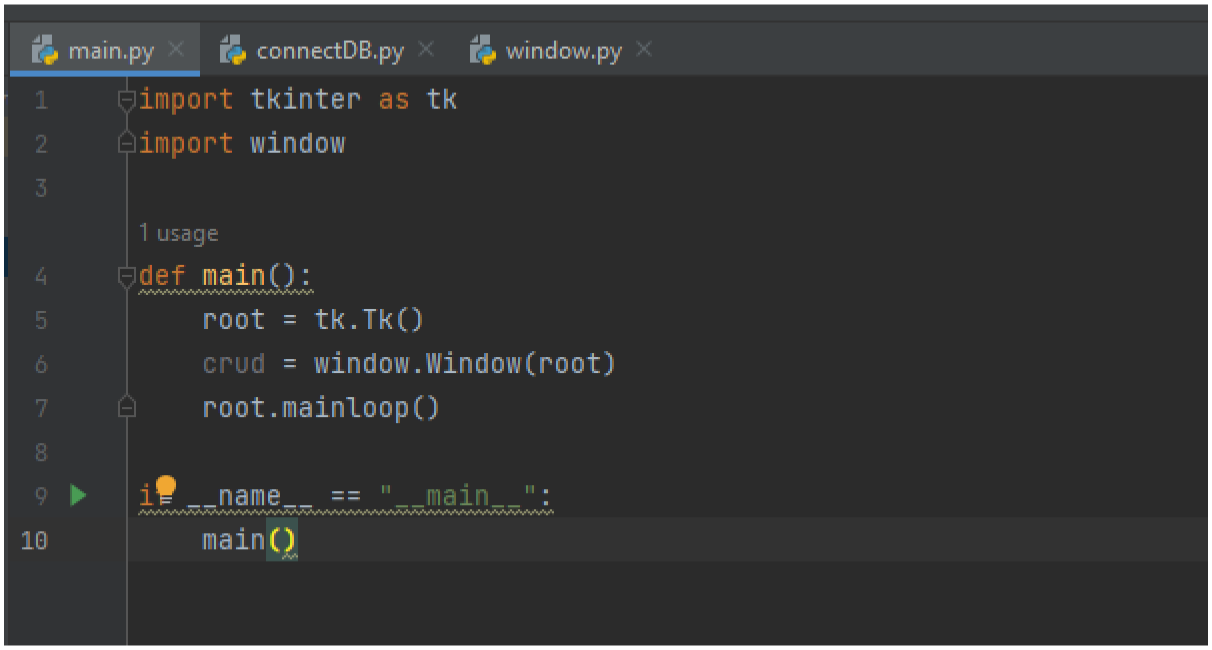
Ngo, Charles Edrick P. **7OOP**

BSCS – C204 **TASK 6**

CODE:

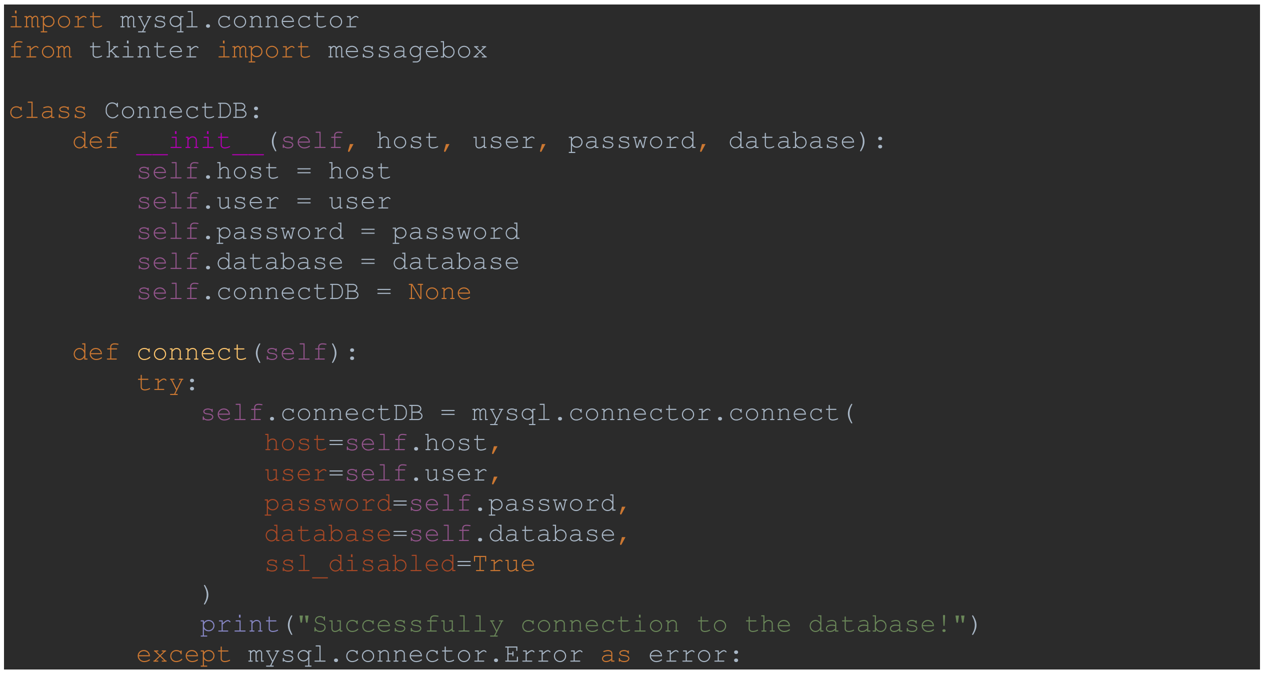
Main.py



main.py connectDB.py window.py

```python
import tkinter as tk
import window

1 usage
def main():
    root = tk.Tk()
    crud = window.Window(root)
    root.mainloop()

if __name__ == "__main__":
    main()
```

connectDB.py



```python
import mysql.connector
from tkinter import messagebox

class ConnectDB:
    def __init__(self, host, user, password, database):
        self.host = host
        self.user = user
        self.password = password
        self.database = database
        self.connectDB = None

    def connect(self):
        try:
            self.connectDB = mysql.connector.connect(
                host=self.host,
                user=self.user,
                password=self.password,
                database=self.database,
                ssl_disabled=True
            )
            print("Successfully connection to the database!")
        except mysql.connector.Error as error:
            print("Something went wrong connecting to the database: ", error)

    def disconnect(self):
        if self.connectDB:
            self.connectDB.close()
            print("Successfully disconnecting to the database!")

    def execute_insert(self, table, id, model, year, color, capacity, power,
type, transmission, price):
        sql = f"INSERT INTO {table}(id, model, year, color, engineCapacity,
enginePower, engineType, transmission, price) VALUES({id},'{model}',
'{year}', '{color}', {capacity},{power}, '{type}','{transmission}',{price})"
        self.commit_to_db(sql)

    def execute_delete(self, table, id):
        sql = f"DELETE FROM {table} WHERE id = {id}"
        self.commit_to_db(sql)

    def execute_update(self, table, id, model, year, color, capacity, power,
engineType, transmission, price):
        sql = f"UPDATE {table} SET model='{model}', year='{year}',
color='{color}', engineCapacity={capacity}, enginePower={power},
engineType='{engineType}',transmission='{transmission}', price={price} WHERE
id={id}"
        cursor = self.connectDB.cursor()
        self.commit_to_db(sql)

    def commit_to_db(self, sql):
        cursor = self.connectDB.cursor()
        try:
            cursor.execute(sql)
            self.connectDB.commit()
            print("Query successfully executed")
            messagebox.showinfo("Successfully", "Query successfully executed.
Good Work!")
        except mysql.connector.Error as error:
            self.connectDB.rollback()
            print("Error executing the query:", error)
            messagebox.showerror("Error", "Duplicate ID entry, please try
again!")

