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## **MINI PROJECT REPORT**

**(Project Term Aug - Nov, 2022)**

**Topic: - ATM Management System**

**Submitted by**

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## **Acknowledgement**

I take this opportunity to present my votes of thanks to all the guidepost who really acted as lightening pillars to enlighten our way throughout this project that has led to successful and satisfactory completion of this study. We are really grateful to our teacher for providing us with an opportunity to undertake this project in this university and providing us with all the facilities. We are highly thankful to **Mr. Rajan Kakkar** sir for his active support, valuable time and advice and wholehearted guidance during the study and completing the assignment of preparing the said project within the time stipulated.

# **Introduction**

An ATM, which stands for automated teller machine, is a specialized machine computer that makes it convenient to manage a bank account holder's funds. It allows a person to check account balances, withdraw or deposit money, print a statement of account activities or transactions, and even purchase stamps.

In this project, we have created an ATM Management System which can do all the basic operations of an actual ATM like: - withdrawing money, depositing money and checking the available balance.

We have tried to make the ATM management system interactive and user-friendly.

## **Objective**

The goal of this project is creating an ATM management system using Graphical User Interface in Python. The ATM management system should be able to perform basic operations of an actual ATM like: -

- Withdrawing
- Depositing
- Checking available balance.

It should contain an account password validation page, which allows the user to access the different ATM operations if user enters the correct password.

# Code

```
import tkinter as tk
import tkinter.font as font
import tkinter.messagebox
import time

current_balance=100000

class SampleApp(tk.Tk):

    def __init__(self, *args, **kwargs):
        tk.Tk.__init__(self, *args, **kwargs)

        self.shared_data={'Balance':tk.IntVar()}

        container = tk.Frame(self)
        container.pack(side="top", fill="both", expand=True)
        container.grid_rowconfigure(0, weight=1)
        container.grid_columnconfigure(0, weight=1)

        self.frames = {}

        for F in (Cardpage, StartPage, MenuPage, WithdrawPage, DepositPage, BalancePage):
            page_name = F.__name__
            frame = F(parent=container, controller=self)
            self.frames[page_name] = frame
```

```
frame.grid(row=0, column=0, sticky="nsew")
```

```
self.show_frame("Cardpage")
```

```
def show_frame(self, page_name):  
    """Shows a frame for the given page name"""  
    frame = self.frames[page_name]  
    frame.tkraise()
```

```
class Cardpage(tk.Frame):
```

```
    def __init__(self, parent, controller):  
        tk.Frame.__init__(self, parent, bg='#3d3d5c')  
        self.controller = controller
```

```
        selection_label = tk.Label(self,  
                                    text='Card or Cardless?',  
                                    font=('Century',32),  
                                    foreground='white',  
                                    bg='#3d3d5c')
```

```
        selection_label.pack(fill='x')
```

```
        spacing_label = tk.Label(self, height=4, bg='#3d3d5c')
```

```
        spacing_label.pack()
```

```
        button_frame = tk.Frame(self, background="#33334d")
```

```
        button_frame.pack(fill='both', expand=True)
```

```
        myFont = font.Font(size=13)
```

```
def onClick():  
    tkinter.messagebox.showinfo("Oops!", "Sorry, this ATM does not support cash  
transactions via card.")
```

```
card_button = tk.Button(button_frame, text='Using a Card', command = onClick,  
relief='raised', borderwidth=3, width=50, height=4, bg="#4dffc3")  
card_button.place(x=530,y=130)  
card_button['font']=myFont
```

```
def cardless():  
    controller.show_frame('StartPage')
```

```
cardless_button = tk.Button(button_frame, text='Cardless', command = cardless,  
relief='raised', borderwidth=3, width=50, height=4, bg="#b3ffd9")  
cardless_button.place(x=530,y=230)  
cardless_button['font']=myFont
```

```
bottom_frame = tk.Frame(self,relief='raised', borderwidth=3)  
bottom_frame.pack(fill='x', side='bottom')
```

```
visa_pic = tk.PhotoImage(file='visa.png')  
visa_label = tk.Label(bottom_frame, image = visa_pic)  
visa_label.pack(side='left')  
visa_label.image = visa_pic
```



```

sbi_pic = tk.PhotoImage(file='sbi.png')
sbi_label = tk.Label(bottom_frame, image = sbi_pic)
sbi_label.pack(side='left')
sbi_label.image = sbi_pic

def tick():
    current_time = time.strftime('%I:%M %p').lstrip('0').replace(' 0',' ')
    time_label.config(text=current_time)
    time_label.after(200,tick)

time_label = tk.Label(bottom_frame,font=('orbitron',12))
time_label.pack(side='right')

tick()

