VIVEKANAND EDUCATION SOCIETY'S INSTITUTE OF TECHNOLOGY

Department of Computer Engineering

Python Mini Project Report on
Project Topic

Submitted in partial fulfilment of the requirements
Of Second Year Computer Engineering

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TITLE:

Creation of Credit Card Calculator with database connectivity using Python modules: tkinter and sqlite3.

PROBLEM DEFINITION:

Creation of Credit Card Calculator in Python to calculate the interest and final debit amount by entering unique identification number, principal amount, rate of interest, and number of years with database connectivity to store the information entered by the user and calculated result for further use.

CODE:

```
from tkinter import*
import sqlite3
import tkinter.ttk as ttk
import tkinter.messagebox as tkMessageBox

root = Tk()
root.title("CREDIT CARD CALCULATOR")
screen_width = root.winfo_screenwidth()
screen_height = root.winfo_screenheight()
width = 1300
height = 700
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)

#============================METHODS==================================
def Database():
    global conn, cursor
    conn = sqlite3.connect('CREDITCC.db')
    cursor= conn.cursor()
     cursor.execute("CREATE TABLE IF NOT EXISTS credit(NAME TEXT,CREDIT_NO
TEXT,CVV TEXT, EXPIRY_DATE TEXT,LOAN_AMOUNT TEXT, INETEREST_RATE
TEXT,REPAYEMENT_TENURE TEXT,PRINCIPAL_AMOUNT
TEXT,INTEREST_AMOUNT TEXT,EMI TEXT)")

def Create():
```

```
        if  NAME.get() == "" or CREDIT_NO.get() == "" or CVV.get() == "" or
EXPIRY_DATE.get() == "" or LOAN_AMOUNT.get() == "" or INETEREST_RATE.get()
==  ""  or  REPAYEMENT_TENURE  =="" or PRINCIPAL_AMOUNT=="" or
INTEREST_AMOUNT =="" or EMI=="":
        txt_result.config(text="Please complete the required field!", fg="red")
    else:
        Database()
        cursor.execute("INSERT INTO `credit` (NAME, CREDIT_NO, CVV, EXPIRY_DATE,
LOAN_AMOUNT,  INETEREST_RATE,  REPAYEMENT_TENURE,
PRINCIPAL_AMOUNT, INTEREST_AMOUNT, EMI)VALUES(?, ?, ?, ?, ?, ?, ?, ?, ?, ?)",
(str(NAME.get()),  str(CREDIT_NO.get()),  str(CVV.get()),
str(EXPIRY_DATE.get()),str(LOAN_AMOUNT.get()),  str(INETEREST_RATE.get()),
str(REPAYEMENT_TENURE.get()),  str(PRINCIPAL_AMOUNT.get()),
str(INTEREST_AMOUNT.get()), str(EMI.get())))

        conn.commit()

        NAME,set("")
        CREDIT_NO,set("")
        CVV,set("")
        EXPIRY_DATE,set("")
        LOAN_AMOUNT,set("")
        INETEREST_RATE,set("")
        REPAYEMENT_TENURE,set("")
        PRINCIPAL_AMOUNT,set("")
        INTEREST_AMOUNT,set("")
        EMI,set("")

        cursor.close()
        conn.close()
        txt_result.config(text="Create a data!", fg="green")

def Read():
    tree.delete(*tree.get_children())
    Database()
    cursor.execute("SELECT * FROM `credit` ORDER BY 'NAME' ASC ")
    fetch = cursor.fetchall()
    for data in fetch:
        tree.insert('', 'end', values=(data[0], data[1], data[2], data[3], data[4], data[5], data[6],
data[7], data[8], data[9]))
    cursor.close()
    conn.close()
```

```
    txt_result.config(text="Successfully read the data from database", fg="black")

def Exit():
     result = tkMessageBox.askquestion('CREDIT CARD CALCULATOR', 'Are you sure you
want to exit?', icon="warning")
    if result == 'yes':
        root.destroy()
        exit()

#============================VARIABLES============================
NAME = StringVar()
CREDIT_NO = StringVar()
CVV = StringVar()
EXPIRY_DATE = StringVar()
LOAN_AMOUNT= StringVar()
INETEREST_RATE = StringVar()
REPAYEMENT_TENURE = StringVar()
PRINCIPAL_AMOUNT = StringVar()
INTEREST_AMOUNT = StringVar()
EMI = StringVar()

#=============================FRAME================================
Top = Frame(root, width=900, height=50, bd=8, relief="raise")
Top.pack(side=TOP)
Left = Frame(root, width=300, height=500, bd=8, relief="raise")
Left.pack(side=LEFT)
Right = Frame(root, width=600, height=500, bd=8, relief="raise")
Right.pack(side=RIGHT)
Forms = Frame(Left, width=300, height=450)
Forms.pack(side=TOP)
Buttons = Frame(Left, width=300, height=100, bd=8, relief="raise")
Buttons.pack(side=BOTTOM)

#=========================LABEL_WIDGET=============================
txt_title = Label(Top, width=900, font=('arial', 24), text = "CREDIT CARD
CALCULATOR")
txt_title.pack()
txt_NAME = Label(Forms, text="NAME:", font=('arial', 16), bd=15)
txt_NAME.grid(row=0, stick="w")
txt_CREDIT_NO = Label(Forms, text="CREDIT_NO:", font=('arial', 16), bd=15)
txt_CREDIT_NO.grid(row=1, stick="w")
txt_CVV = Label(Forms, text="CVV:", font=('arial', 16), bd=15)
```