    def execute_select(self, table):
        sql = f"SELECT * FROM {table}"
        cursor = self.connectDB.cursor()
        try:
            cursor.execute(sql)
            rows = cursor.fetchall()
            return rows
        except mysql.connector.Error as error:
            print("Error executing the query:", error)
            return []

    def __str__(self):
        data = self.execute_select("car")
        aux = ""
        for row in data:
            aux += str(row) + "\n"
        return aux
```

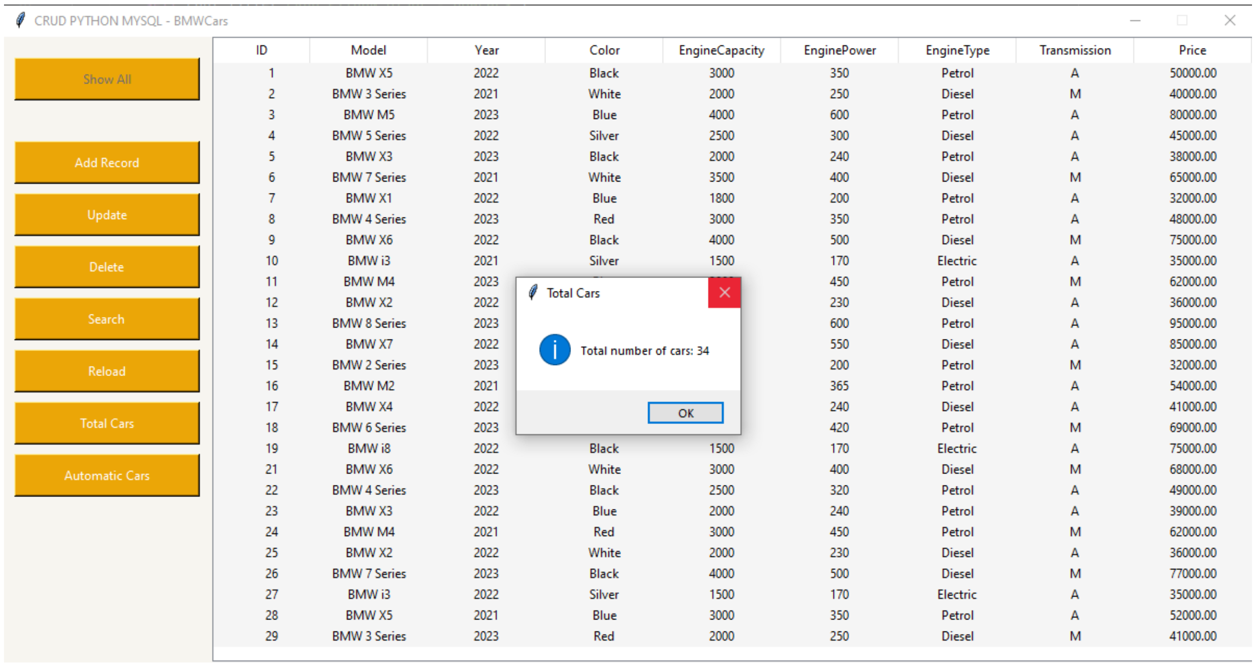
window.py

```
import tkinter as tk
from tkinter import font
from tkinter import ttk
from connectDB import *
from tkinter import messagebox

class Window:
    cnn = ConnectDB(host="localhost", user="root", password="",
database="cars db")

    def __init__(self, root):
        self.root = root
        self.settings()
        self.create_widgets()

    def settings(self):
        self.root.title("CRUD PYTHON MYSQL - BMWCars")
        self.root.resizable(0, 0)
        widthScreen = self.root.winfo_screenwidth()
        heightScreen = self.root.winfo_screenheight()
        widthWindow = 1200
        heightWindow = 600
        pwidth = int(widthScreen / 2 - widthWindow / 2)
        pheight = int(heightScreen / 2 - heightWindow / 2)
        self.root.geometry(f"{widthWindow}x{heightWindow}+{pwidth}+{pheight -
30}")

    def create_widgets(self):
        frame1 = tk.Frame(self.root, width=200, height=600, bg="#f7f5f0")
        frame1.place(x=0, y=0)

        self.buttonInit = tk.Button(frame1, text="Show All",
command=self.fnInit, width=24, height=2, background="#eba607",
foreground="white")
        self.buttonInit.place(x=10, y=20)

        self.buttonNew = tk.Button(frame1, text="Add Record",
command=self.InsertData, width=24, height=2, background="#eba607",
foreground="white")
        self.buttonNew.place(x=10, y=100)

        self.buttonUpdate = tk.Button(frame1, text="Update",
command=self.UpdateData, width=24, height=2, background="#eba607",
foreground="white")
        self.buttonUpdate.place(x=10, y=150)

        self.buttonDelete = tk.Button(frame1, text="Delete",
command=self.DeleteData, width=24, height=2, background="#eba607",
foreground="white")
        self.buttonDelete.place(x=10, y=200)
        self.buttonSearch = tk.Button(frame1, text="Search",
command=self.SearchData, width=24, height=2, background="#eba607",
foreground="white")
        self.buttonSearch.place(x=10, y=250)

        self.buttonReload = tk.Button(frame1, text="Reload",
command=self.fnInit, width=24, height=2, background="#eba607",
foreground="white")
        self.buttonReload.place(x=10, y=300)

        self.buttonTotal = tk.Button(frame1, text="Total Cars",
command=self.total_cars, width=24, height=2, background="#eba607",
foreground="white")
        self.buttonTotal.place(x=10, y=350)