```

```

class StartPage(tk.Frame):

```

```

    def __init__(self, parent, controller):
        tk.Frame.__init__(self, parent, background='#3d3d5c')
        self.controller = controller

        self.controller.title('ATM Machine')
        self.controller.state('zoomed')
        self.controller.iconphoto(False,
tk.PhotoImage(file='C:/Users/ss21x/Desktop/Python/ATM project/atm.png'))

        headingLabel = tk.Label(self,
                                text='ATM Machine',
                                font=('orbitron',45,'bold'),
                                foreground='white',
                                background='#3d3d5c')
        headingLabel.pack(pady=25)

```

```
spacing_label = tk.Label(self,height=4,bg='#3d3d5c')
spacing_label.pack()
```

```
password_Label = tk.Label(self,text='Enter 4 digit pin',
                           font=('orbitron',13),
                           bg='#3d3d5c',
                           fg='white')
password_Label.pack(pady=10)
```

```
my_password=tk.StringVar()
password_entry_space = tk.Entry(self,
                                textvariable=my_password,
                                font=('orbitron',12),
                                width=22)
password_entry_space.focus_set()
password_entry_space.pack(ipady=7)
```

```
def handle_focus_in(_):
    password_entry_space.configure(foreground='black', show='*')
```

```
password_entry_space.bind('<FocusIn>', handle_focus_in)
```

```
def check_password():
    if my_password.get() == '1234':
        my_password.set("")
        incorrect_password_label['text']=""
```

```
        controller.show_frame('MenuPage')
    else:
        incorrect_password_label['text']='Invalid Password'
submit_button = tk.Button(self,
                           text='Submit',
                           command=check_password,
                           relief='raised',
                           borderwidth=3,
                           width=40,
                           height=2)

submit_button.pack(pady=5)

incorrect_password_label = tk.Label(self,
                                    text="",
                                    font=('orbitron',13),
                                    fg='white',
                                    bg='#33334d',
                                    anchor='n')
incorrect_password_label.pack(fill='both',expand=True)

bottom_frame = tk.Frame(self,relief='raised', borderwidth=3)
bottom_frame.pack(fill='x', side='bottom')

visa_pic = tk.PhotoImage(file='visa.png')
visa_label = tk.Label(bottom_frame, image = visa_pic)
visa_label.pack(side='left')
visa_label.image = visa_pic
```

```

sbi_pic = tk.PhotoImage(file='sbi.png')
sbi_label = tk.Label(bottom_frame, image = sbi_pic)
sbi_label.pack(side='left')
sbi_label.image = sbi_pic

def tick():
    current_time = time.strftime('%I:%M %p').lstrip('0').replace(' 0',' ')
    time_label.config(text=current_time)
    time_label.after(200,tick)

time_label = tk.Label(bottom_frame,font=('orbitron',12))
time_label.pack(side='right')

tick()

```

```

class MenuPage(tk.Frame):

```

```

    def __init__(self, parent, controller):
        tk.Frame.__init__(self, parent,bg='#3d3d5c')
        self.controller = controller

        headingLabel = tk.Label(self,
                                text='ATM Machine',
                                font=('orbitron',45,'bold'),
                                foreground='white',
                                background='#3d3d5c')
        headingLabel.pack(pady=25)

        option_label = tk.Label(self,
                                text='Options',

