EEI3372 Programming in Python

Mini Project

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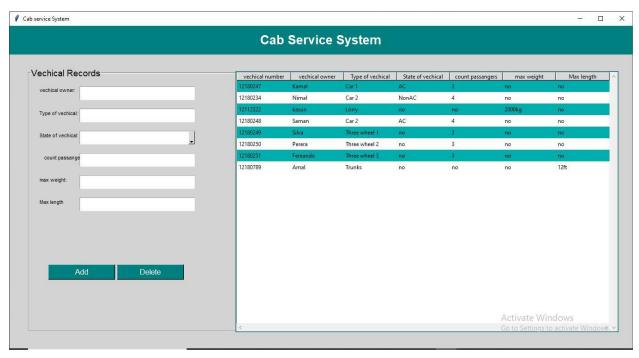
Introduction about Project

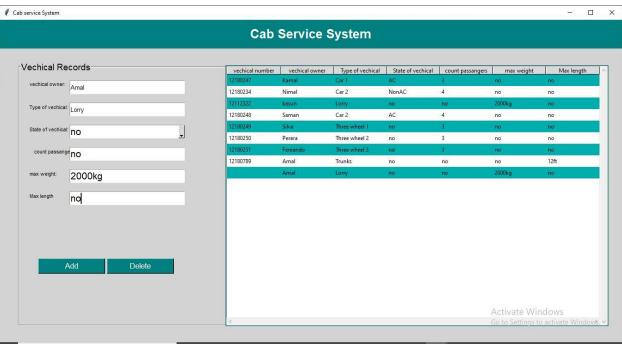
This project should implement a cab services system using a python programming language. So this system has some functionalities. There are

- Add a new vehicle to the system
- Remove a vehicle from the system
- Assign a job (hire)
- Release from an assigned job(hire) after completing
- See available vehicles in each category

The above requirements should implement in our system.

In this system, I use a graphical user interface. So I use the "Tkinter" option. Tkinter is a way of creating GUI in python. When downloading python, The Tkinter option automatically installs. First should import the Tkinter for our project. Then can get a blank GUI Interface. After that coding relevant source code.