        self.buttonAuto = tk.Button(frame1, text="Automatic Cars",
command=self.total_automatic_cars, width=24, height=2, background="#eba607",
foreground="white")
        self.buttonAuto.place(x=10, y=400)

        self.frame2 = tk.Frame(self.root, width=300, height=600,
bg="#CCCCCC")

        lbl1 = tk.Label(self.frame2, text="ID", background="#CCCCCC")
        lbl1.place(x=10, y=15)
        self.entry1 = tk.Entry(self.frame2, width=30,
font=font.Font(size=12))
        self.entry1.place(x=10, y=40)

        lbl2 = tk.Label(self.frame2, text="Model:", background="#CCCCCC")
        lbl2.place(x=10, y=80)
        self.entry2 = tk.Entry(self.frame2, width=30,
font=font.Font(size=12))
        self.entry2.place(x=10, y=105)

        lbl3 = tk.Label(self.frame2, text="Year Make:", background="#CCCCCC")
        lbl3.place(x=10, y=145)
        self.entry3 = tk.Entry(self.frame2, width=30,
font=font.Font(size=12))
        self.entry3.place(x=10, y=170)

        lbl4 = tk.Label(self.frame2, text="Color:", background="#CCCCCC")
        lbl4.place(x=10, y=210)
        self.entry4 = tk.Entry(self.frame2, width=30,
font=font.Font(size=12))
        self.entry4.place(x=10, y=235)

        lbl5 = tk.Label(self.frame2, text="Engine Capacity:",
background="#CCCCCC")
        lbl5.place(x=10, y=275)
        self.entry5 = tk.Entry(self.frame2, width=30,
font=font.Font(size=12))
        self.entry5.place(x=10, y=300)

        lbl6 = tk.Label(self.frame2, text="Engne Motor:",
background="#CCCCCC")
```

```
        lbl6.place(x=10, y=340)
        self.entry6 = tk.Entry(self.frame2, width=30,
font=font.Font(size=12))
        self.entry6.place(x=10, y=365)

        lbl7 = tk.Label(self.frame2, text="Engine Type:",
background="#CCCCCC")
        lbl7.place(x=10, y=405)
        self.entry7 = tk.Entry(self.frame2, width=30,
font=font.Font(size=12))
        self.entry7.place(x=10, y=430)

        lbl8 = tk.Label(self.frame2, text="Transmission Type:",
background="#CCCCCC")
        lbl8.place(x=10, y=470)
        self.entry8 = tk.Entry(self.frame2, width=30,
font=font.Font(size=12))
        self.entry8.place(x=10, y=495)

        lbl9 = tk.Label(self.frame2, text="Price", background="#CCCCCC")
        lbl9.place(x=10, y=535)
        self.entry9 = tk.Entry(self.frame2, width=30,
font=font.Font(size=12))
        self.entry9.place(x=10, y=560)

        self.buttonSave = tk.Button(frame1, text="Save", command=self.save,
width=24, height=2, background="#006400", foreground="black")
        self.buttonCancel = tk.Button(frame1, text="Cancel",
command=self.cancel, width=24, height=2, background="#8B0000",
foreground="black")

        style = ttk.Style()
        style.configure("Custom.Treeview", background="whitesmoke",
foreground="black")

        self.grid = ttk.Treeview(self.root, columns=("col1", "col2", "col3",