```

```

        font=('orbitron',15),
        foreground='white',
        bg='#3d3d5c')
option_label.pack()

selection_label = tk.Label(self,
        text='Make a selection',
        font=('orbitron',14),
        foreground='white',
        bg='#3d3d5c',
        anchor='w')
selection_label.pack(fill='x')

button_frame = tk.Frame(self, background="#33334d")
button_frame.pack(fill='both', expand=True)

def withdraw():
    controller.show_frame('WithdrawPage')

    withdraw_button = tk.Button(button_frame, text='Withdraw', command = withdraw,
    relief='raised', borderwidth=3, width=50, height=5)

    withdraw_button.grid(row=0, column=0, pady=5)

def deposit():
    controller.show_frame('DepositPage')

    deposit_button = tk.Button(button_frame, text='Deposit', command = deposit,
    relief='raised', borderwidth=3, width=50, height=5)

    deposit_button.grid(row=1, column=0, pady=5)

```

```

def balance():
    controller.show_frame('BalancePage')

    balance_button = tk.Button(button_frame, text='Check Balance', command = balance,
    relief='raised', borderwidth=3, width=50, height=5)

    balance_button.grid(row=2, column=0, pady=5)

def exit():
    controller.show_frame('Cardpage')

    exit_button = tk.Button(button_frame, text='Exit', command = exit, relief='raised',
    borderwidth=3, width=50, height=5)

    exit_button.grid(row=3, column=0, pady=5)

bottom_frame = tk.Frame(self, relief='raised', borderwidth=3)
bottom_frame.pack(fill='x', side='bottom')

visa_pic = tk.PhotoImage(file='visa.png')
visa_label = tk.Label(bottom_frame, image = visa_pic)
visa_label.pack(side='left')
visa_label.image = visa_pic

sbi_pic = tk.PhotoImage(file='sbi.png')
sbi_label = tk.Label(bottom_frame, image = sbi_pic)
sbi_label.pack(side='left')
sbi_label.image = sbi_pic

def tick():
    current_time = time.strftime('%I:%M %p').lstrip('0').replace(' ', '')
    time_label.config(text=current_time)