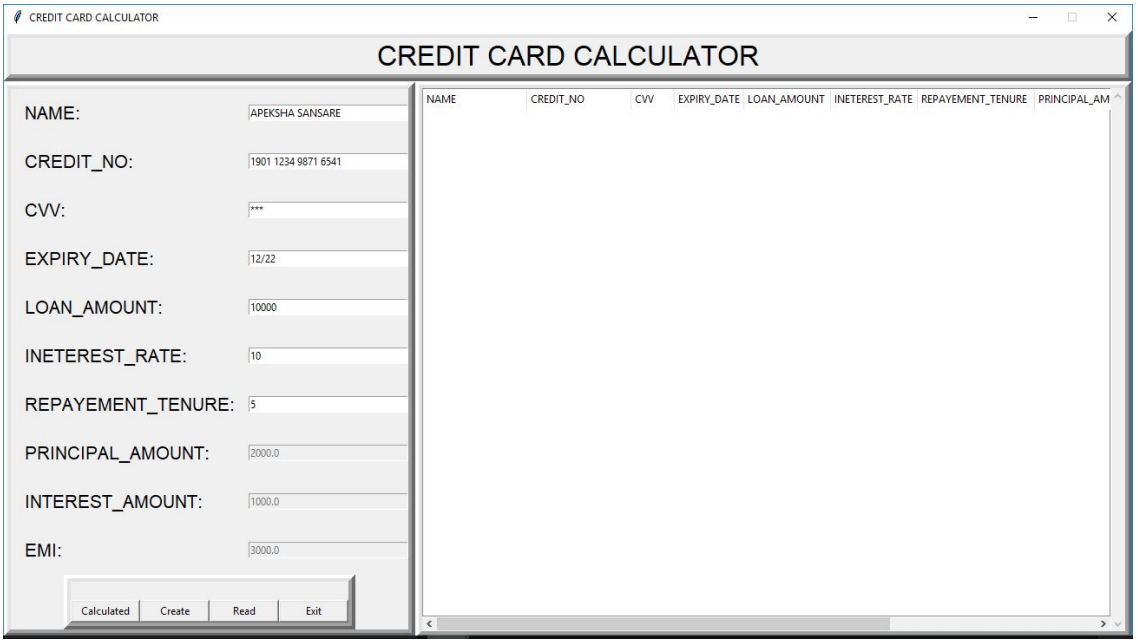
```
txt_CVV.grid(row=2, stick="w")
txt_EXPIRY_DATE = Label(Forms, text="EXPIRY_DATE:", font=('arial', 16), bd=15)
txt_EXPIRY_DATE.grid(row=3, stick="w")
txt_LOAN_AMOUNT= Label(Forms, text="LOAN_AMOUNT:", font=('arial', 16), bd=15)
txt_LOAN_AMOUNT.grid(row=4, stick="w")
txt_INETEREST_RATE = Label(Forms, text="INETEREST_RATE:", font=('arial', 16), bd=15)
txt_INETEREST_RATE.grid(row=5, stick="w")
txt_REPAYEMENT_TENURE = Label(Forms, text="REPAYEMENT_TENURE:", font=('arial', 16), bd=15)
txt_REPAYEMENT_TENURE.grid(row=6,stick="w")
txt_PRINCIPAL_AMOUNT = Label(Forms, text="PRINCIPAL_AMOUNT:", font=('arial', 16), bd=15)
txt_PRINCIPAL_AMOUNT.grid(row=7, stick="w")
txt_INTEREST_AMOUNT= Label(Forms, text="INTEREST_AMOUNT:", font=('arial', 16), bd=15)
txt_INTEREST_AMOUNT.grid(row=8, stick="w")
txt_EMI = Label(Forms, text="EMI:", font=('arial', 16), bd=15)
txt_EMI.grid(row=9, stick="w")

txt_result = Label(Buttons)
txt_result.pack(side=TOP)

#=======================ENTRY_WIDGET=============================
NAME = Entry(Forms, textvariable=NAME, width=30)
NAME.grid(row=0, column=1)
CREDIT_NO = Entry(Forms, textvariable=CREDIT_NO, width=30)
CREDIT_NO.grid(row=1, column=1)
CVV = Entry(Forms, textvariable=CVV, width=30, show="*")
CVV.grid(row=2, column=1)
EXPIRY_DATE = Entry(Forms, textvariable=EXPIRY_DATE, width=30)
EXPIRY_DATE.grid(row=3,column=1)
LOAN_AMOUNT = Entry(Forms, textvariable=LOAN_AMOUNT, width=30)
LOAN_AMOUNT.grid(row=4, column=1)
INETEREST_RATE= Entry(Forms, textvariable=INETEREST_RATE, width=30)
INETEREST_RATE.grid(row=5, column=1)
REPAYEMENT_TENURE= Entry(Forms, textvariable=REPAYEMENT_TENURE, width=30)
REPAYEMENT_TENURE.grid(row=6, column=1)
PRINCIPAL_AMOUNT=Entry(Forms, textvariable=PRINCIPAL_AMOUNT, width=30,state=DISABLED)
PRINCIPAL_AMOUNT.grid(row=7, column=1)