"col4", "col5", "col6", "col7", "col8"), style="Custom.Treeview")
        self.grid.column("#0", width=50, anchor=tk.CENTER)
        for i in range(1, 9):
            self.grid.column(f"col{i}", width=70, anchor=tk.CENTER)

        self.grid.heading("#0", text="ID")
        headings = ["Model", "Year", "Color", "EngineCapacity",
"EnginePower", "EngineType", "Transmission", "Price"]
        for i, heading in enumerate(headings):
            self.grid.heading(f"col{i+1}", text=heading)

        self.grid.place(x=200, y=0, width=999, height=599)

    def fnInit(self):
        self.grid.delete(*self.grid.get_children())
        self.cnn.connect()
        data = self.cnn.execute_select("car")
        for row in data:
            self.grid.insert("", tk.END, text=row[0], values=row[1:])
        self.cnn.disconnect()
        self.buttonInit.config(state="disabled")
    def cancel(self):
        self.buttonSave.place_forget()
        self.buttonCancel.place_forget()
        self.grid.place_forget()
        self.grid.place(x=200, y=0, width=999, height=599)
        self.entry1.config(state="normal")
        for e in
[self.entry1,self.entry2,self.entry3,self.entry4,self.entry5,self.entry6,self
.entry7,self.entry8,self.entry9]:
            e.delete("0", "end")
        for b in
[self.buttonUpdate,self.buttonNew,self.buttonDelete,self.buttonSearch,self.bu
ttonReload]:
            b.config(state="normal")

    def save(self):
        try:
            txtid = int(self.entry1.get())
            txtmodel = self.entry2.get()
            txtyear = self.entry3.get()
            txtcolor = self.entry4.get()
            txtcapacity = int(self.entry5.get())
            txtpower = int(self.entry6.get())
            txttype = self.entry7.get()
            txttrans = self.entry8.get()
            txtprice = float(self.entry9.get())
        except ValueError:
            messagebox.showerror("Error", "All fields must be filled
correctly")
            return
        self.entry1.delete("0", "end")
        self.entry2.delete("0", "end")
        self.entry3.delete("0", "end")
        self.entry4.delete("0", "end")
        self.entry5.delete("0", "end")
        self.entry6.delete("0", "end")
        self.entry7.delete("0", "end")
        self.entry8.delete("0", "end")
        self.entry9.delete("0", "end")

        self.cnn.connect()
        if self.entry1.cget("state") == "normal":
            self.cnn.execute_insert("car", txtid, txtmodel, txtyear,
txtcolor, txtcapacity, txtpower, txttype, txttrans, txtprice)
        else:
            self.cnn.execute_update("car", txtid, txtmodel, txtyear,
txtcolor, txtcapacity, txtpower, txttype, txttrans, txtprice)
        self.cnn.disconnect()
        self.grid.delete(*self.grid.get_children())
        self.fnInit()
        for b in
[self.buttonUpdate,self.buttonNew,self.buttonDelete,self.buttonSearch,self.bu