```

```
time_label.after(200,tick)

time_label = tk.Label(bottom_frame,font=('orbitron',12))
time_label.pack(side='right')

tick()
```

```
class WithdrawPage(tk.Frame):
```

```
    def __init__(self, parent, controller):
        tk.Frame.__init__(self, parent, bg="#3d3d5c")
        self.controller = controller
```

```
        headingLabel = tk.Label(self,
                                   text='ATM Machine',
                                   font=('orbitron',45,'bold'),
                                   foreground='white',
                                   background='#3d3d5c')
        headingLabel.pack(pady=25)
```

```
    def withdraw(amount):
        global current_balance
        current_balance=current_balance-amount
        controller.shared_data['Balance'].set(current_balance)
        controller.show_frame('MenuPage')
```

```
spacing_label = tk.Label(self,height=7,bg='#3d3d5c')
spacing_label.pack()
```

```
enter_amount_label = tk.Label(self,
                                text='Please Enter Amount',
                                font=('orbitron',15),
                                foreground='white',
                                bg='#3d3d5c')
enter_amount_label.pack(pady=10)
```

```
cash=tk.StringVar()
amount_entry_space = tk.Entry(self,
                                textvariable=cash,
                                font=('orbitron',12),
                                width=22)
```

```
amount_entry_space.pack(ipady=7)
```

```
def amt(_):
    global current_balance
    current_balance-=int(cash.get())
    controller.shared_data['Balance'].set(current_balance)
    cash.set("")
```



```
controller.show_frame("MenuPage")
```

```
amount_entry_space.bind("<Return>",amt)
```

```
button_frame = tk.Frame(self, bg="#33334d")
```

```
button_frame.pack(fill='both', expand=True)
```

```
bottom_frame = tk.Frame(self,relief='raised', borderwidth=3)
```

```
bottom_frame.pack(fill='x', side='bottom')
```

```
visa_pic = tk.PhotoImage(file='visa.png')
```

```
visa_label = tk.Label(bottom_frame, image = visa_pic)
```

```
visa_label.pack(side='left')
```

```
visa_label.image = visa_pic
```

```
sbi_pic = tk.PhotoImage(file='sbi.png')
```

```
sbi_label = tk.Label(bottom_frame, image = sbi_pic)
```

```
sbi_label.pack(side='left')
```

```
sbi_label.image = sbi_pic
```

```
def tick():
```

```
    current_time = time.strftime('%I:%M %p').lstrip('0').replace(' 0','')
```

```
    time_label.config(text=current_time)
```

```
    time_label.after(200,tick)
```

```
time_label = tk.Label(bottom_frame,font=('orbitron',12))
```

```
time_label.pack(side='right')
```

```
tick()
```

```
class DepositPage(tk.Frame):
```

```
    def __init__(self, parent, controller):
```

```
        tk.Frame.__init__(self, parent, background="#3d3d5c")
```

```
        self.controller = controller
```

```
        headingLabel = tk.Label(self,
```

```
                                text='ATM Machine',
```

```
                                font=('orbitron',45,'bold'),
```

```
                                foreground='white',
```

```
                                background='#3d3d5c')
```

```
        headingLabel.pack(pady=25)
```

```
        spacing_label = tk.Label(self,height=4,bg='#3d3d5c')
```

```
        spacing_label.pack()
```

```
        deposit_money_Label = tk.Label(self,text='Enter amount',
```

```
                                       font=('orbitron',13),
```

```
                                       bg='#3d3d5c',
```

```
                                       fg='white')
```

```
        deposit_money_Label.pack(pady=10)
```

```
    def deposit_cash():
```

```
        global current_balance
```

```
        current_balance+=int(cash.get())
```

```
        controller.shared_data['Balance'].set(current_balance)
```

```
        controller.show_frame('MenuPage')
```

```
cash.set("")
```

```
cash=tk.StringVar()
```

```
deposit_entry=tk.Entry(self, textvariable=cash, font=('orbitron',12), width=22)
```

```
deposit_entry.pack(ipady=7)
```

```
enter_button=tk.Button(self, text='Enter', command=deposit_cash, relief='raised',  
borderwidth=3, width=40, height=2)
```

```
enter_button.pack(pady=10)
```

```
two_tone_label=tk.Label(self, bg='#33334d')
```

```
two_tone_label.pack(fill='both', expand=True)
```

```
bottom_frame = tk.Frame(self,relief='raised', borderwidth=3)
```

```
bottom_frame.pack(fill='x', side='bottom')
```

```
visa_pic = tk.PhotoImage(file='visa.png')
```

```
visa_label = tk.Label(bottom_frame, image = visa_pic)
```

```
visa_label.pack(side='left')
```

```
visa_label.image = visa_pic
```

```
sbi_pic = tk.PhotoImage(file='sbi.png')
```

```
sbi_label = tk.Label(bottom_frame, image = sbi_pic)
```

```
sbi_label.pack(side='left')
```

```
sbi_label.image = sbi_pic
```

```
def tick():
```

```
    current_time = time.strftime('%I:%M %p').lstrip('0').replace(' 0','')
```

```
time_label.config(text=current_time)
time_label.after(200,tick)
time_label = tk.Label(bottom_frame,font=('orbitron',12))
time_label.pack(side='right')
```

```
tick()
```

```
class BalancePage(tk.Frame):
```

```
    def __init__(self, parent, controller):
        tk.Frame.__init__(self, parent, bg='#3d3d5c')
        self.controller = controller
```

```
        headingLabel = tk.Label(self,
                                text='ATM Machine',
                                font=('orbitron',45,'bold'),
                                foreground='white',
                                background='#3d3d5c')
```

```
        headingLabel.pack(pady=25)
```

```
        global current_balance
```

```
        controller.shared_data['Balance'].set(current_balance)
```

```
        balance_label=tk.Label(self, textvariable=controller.shared_data['Balance'],
                                font=('orbitron',13),fg='white',bg='#3d3d5c',anchor='w')
```

```
        balance_label.pack(fill='x')
```

```
        button_frame=tk.Frame(self,bg='#3d3d5c')
```

```
        button_frame.pack(fill='both',expand=True)
```

```
    def menu():
```

```
controller.show_frame('MenuPage')
```

```
menu_button = tk.Button(button_frame, command=menu, text='Menu', relief='raised',  
borderwidth=3, width=50, height=5)
```

```
menu_button.grid(row=0, column=0, pady=5)
```

```
def exit():
```

```
    controller.show_frame('Cardpage')
```

```
    exit_button = tk.Button(button_frame, text='Exit', command=exit, relief='raised',  
borderwidth=3, width=50, height=5)
```

```
    exit_button.grid(row=1, column=0, pady=5)
```

```
bottom_frame = tk.Frame(self, relief='raised', borderwidth=3)
```

```
bottom_frame.pack(fill='x', side='bottom')
```

```
visa_pic = tk.PhotoImage(file='visa.png')
```

```
visa_label = tk.Label(bottom_frame, image = visa_pic)
```

```
visa_label.pack(side='left')
```

```
visa_label.image = visa_pic
```

```
sbi_pic = tk.PhotoImage(file='sbi.png')
```

```
sbi_label = tk.Label(bottom_frame, image = sbi_pic)
```

```
sbi_label.pack(side='left')
```

```
sbi_label.image = sbi_pic
```

```
def tick():
```

```
    current_time = time.strftime('%I:%M %p').lstrip('0').replace(' 0', ' ')
```

```
    time_label.config(text=current_time)
```

```
    time_label.after(200, tick)
```

```
time_label = tk.Label(bottom_frame, font=('orbitron', 12))
```

```
time_label.pack(side='right')
```

```
tick()
```

```
if __name__ == "__main__":
```

```
    app = SampleApp()
```

```
    app.mainloop()
```