```

```
INTEREST_AMOUNT=Entry(Forms, textvariable=INTEREST_AMOUNT, width=30,state=DISABLED)
INTEREST_AMOUNT.grid(row=8, column=1)
EMI=Entry(Forms, textvariable=EMI, width=30,state=DISABLED)
EMI.grid(row=9, column=1)


#============================BUTTONS_WIDGET=====================
btn_pay=Button(Buttons, width=10,text="Calculated", command=lambda: calc(PRINCIPAL_AMOUNT,INTEREST_AMOUNT,EMI ))
btn_pay.pack(side=LEFT)
btn_update = Button(Buttons, width=10, text="Create", command=Create)
btn_update.pack(side=LEFT)
btn_read = Button(Buttons, width=10, text="Read", command=Read )
btn_read.pack(side=LEFT)
btn_exit = Button(Buttons, width=10, text="Exit", command=Exit)
btn_exit.pack(side=LEFT)

#============================LIST_WIDGET=========================
scrollbary = Scrollbar(Right, orient=VERTICAL)
scrollbarx = Scrollbar(Right, orient=HORIZONTAL)
tree = ttk.Treeview(Right, columns=("NAME", "CREDIT_NO","CVV", "EXPIRY_DATE", "LOAN_AMOUNT", "INETEREST_RATE", "REPAYEMENT_TENURE", "PRINCIPAL_AMOUNT", "INTEREST_AMOUNT", "EMI"), selectmode="extended", height=500, 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('NAME', text="NAME", anchor=W)
tree.heading('CREDIT_NO', text="CREDIT_NO", anchor=W)
tree.heading('CVV', text="CVV", anchor=W)
tree.heading('EXPIRY_DATE', text="EXPIRY_DATE", anchor=W)
tree.heading('LOAN_AMOUNT', text="LOAN_AMOUNT", anchor=W)
tree.heading('INETEREST_RATE', text="INETEREST_RATE", anchor=W)
tree.heading('REPAYEMENT_TENURE', text="REPAYEMENT_TENURE", anchor=W)
tree.heading('PRINCIPAL_AMOUNT', text="PRINCIPAL_AMOUNT", anchor=W)
tree.heading('INTEREST_AMOUNT', text="INTEREST_AMOUNT", anchor=W)
tree.heading('EMI', text="EMI", anchor=W)
tree.column('#0', stretch=NO, minwidth=0, width=0)
tree.column('#1', stretch=NO, minwidth=0, width=120)
tree.column('#2', stretch=NO, minwidth=0, width=120)
```