ttonReload]:
            b.config(state="normal")
        self.buttonSave.place_forget()
        self.buttonCancel.place_forget()
        self.grid.place_forget()
        self.grid.place(x=200, y=0, width=999, height=599)

    def InsertData(self):
        self.grid.place(x=500, y=0, width=699, height=599)
        self.frame2.place(x=200, y=0)
        self.buttonSave.place(x=10, y=495)
        self.buttonCancel.place(x=10, y=545)
        for b in
[self.buttonUpdate,self.buttonNew,self.buttonDelete,self.buttonSearch,self.bu
ttonReload]:
            b.config(state="disabled")

    def UpdateData(self):
        selection = self.grid.selection()
        if selection:
            self.grid.place(x=500, y=0, width=699, height=599)
            self.frame2.place(x=200, y=0)
            self.buttonSave.place(x=10, y=495)
            self.buttonCancel.place(x=10, y=545)
            for b in
[self.buttonUpdate,self.buttonNew,self.buttonDelete,self.buttonSearch,self.bu
ttonReload]:
                b.config(state="disabled")
            id_selectioned = self.grid.item(selection)['text']
            values = self.grid.item(selection)['values']
            for i, e in
enumerate([self.entry2,self.entry3,self.entry4,self.entry5,self.entry6,self.e
ntry7,self.entry8,self.entry9]):
                e.insert(0, values[i])
            self.entry1.insert(0, id_selectioned)
            self.entry1.config(state="disabled")
        else:
            messagebox.showerror("Error", "You must select a data")

    def DeleteData(self):
        selection = self.grid.selection()
        if selection:
            id_selectioned = self.grid.item(selection)['text']
            self.cnn.connect()
            self.cnn.execute_delete("car", id_selectioned)
            self.cnn.disconnect()
            self.grid.delete(*self.grid.get_children())
            self.fnInit()

    def SearchData(self):
        new_window = tk.Toplevel(self.root)
        new_window.title("Search")
        new_window.resizable(0, 0)
        widthScreen = self.root.winfo_screenwidth()
        heightScreen = self.root.winfo_screenheight()
        widthWindow = 700
        heightWindow = 50
        pwidth = int(widthScreen / 2 - widthWindow / 2)
        pheight = int(heightScreen / 2 - heightWindow / 2)
        new_window.geometry(f"{widthWindow}x{heightWindow}+{pwidth}+{pheight
- 60}")
```

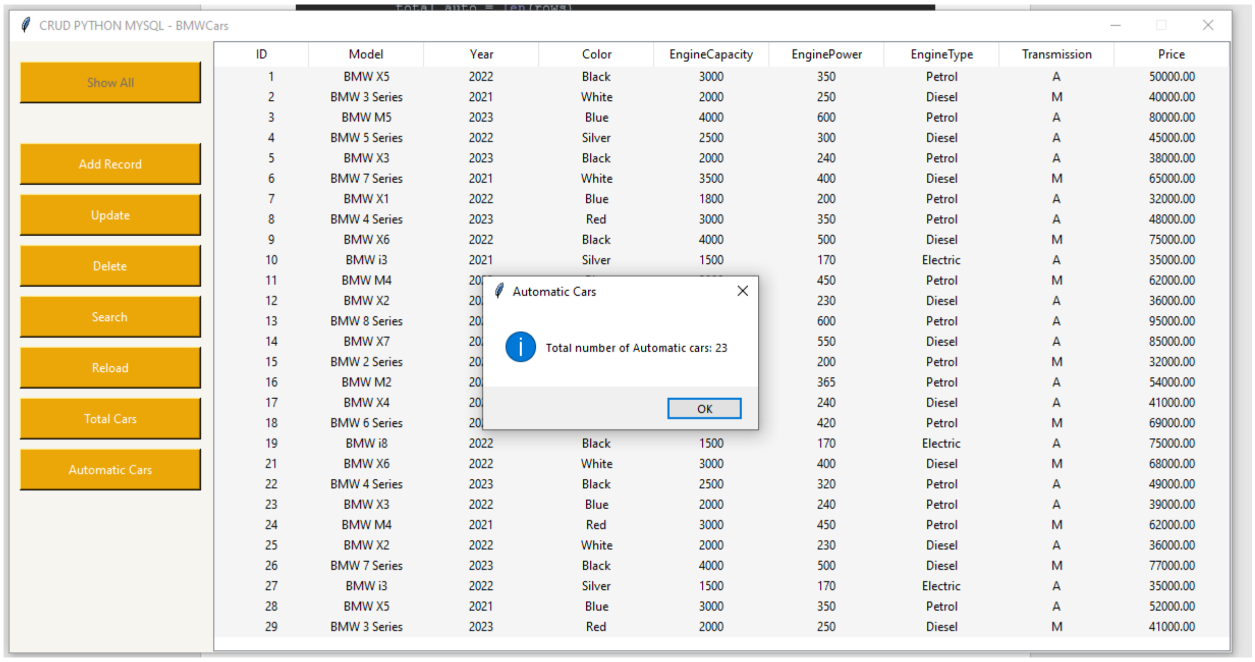
```
        def show_search_data(i, search_text):
            found_items = []
            all_items_values = []
            self.cnn.connect()
            data = self.cnn.execute_select("car")
            self.cnn.disconnect()
            for row in data:
                all_items_values.append(list(row))
            for j in range(len(all_items_values)):
                if search_text.lower() ==
str(all_items_values[j][i]).lower():