## Result screenshots



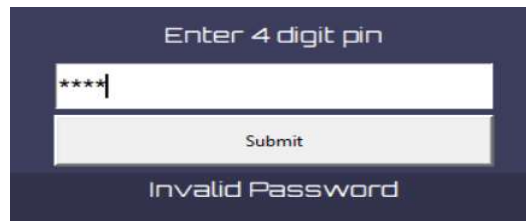
As this is simply a mini prototype model, so cash transactions via card are not possible. Hence, a pop-up window appears when you click on the option "Using a Card".



When you click on "Cardless" option, it redirects you to the password entry frame.



Correct password is- 1234, so if you enter any other password, it will show “Invalid Password”.



A screenshot of a dark-themed interface for entering a PIN. At the top, it says "Enter 4 digit pin". Below this is a white input field containing four asterisks "\*\*\*\*" and a cursor. Underneath the input field is a light gray button labeled "Submit". At the bottom of the screen, the text "Invalid Password" is displayed in white.

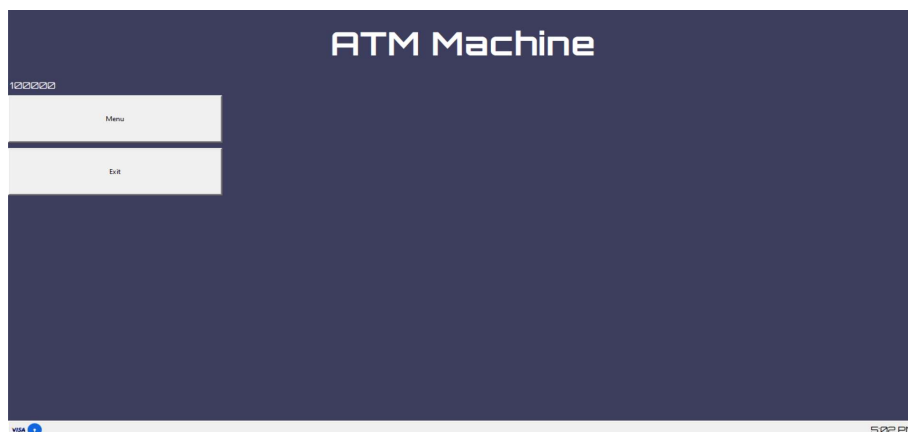
If you enter the correct password and click on the submit button, then it will redirect you to the Main Menu.



A screenshot of a web application titled "ATM Machine" in a browser window. The page has a dark blue header with the title "ATM Machine" and the word "Options" below it. On the left side, under the heading "Make a selection", there are four light gray buttons stacked vertically: "Withdraw", "Deposit", "Check Balance", and "Exit". The rest of the page is a solid dark blue. At the bottom left, there is a Visa logo, and at the bottom right, the time "4:59 PM" is shown.

