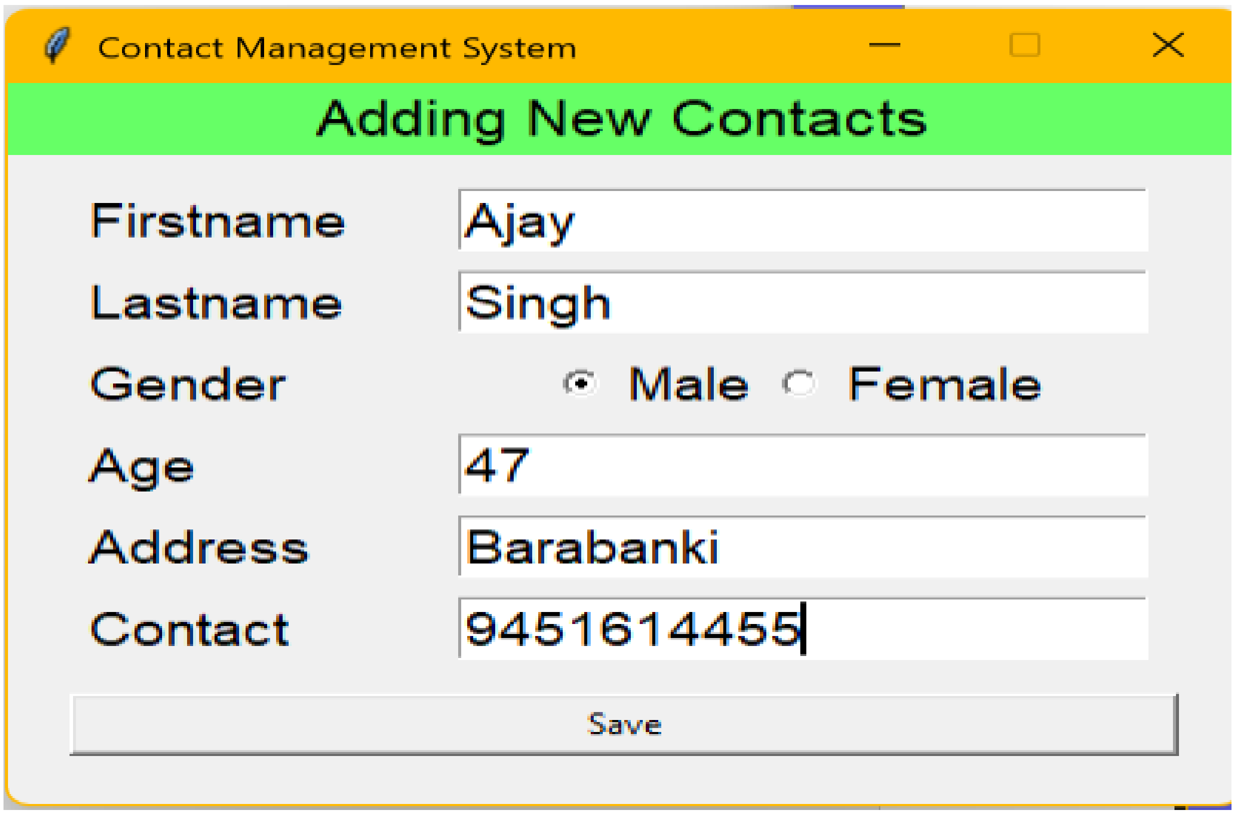
Firstname	Sharad
Lastname	Singh
Gender	[✓ Male] Female
Age	23
Address	Patel Nagar
Contact	6307876794

When I click on save button:



Firstname	Lastname	Gender	Age	Address	Contact
Sharad	Singh	Male	23	Patel Nagar	6307876794

Adding one more contact:

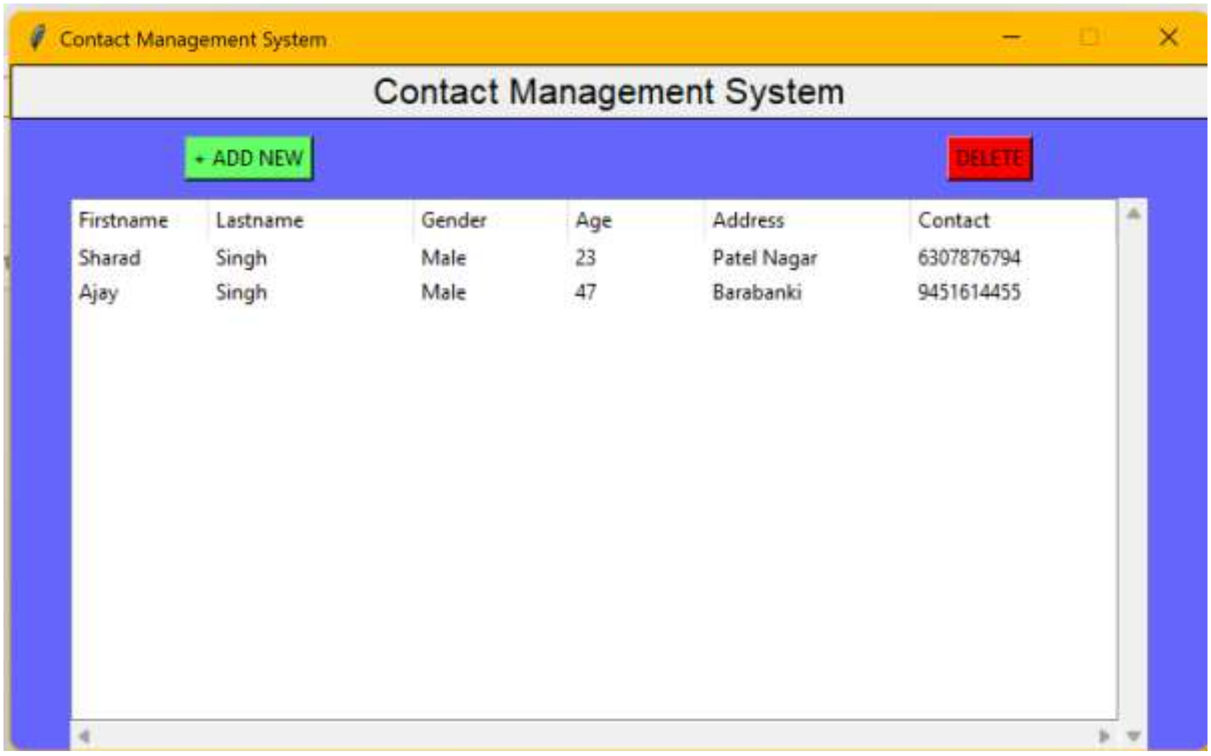


Contact Management System

Adding New Contacts

Firstname	Ajay
Lastname	Singh
Gender	[✓ Male] Female
Age	47
Address	Barabanki
Contact	9451614455

After two interies:



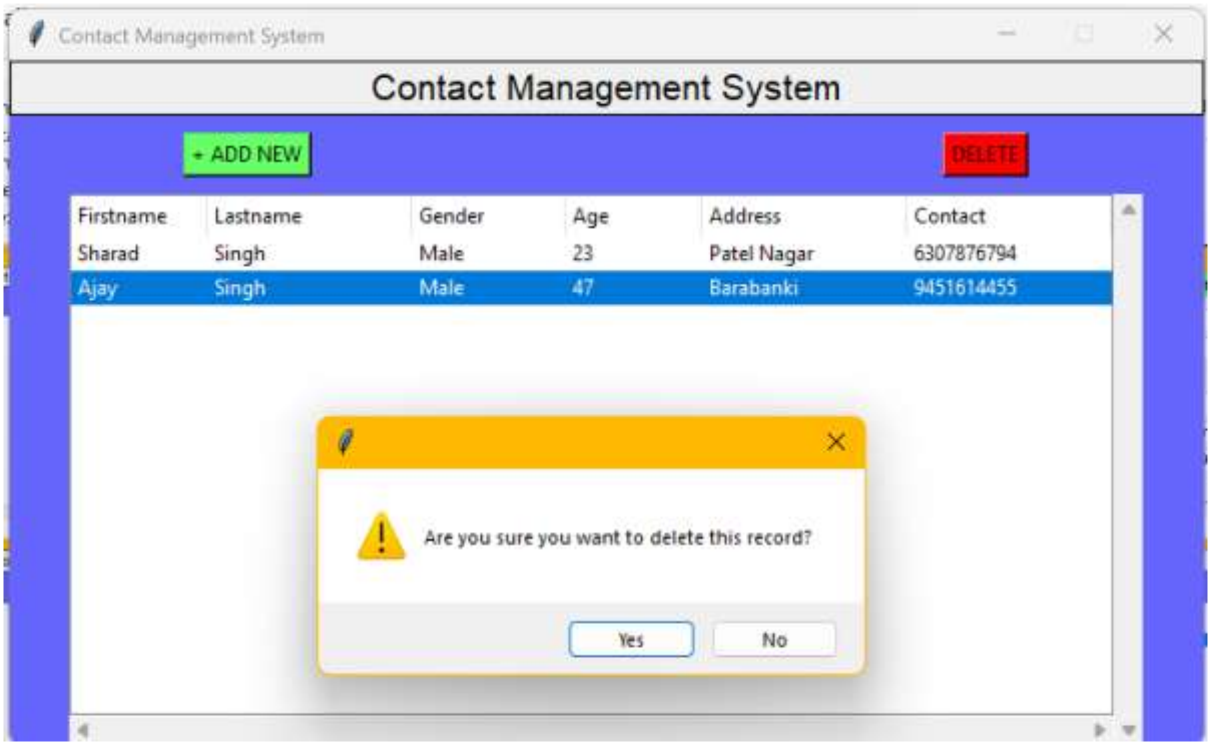
Contact Management System

Contact Management System

Firstname	Lastname	Gender	Age	Address	Contact
Sharad	Singh	Male	23	Patel Nagar	6307876794
Ajay	Singh	Male	47	Barabanki	9451614455

Deleting one contact from the Contact Management System:

If I want to delete a member from the list then first we select the member and then click on delete button and press yes that particular user delete from the list.

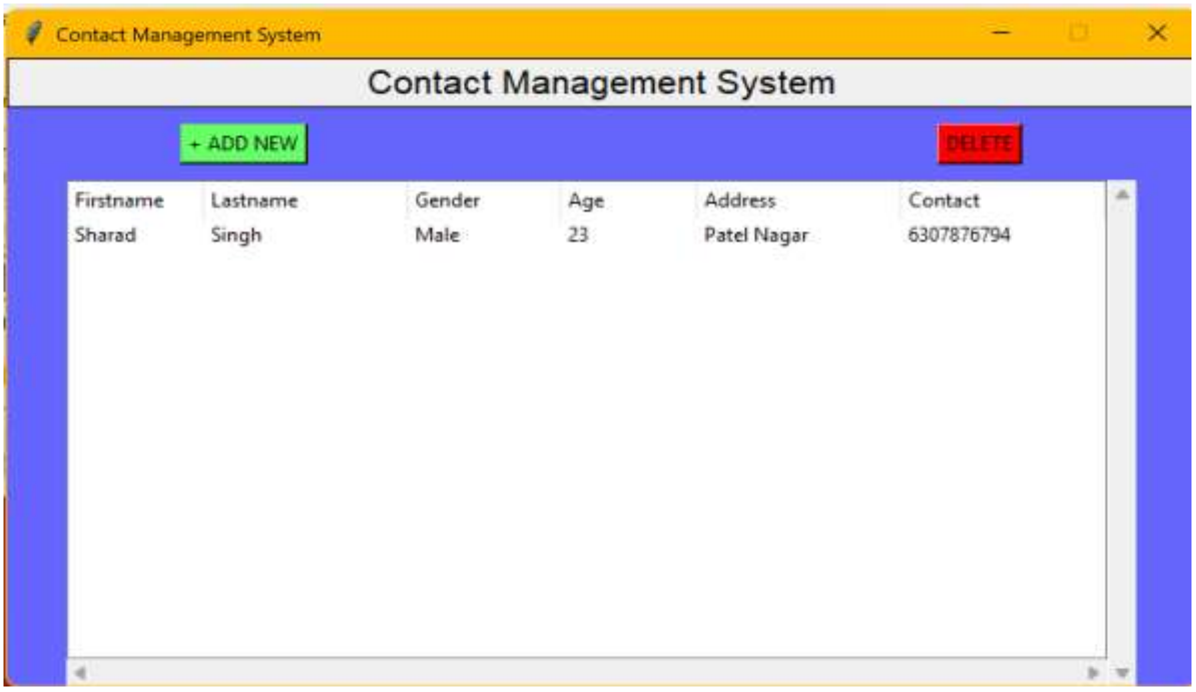


Contact Management System

Firstname	Lastname	Gender	Age	Address	Contact
Sharad	Singh	Male	23	Patel Nagar	6307876794
Ajay	Singh	Male	47	Barabanki	9451614455

Are you sure you want to delete this record?

After deleting the user:



Contact Management System

Firstname	Lastname	Gender	Age	Address	Contact
Sharad	Singh	Male	23	Patel Nagar	6307876794

Refrence –

- ZOHO - Best Contact Management Software - Zoho CRM
- CRM Organisation - Best Contact Management Software: Top 16 Systems & Databases | CRM.org
- Zendesk - Top 10 Contact Management Software Platforms | Tools for 2024