                    found_items.append(all_items_values[j])
            self.grid.delete(*self.grid.get_children())
            for data in found_items:
                self.grid.insert('', tk.END, text=data[0], values=data[1:])
            new_window.destroy()

        def get_selected_option(search_text):
            selected_option = radio_var.get()
            if selected_option == "option1":
                show_search_data(0, search_text)
            elif selected_option == "option2":
                show_search_data(1, search_text)
            elif selected_option == "option3":
                show_search_data(2, search_text)
            elif selected_option == "option4":
                show_search_data(8, search_text)
            else:
                show_search_data(0, search_text)

        style = ttk.Style()
        style.configure("TRadiobutton", font=("Helvetica", 12))
        style.configure("NoFocus.TRadiobutton",
highlightbackground=new_window.cget("background"))
        radio_var = tk.StringVar()
        radio_button1 = ttk.Radiobutton(new_window, text="Id",
variable=radio_var, value="option1", style="NoFocus.TRadiobutton")
        radio_button1.place(x=30, y=12)
        radio_button2 = ttk.Radiobutton(new_window, text="Model",
variable=radio_var, value="option2", style="NoFocus.TRadiobutton")
        radio_button2.place(x=80, y=12)
        radio_button3 = ttk.Radiobutton(new_window, text="Year",
variable=radio_var, value="option3", style="NoFocus.TRadiobutton")
        radio_button3.place(x=160, y=12)
        radio_button4 = ttk.Radiobutton(new_window, text="Price",
variable=radio_var, value="option4")
        radio_button4.place(x=240, y=12)
        entry_search = tk.Entry(new_window, width=30,
font=font.Font(size=10))
        entry_search.place(x=320, y=14)
        button_get_selected = ttk.Button(new_window, text="Get Selected
Option", command=lambda: get_selected_option(entry_search.get()))
        button_get_selected.place(x=550, y=11)

    def total_cars(self):
        self.cnn.connect()
        data = self.cnn.execute_select("car")
        self.cnn.disconnect()
        total = len(data)
        messagebox.showinfo("Total Cars", f"Total number of cars: {total}")

    def total_automatic_cars(self):
        self.cnn.connect()
        cursor = self.cnn.connectDB.cursor()
        try:
            cursor.execute("SELECT * FROM car WHERE transmission='A'")
            rows = cursor.fetchall()
            total_auto = len(rows)
            messagebox.showinfo("Automatic Cars", f"Total number of Automatic
cars: {total_auto}")
        except mysql.connector.Error as error:
            messagebox.showerror("Error", f"Error fetching data: {error}")
        finally:
            self.cnn.disconnect()
```

Total number of and Automatic Cars:



Total number of cars: 34