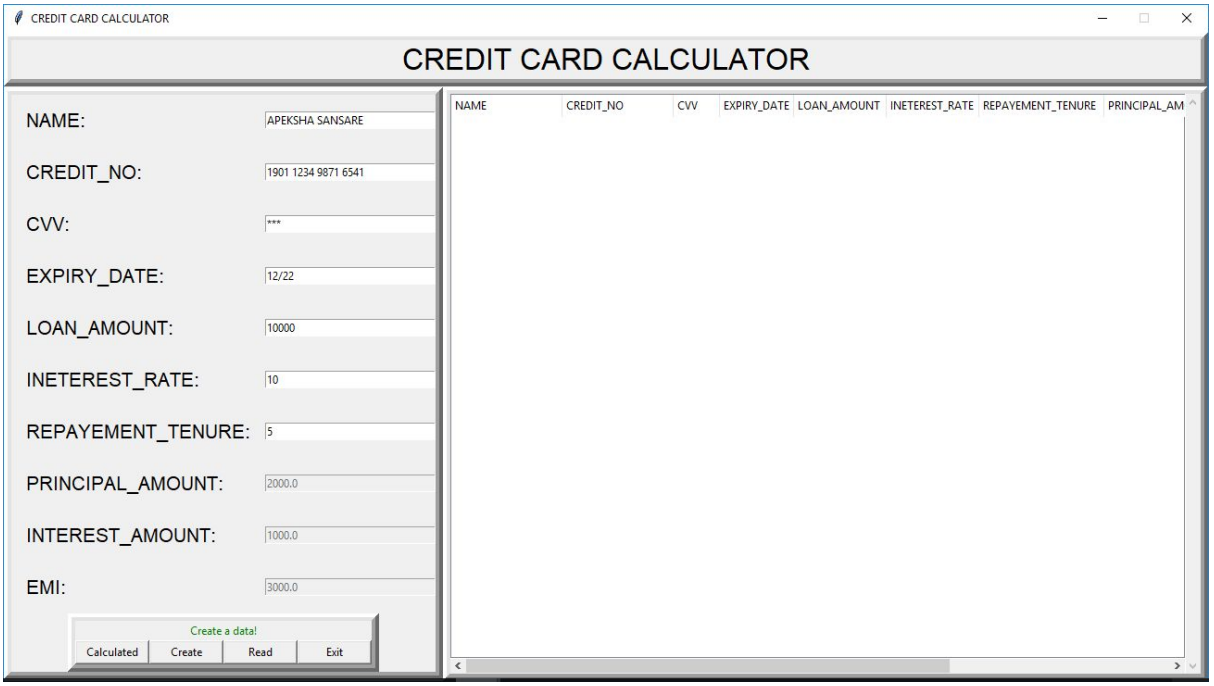
```
tree.column('#3', stretch=NO, minwidth=0, width=50)
tree.column('#4', stretch=NO, minwidth=0, width=80)
tree.column('#5', stretch=NO, minwidth=0, width=100)
tree.column('#6', stretch=NO, minwidth=0, width=100)
tree.column('#7', stretch=NO, minwidth=0, width=135)
tree.column('#8', stretch=NO, minwidth=0, width=125)
tree.column('#9', stretch=NO, minwidth=0, width=120)
tree.pack()

def calc(PRINCIPAL_AMOUNT,INTEREST_AMOUNT,EMI ):
    C0=float(LOAN_AMOUNT.get())
    p=float(REPAYEMENT_TENURE.get())
    f=float(INETEREST_RATE.get())

    PRINCIPAL_AMOUNT.configure(state=NORMAL)
    PRINCIPAL_AMOUNT.delete(0,'end')
    PRINCIPAL_AMOUNT.insert(0, str(C0/p))
    PRINCIPAL_AMOUNT.configure(state=DISABLED)


    INTEREST_AMOUNT.configure(state=NORMAL)
    INTEREST_AMOUNT.delete(0,'end')
    INTEREST_AMOUNT.insert(0,str(((C0*f)/100)))
    INTEREST_AMOUNT.configure(state=DISABLED)

    EMI.configure(state=NORMAL)
    EMI.delete(0,'end')
    EMI.insert(0,str((C0/p)+((C0*f)/100)))
    EMI.configure(state=DISABLED)


#==========================INITIALIZATION==========================
if __name__ == '__main__':
    root.mainloop()
```