There are 4 options available there namely- Withdraw, Deposit, Check Balance and Exit.

The initial balance that I’ve set is 100000, so depending on the operation you perform it will get deducted or added.



A screenshot of the "ATM Machine" web application. In the top left corner, the number "100000" is displayed in white. Below it, on the left side, are two light gray buttons: "Menu" and "Exit". The rest of the page is a solid dark blue. At the bottom left, there is a Visa logo, and at the bottom right, the time "5:02 PM" is shown.



Withdraw page: -

ATM Machine

Please Enter Amount

VISA

5:07 PM

Deposit page: -

ATM Machine

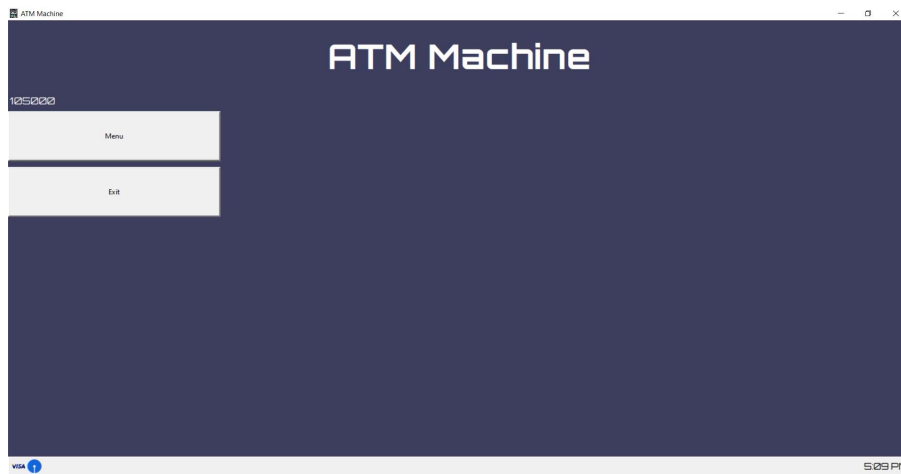
Enter amount

Enter

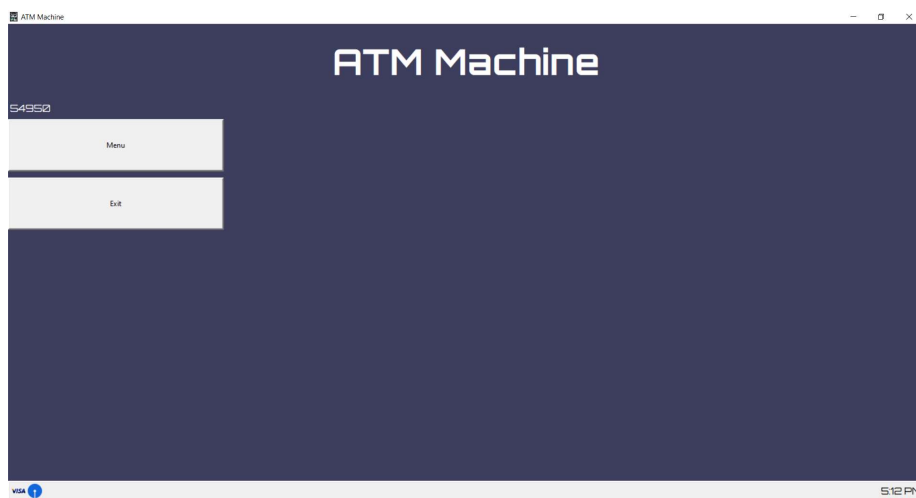
VISA

5:08 PM

Balance increasing after using deposit function



Balance decreasing after using withdraw function



Exit button simply takes you to the card or cardless page.

## **Conclusion**

This was a simple and fun project which made us more familiar with the working of Python GUI or tkinter. We were also able to learn some new concepts like: - switching between two frames in tkinter, two-tone frames and making a pop-up appear when a certain task is performed etc.

The learning experience of making this project will allow us to create better projects in the nearby future.

# **References**

- <https://www.semicolonworld.com/question/42826/switch-between-two-frames-in-tkinter>
- <https://www.geeksforgeeks.org/>
- <https://stackoverflow.com/>