Code

```
student.py - C:\Users\iTEC\Desktop\python projects\student.py (3.10.4)
                                                                                              File Edit Format Run Options Window Help
import tkinter as tk
from tkinter import Button, StringVar, Widget, ttk
from tkinter.constants import END
win = tk.Tk()
win.geometry("1350x700+0+0")
win.title("Cab service System")
#Background Color
win.config(bg="lightgray")
#Adding some style
style = ttk.Style()
#Pick a theme
style.theme use("default")
style.configure("Treeview",
 background="white",
  foreground="black",
  rowheight=25,
                                                                              Go to Settings to activate Wind
  fieldbackground="white"
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🝌 student.py - C:\Users\iTEC\Desktop\python projects\student.py (3.10.4)
                                                                                              File Edit Format Run Options Window Help
#Change selected color
style.map(
  "Treeview",
  background=[("selected", "darkred")]
#Top Menu
title label = tk.Label(
  text="Cab Service System",
  font=("Arial", 20, "bold"),
  padx=15,
  pady=15,
  border=0,
  relief=tk.GROOVE,
  bg="teal",
  foreground="white"
title_label.pack(side=tk.TOP, fill=tk.X)
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#Taft Manu
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student.py - C:\Users\iTEC\Desktop\python projects\student.py (3.10.4)
                                                                                            File Edit Format Run Options Window Help
#Left Menu
detail frame = tk.LabelFrame(
  win, text="Vechical Records",
  font=("Arial", 14),
  bg="lightgray",
  foreground="black",
  relief=tk.GROOVE
detail frame.place(x=40, y=90, width=480, height=570)
#Data Frame
data frame = tk.Frame(
  bg="teal",
  relief=tk.GROOVE
                                                                            Activate Windows
data frame.place(x=490, y=98, width=830, height=565)
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istudent.py - C:\Users\iTEC\Desktop\python projects\student.py (3.10.4)
File Edit Format Run Options Window Help
#Label with Entry
id lab = tk.Label(
  detail frame,
  text="vechical number:",
  font=("Arial", 8),
  bg="lightgray",
  foreground="black"
id_{lab.place(x=20, y=15)}
#entry
id ent = tk.Entry(
  detail frame,
 bd=1,
  font=("arial", 10),
  bg="white",
  foreground="black",
id ent.place(x=110, y=17, width=250, height=30)
owner lab = tk.Label(
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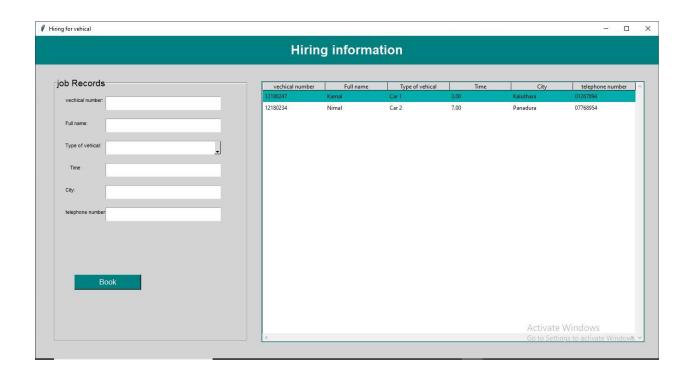
```
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                                                                                          File Edit Format Run Options Window Help
owner_lab.place(x=20, y=15)
#entry
owner ent = tk.Entry(
  detail frame,
  bd=1,
  font=("arial", 10),
  bg="white",
  foreground="black",
owner ent.place(x=110, y=17, width=250, height=30)
#2
name lab = tk.Label(
  detail frame,
  text="Type of vechical:",
  font=("Arial", 8),
                                                                           Activate Windows
  bg="lightgray",
  foreground="black"
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istudent.py - C:\Users\iTEC\Desktop\python projects\student.py (3.10.4)
File Edit Format Run Options Window Help
name lab.place(x=20, y=65)
#entry
name ent = tk.Entry(
  detail_frame,
  bd=1,
  font=("arial", 10),
  bg="white",
  foreground="black",
name_ent.place(x=110, y=65, width=250, height=30)
state lab = tk.Label(
  detail frame,
  text="State of vechical:",
  font=("Arial", 8),
  bg="lightgray",
  foreground="black"
state lab.place(x=20, y=113)
#ant nu
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student.py - C:\Users\iTEC\Desktop\python projects\student.py (3.10.4)
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state lab.place(x=20, y=113)
#entry
state ent = ttk.Combobox(
      detail frame,
      font=("arial", 16),
state ent["values"] = ("AC", "non AC")
state ent.place(x=110, y=113, width=250, height=30)
num lab = tk.Label(
      detail frame,
      text="count passangers",
      font=("Arial", 8),
     bg="lightgray",
      foreground="black"
num lab.place(x=30, y=161)
                                                                                                                                                                                                                              Activate Windows
#entry
num ent = tk.Entry(
    dotail framo
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student.py - C:\Users\iTEC\Desktop\python projects\student.py (3.10.4)
File Edit Format Run Options Window Help
#entry
num ent = tk.Entry(
      detail frame,
     bd=1,
     font=("arial", 16),
     bg="white",
      foreground="black",
num ent.place(x=110, y=161, width=250, height=30)
#5
max lab = tk.Label(
      detail frame,
      text="max weight:",
      font=("Arial", 8),