SNAPSHOT:

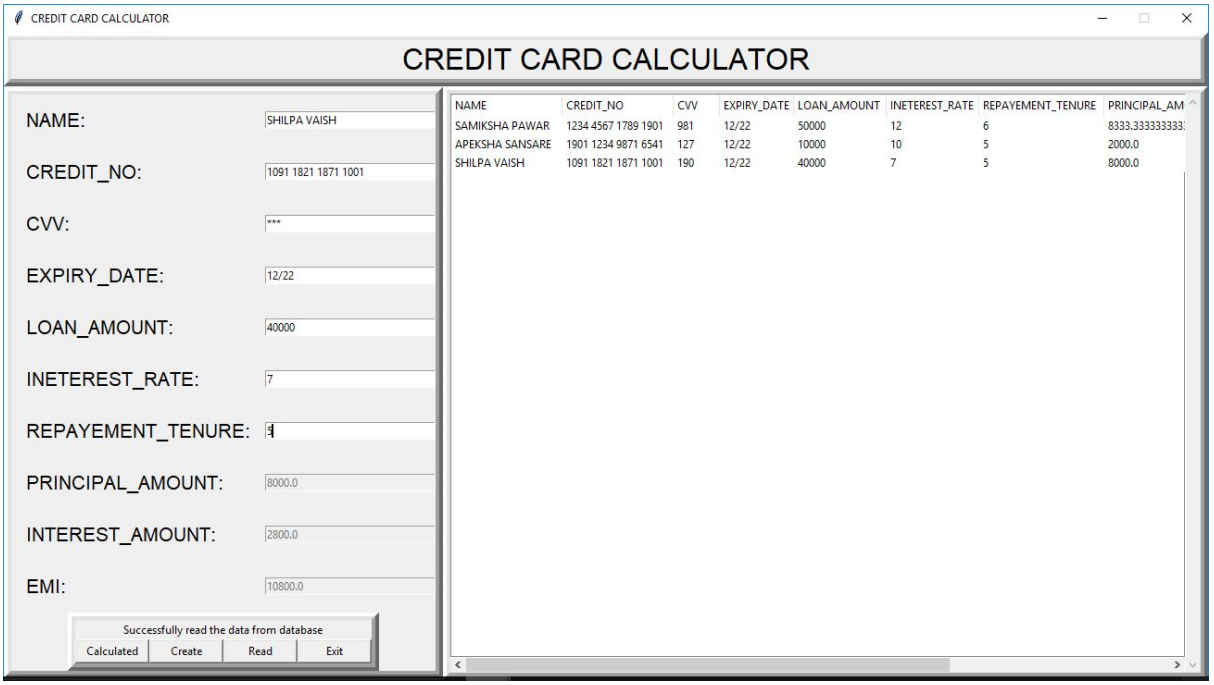
1. CALCULATE

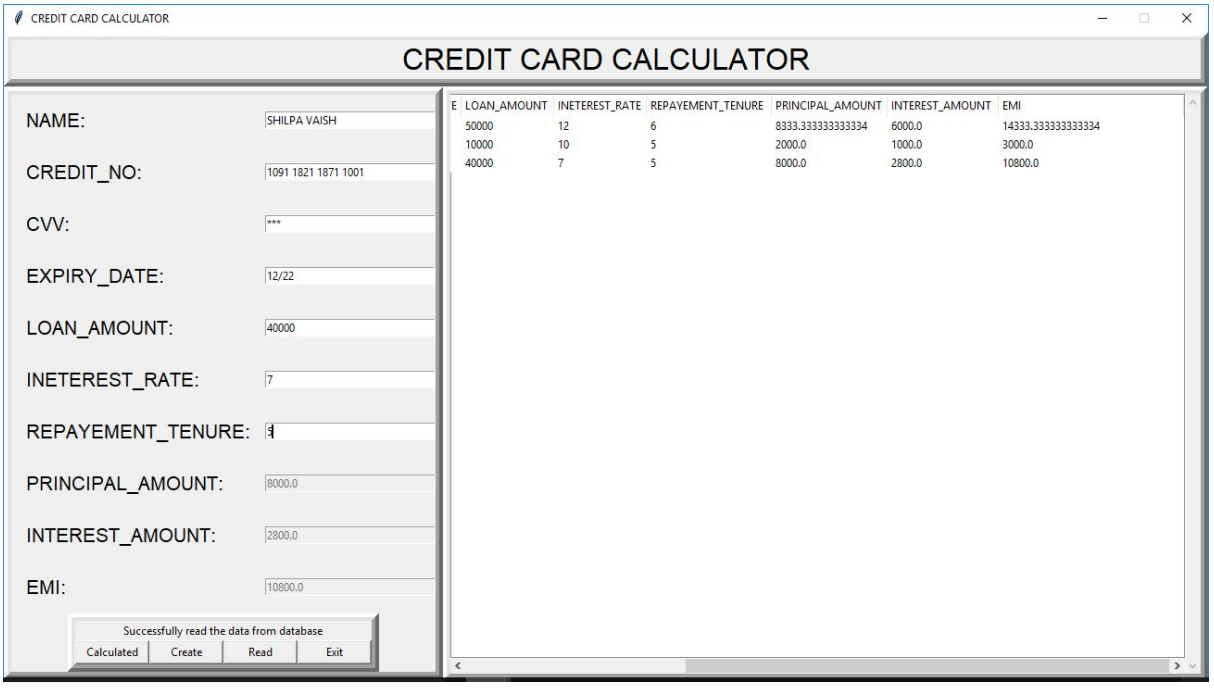


2. CREATE DATABASE

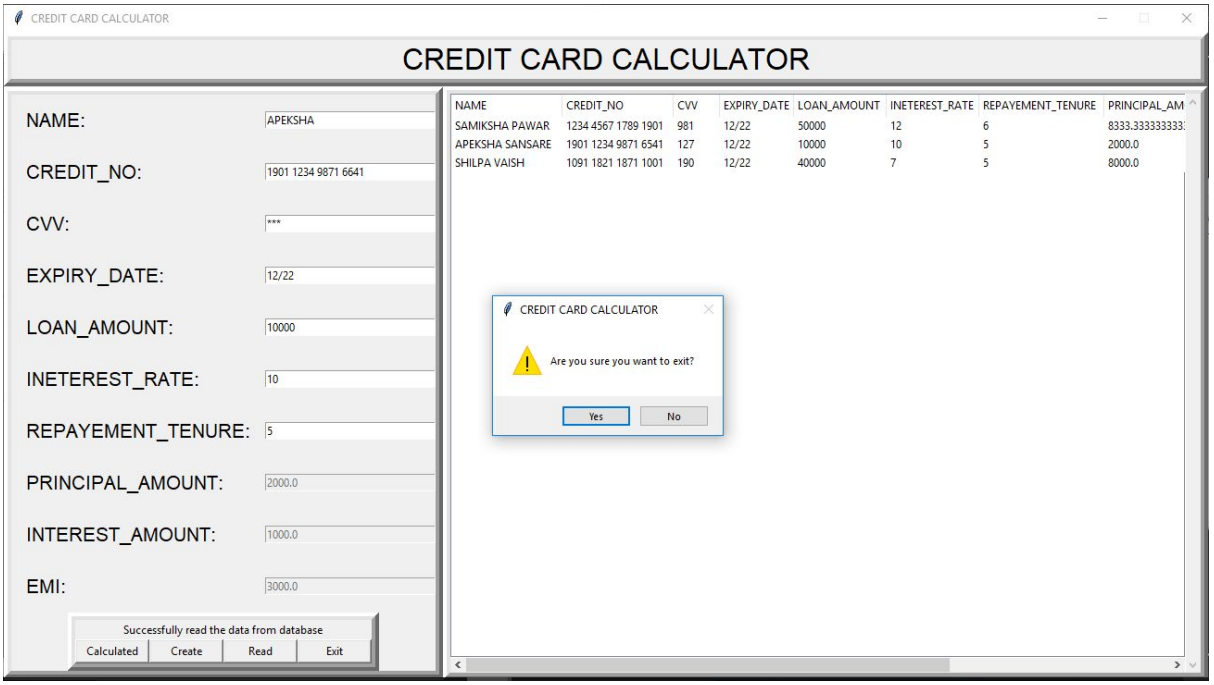


3. READ DATABASE





4. EXIT


CREDIT CARD CALCULATOR
CREDIT CARD CALCULATOR
NAME:
APEKSHA
CREDIT_NO:
1901 1234 9871 6641
CVV:
***
EXPIRY_DATE:
12/22
LOAN_AMOUNT:
10000
INETEREST_RATE:
10
REPAYEMENT_TENURE:
5
PRINCIPAL_AMOUNT:
2000.0
INTEREST_AMOUNT:
1000.0
EMI:
3000.0
Successfully read the data from database
Calculated
Create
Read
Exit
NAME
CREDIT_NO
CVV
EXPIRY_DATE
LOAN_AMOUNT
INETEREST_RATE
REPAYEMENT_TENURE
PRINCIPAL_AM
SAMIKSHA PAWAR
1234 4567 1789 1901
981
12/22
50000
12
6
8333.333333333
APEKSHA SANSARE
1901 1234 9871 6541
127
12/22
10000
10
5
2000.0
SHILPA VAISH
1091 1821 1871 1001
190
12/22
40000
7
5
8000.0
CREDIT CARD CALCULATOR
Are you sure you want to exit?
Yes
No