ID	Model	Year	Color	EngineCapacity	EnginePower	EngineType	Transmission	Price
1	BMW X5	2022	Black	3000	350	Petrol	A	50000.00
2	BMW 3 Series	2021	White	2000	250	Diesel	M	40000.00
3	BMW M5	2023	Blue	4000	600	Petrol	A	80000.00
4	BMW 5 Series	2022	Silver	2500	300	Diesel	A	45000.00
5	BMW X3	2023	Black	2000	240	Petrol	A	38000.00
6	BMW 7 Series	2021	White	3500	400	Diesel	M	65000.00
7	BMW X1	2022	Blue	1800	200	Petrol	A	32000.00
8	BMW 4 Series	2023	Red	3000	350	Petrol	A	48000.00
9	BMW X6	2022	Black	4000	500	Diesel	M	75000.00
10	BMW i3	2021	Silver	1500	170	Electric	A	35000.00
11	BMW M4	2023			450	Petrol	M	62000.00
12	BMW X2	2022			230	Diesel	A	36000.00
13	BMW 8 Series	2023			600	Petrol	A	95000.00
14	BMW X7	2022			550	Diesel	A	85000.00
15	BMW 2 Series	2023			200	Petrol	M	32000.00
16	BMW M2	2021			365	Petrol	A	54000.00
17	BMW X4	2022			240	Diesel	A	41000.00
18	BMW 6 Series	2023			420	Petrol	M	69000.00
19	BMW i8	2022	Black	1500	170	Electric	A	75000.00
21	BMW X6	2022	White	3000	400	Diesel	M	68000.00
22	BMW 4 Series	2023	Black	2500	320	Petrol	A	49000.00
23	BMW X3	2022	Blue	2000	240	Petrol	A	39000.00
24	BMW M4	2021	Red	3000	450	Petrol	M	62000.00
25	BMW X2	2022	White	2000	230	Diesel	A	36000.00
26	BMW 7 Series	2023	Black	4000	500	Diesel	M	77000.00
27	BMW i3	2022	Silver	1500	170	Electric	A	35000.00
28	BMW X5	2021	Blue	3000	350	Petrol	A	52000.00
29	BMW 3 Series	2023	Red	2000	250	Diesel	M	41000.00



```
total_auto = len(rows)
```

ID	Model	Year	Color	EngineCapacity	EnginePower	EngineType	Transmission	Price
1	BMW X5	2022	Black	3000	350	Petrol	A	50000.00
2	BMW 3 Series	2021	White	2000	250	Diesel	M	40000.00
3	BMW M5	2023	Blue	4000	600	Petrol	A	80000.00
4	BMW 5 Series	2022	Silver	2500	300	Diesel	A	45000.00
5	BMW X3	2023	Black	2000	240	Petrol	A	38000.00
6	BMW 7 Series	2021	White	3500	400	Diesel	M	65000.00
7	BMW X1	2022	Blue	1800	200	Petrol	A	32000.00
8	BMW 4 Series	2023	Red	3000	350	Petrol	A	48000.00
9	BMW X6	2022	Black	4000	500	Diesel	M	75000.00
10	BMW i3	2021	Silver	1500	170	Electric	A	35000.00
11	BMW M4	20			450	Petrol	M	62000.00
12	BMW X2	20			230	Diesel	A	36000.00
13	BMW 8 Series	20			600	Petrol	A	95000.00
14	BMW X7	20			550	Diesel	A	85000.00
15	BMW 2 Series	20			200	Petrol	M	32000.00
16	BMW M2	20			365	Petrol	A	54000.00
17	BMW X4	20			240	Diesel	A	41000.00
18	BMW 6 Series	20			420	Petrol	M	69000.00
19	BMW i8	2022	Black	1500	170	Electric	A	75000.00
21	BMW X6	2022	White	3000	400	Diesel	M	68000.00
22	BMW 4 Series	2023	Black	2500	320	Petrol	A	49000.00
23	BMW X3	2022	Blue	2000	240	Petrol	A	39000.00
24	BMW M4	2021	Red	3000	450	Petrol	M	62000.00
25	BMW X2	2022	White	2000	230	Diesel	A	36000.00
26	BMW 7 Series	2023	Black	4000	500	Diesel	M	77000.00
27	BMW i3	2022	Silver	1500	170	Electric	A	35000.00
28	BMW X5	2021	Blue	3000	350	Petrol	A	52000.00
29	BMW 3 Series	2023	Red	2000	250	Diesel	M	41000.00

Total number of Automatic cars: 23