     bg="lightgray",
      foreground="black"
max lab.place(x=20, y=209)
#entry
max ent = tk.Entry(
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#Database frame
main frame = tk.Frame(
  data frame,
 bg="teal",
 bd=2,
  relief=tk.GROOVE
main frame.pack(fill=tk.BOTH, expand=True)
y scroll = tk.Scrollbar(main frame, orient=tk.VERTICAL)
x scroll = tk.Scrollbar(main frame, orient=tk.HORIZONTAL)
#Treeview database
cab table = ttk.Treeview(main_frame, columns=(
  "vechical number", "vechical owner", "Type of vechical", "State of vechical", "
), yscrollcommand=y scroll.set, xscrollcommand=x scroll.set)
                                                                       Activate Windows
y scroll.config(command=cab table.yview)
x scroll.config(command=cab table.xview)
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student.py - C:\Users\iTEC\Desktop\python projects\student.py (3.10.4)
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cab_table.heading("vechical number", text="vechical number")
cab table.heading("vechical owner", text="vechical owner")
cab table.heading("Type of vechical", text="Type of vechical")
cab_table.heading("State of vechical", text="State of vechical")
cab_table.heading("count passangers", text="count passangers")
cab table.heading("max weight", text="max weight")
cab table.heading("Max length", text="Max length")
cab table["show"] = "headings"
cab_table.column("vechical number", width=100)
cab table.column("vechical owner", width=100)
cab table.column("Type of vechical", width=100)
cab table.column("State of vechical", width=100)
cab table.column("count passangers", width=100)
cab table.column("max weight", width=100)
cab table.column("Max length", width=100)
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cab table.pack(fill=tk.BOTH, expand=True)
#Default data
data=[
  ["12180247", "Kamal", "Car 1", "AC", "3", "no", "no"], ["12180234", "Nimal", "Car 2", "NonAC", "4", "no", "no"],
  ["12112322", "kasun", "Lorry", "no", "no", "2000kg", "no"], ["12180248", "Saman", "Car 2", "AC", "4", "no", "no"],
  ["12180249", "Silva", "Three wheel 1", "no", "3", "no", "no"],
  ["12180250", "Perera", "Three wheel 2", "no", "3", "no", "no"],
  ["12180251", "Fereando", "Three wheel 3", "no", "3", "no", "no"], ["12180789", "Amal", "Trunks", "no", "no", "no", "12ft"],
1
#Create stripped row tags
                                                                                  Activate Windows
cab table.tag configure("oddrow", background="white")
cab table.tag configure("evenrow", background="#00AEAE")
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student.py - C:\Users\iTEC\Desktop\python projects\student.py (3.10.4)
File Edit Format Run Options Window Help
#Functions
#Add Function
def add record():
  cab table.tag configure("oddrow", background="white")
  cab table.tag configure("evenrow", background="#00AEAE")
  global count
  if count % 2 == 0:
     cab table.insert(parent="", index="end", iid=count, text="", values=(
     id ent.get(),
     owner ent.get(),
     name ent.get(),
     state ent.get(),
     num ent.get(),
     max ent .get(),
     len ent.get(),
),
     tags=("evenrow")
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student.py - C:\Users\iTEC\Desktop\python projects\student.py (3.10.4)
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    cab table.insert(parent="", index="end", iid=count, text="", values=(
    id ent.get(),
    owner ent.get(),
    name ent.get(),
    state ent.get(),
    num ent.get(),
    max ent .get(),
    len ent.get(),
),
    tags=("oddrow")
 count += 1
#Delete All Function
def delete_all():
 for record in cab table.get children():
      cab table.delete(record)
                                                                        Activate Windows
#Delete One Function
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hire.py - C:\Users\iTEC\Desktop\python projects\hire.py (3.10.4)
File Edit Format Run Options Window Help
import tkinter as tk
from tkinter import Button, StringVar, Widget, ttk
from tkinter.constants import END
win = tk.Tk()
win.geometry("1350x700+0+0")
win.title("Hiring for vehical")
#Background Color
win.config(bg="lightgray")
#Adding some style
style = ttk.Style()
#Pick a theme
style.theme_use("default")
style.configure("Treeview",
  background="white",
  foreground="black",
  rowheight=25,
  fieldbackground="white"
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File Edit Format Run Options Window Help
#Change selected color
style.map(
  "Treeview",
  background=[("selected", "darkred")]
#Top Menu
title_label = tk.Label(
  win,
  text="Hiring information",
  font=("Arial", 20, "bold"),
  padx=15,
  pady=15,
  border=0,
  relief=tk.GROOVE,
  bg="teal",
  foreground="white"
title label.pack(side=tk.TOP, fill=tk.X)
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hire.py - C:\Users\iTEC\Desktop\python projects\hire.py (3.10.4)
File Edit Format Run Options Window Help
#Left Menu
detail frame = tk.LabelFrame(
  win, text="job Records",
  font=("Arial", 14),
  bg="lightgray",
  foreground="black",
  relief=tk.GROOVE
detail frame.place(x=40, y=90, width=420, height=570)
#Data Frame
data_frame = tk.Frame(
  win,
  bg="teal",
  relief=tk.GROOVE
data frame.place(x=490, y=98, width=830, height=565)
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hire.py - C:\Users\iTEC\Desktop\python projects\hire.py (3.10.4)
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File Edit Format Run Options Window Help
#Label with Entry
id lab = tk.Label(
  detail frame,
  text="vechical number:",
  font=("Arial", 8),
  bg="lightgray",
  foreground="black"
id_{ab.place(x=20, y=15)}
#entry
id_ent = tk.Entry(
    detail frame,
  bd=1,
  font=("arial", 10),
  bg="white",
  foreground="black",
id_ent.place(x=110, y=17, width=250, height=30)
#2
                                                                                            Ln: 8 Col: 0
```

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File Edit Format Run Options Window Help
name lab = tk.Label(
  detail frame,
  text="Full name:",
  font=("Arial", 8),
  bg="lightgray",
  foreground="black"
name lab.place(x=20, y=65)
#entry
name ent = tk.Entry(
  detail frame,
  bd=1,
  font=("arial", 10),
  bg="white",
  foreground="black",
name_ent.place(x=110, y=65, width=250, height=30)
state lab = tk.Label(
  detail frame,
                                                                                                 Ln: 8 Col: 0
hire.py - C:\Users\iTEC\Desktop\python projects\hire.py (3.10.4)
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File Edit Format Run Options Window Help
  detail_frame,
  text="City:",
font=("Arial", 8),
  bg="lightgray",
  foreground="black"
city lab.place(x=20, y=209)
#entry
city_ent = tk.Entry(
  detail_frame,
  bd=1,
  font=("arial", 16),
  bg="white",
  foreground="black",
city_ent.place(x=110, y=209, width=250, height=30)
#6
len_lab = tk.Label(
  detail frame,
  text="telephone number",
   font=("Arial", 8),
                                                                                             Ln: 8 Col: 0
```

```
hire.py - C:\Users\iTEC\Desktop\python projects\hire.py (3.10.4)
File Edit Format Run Options Window Help
# Database frame
main frame = tk.Frame(
  data frame,
  bg="teal",
 bd=2,
  relief=tk.GROOVE
main_frame.pack(fill=tk.BOTH, expand=True)
y_scroll = tk.Scrollbar(main_frame, orient=tk.VERTICAL)
x scroll = tk.Scrollbar(main_frame, orient=tk.HORIZONTAL)
hire table = ttk. Treeview (main frame, columns=(
"vechical number", "Full name", "Type of vehical", "Time", "City", "telephone number", yscrollcommand=y_scroll.set, xscrollcommand=x_scroll.set)
y scroll.config(command=hire table.yview)
x scroll.config(command=hire table.xview)
y scroll.pack(side=tk.RIGHT, fill=tk.Y)
x scroll.pack(side=tk.BOTTOM, fill=tk.X)
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hire.py - C:\Users\iTEC\Desktop\python projects\hire.py (3.10.4)
File Edit Format Run Options Window Help
hire_table.heading("vechical number", text="vechical number")
hire table.heading("Full name", text="Full name")
hire table.heading("Type of vehical", text="Type of vehical")
hire table.heading("Time", text="Time")
hire table.heading("City", text="City")
hire table.heading("telephone number", text="telephone number")
hire table["show"] = "headings"
hire table.column("vechical number", width=100)
hire_table.column("Full name", width=100)
hire table.column("Type of vehical", width=100)
hire_table.column("Time", width=100)
hire_table.column("City", width=100)
hire table.column("telephone number", width=100)
hire table.pack(fill=tk.BOTH, expand=True)
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hire.py - C:\Users\iTEC\Desktop\python projects\hire.py (3.10.4)
File Edit Format Run Options Window Help
  ["12180247", "Kamal", "Car 1", "3.00", "Kaluthara", "01267894"], ["12180234", "Nimal", "Car 2", "7.00", "Panadura", "07768954"],
#Create stripped row tags
hire_table.tag_configure("oddrow", background="white")
hire_table.tag_configure("evenrow", background="#00AEAE")
global count
count=0
for record in data:
  if count % 2 == 0:
     hire_table.insert(parent="", index="end", iid=count, text="", values=(record[0],
  else:
     hire table.insert(parent="", index="end", iid=count, text="", values=(record[0],
  count += 1
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hire.py - C:\Users\iTEC\Desktop\python projects\hire.py (3.10.4)
File Edit Format Run Options Window Help
btn frame = tk.Frame(
  detail frame,
  bg="lightgray",
  bd=0,
  relief=tk.GROOVE
btn_frame.place(x=40, y=400, width=310, height=130)
#Add Button
add btn = tk.Button(
  btn frame,
  bg="teal",
  foreground="white",
  text="Book",
  bd=2,
  font=("Arial", 13), width=15,
add btn.grid(row=0, column=0, padx=2, pady=2)
win.mainloop()
                                                                                               Ln: 8 Col: 0
```

Conclusion

- Learn how to create GUI using python
- Learn about python functionalities
- Learn about system requirements
- Learn more about python syntax