

**TUGAS PRAKTIKUM
SISTEM BASIS DATA
MODUL 12. APLIKASI DENGAN DATABASE**

Nama : Hadid Aldio Indratama
NIM : L200160055
Kelas : A

Service Mobil

Entity

- mobil
- jenisLayanan
- transaksi

Attributes

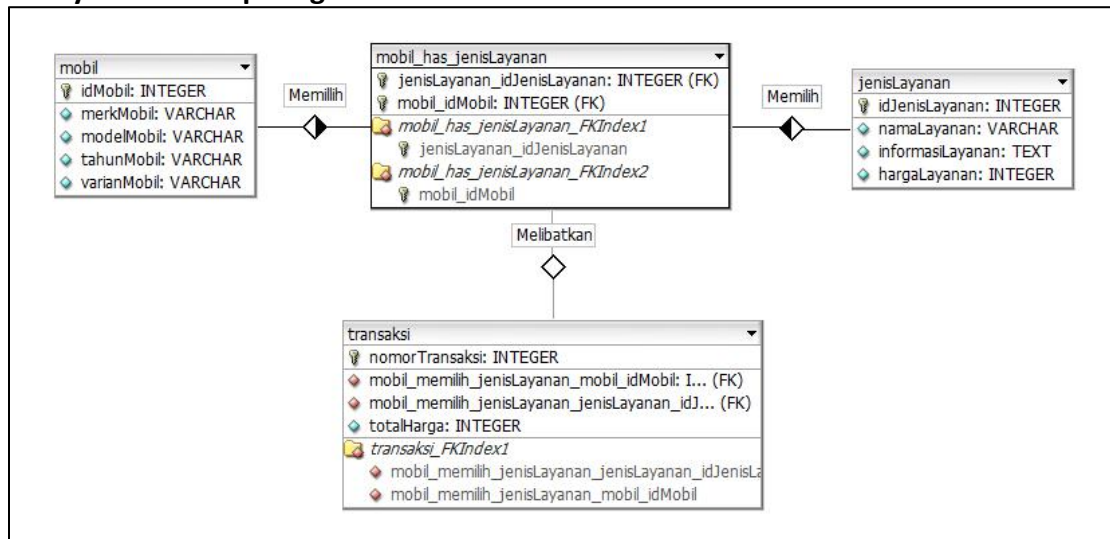
- mobil
 - idMobil INTEGER PK
 - merkMobil VARCHAR(25)
 - modelMobil VARCHAR(25)
 - tahunMobil VARCHAR(25)
 - varianMobil VARCHAR(25)
- jenisLayanan
 - idJenisLayanan INTEGER PK
 - namaLayanan VARCHAR(25)
 - informasiLayanan VARCHAR(100)
 - hargaLayanan INTEGER
- transaksi
 - nomorTransaksi INTEGER PK
 - tanggalTransaksi DATE

Relationship

- mobil memilih jenisLayanan
 - Tabel utama : mobil
 - Tabel kedua : jenisLayanan
 - Relationship : Many to Many (m:n)
 - Attribute penghubung : idMobil, idJenisLayanan (FK idMobil, idJenisLayanan di mobil_has_jenisLayanan)
- transaksi melibatkan mobil_has_jenisLayanan
 - Tabel utama : transaksi
 - Tabel kedua : mobil_has_jenisLayanan
 - Relationship : One to Many (1:1)

- Attribute penghubung : idMobil, idJenisLayanan (FK idMobil, idJenisLayanan di transaksi)

Entity Relationship Diagram



Normalisasi

Implementasi

Database:

Data Definition Language(DDL)

Server: 127.0.0.1 > Database: servismobil

Structure SQL Search Query Export Import Operations Privileges Routines Events More

Filters

Containing the word:

Table	Action	Rows	Type	Collation	Size	Overhead
<input type="checkbox"/> jenisLayanan		0	InnoDB	utf8mb4_general_ci	16.0 K1B	-
<input type="checkbox"/> mobil		0	InnoDB	utf8mb4_general_ci	32.0 K1B	-
<input type="checkbox"/> transaksi		0	InnoDB	utf8mb4_general_ci	32.0 K1B	-
3 tables	Sum	0	InnoDB	utf8mb4_general_ci	80.0 K1B	0 B

↑ ☐ Check all With selected: ▾

Server: 127.0.0.1 > Database: servismobil > Table: mobil

Browse Structure SQL Search Insert Export Import Privileges Operations Tracking Triggers

Table structure Relation view

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/> 1	idMobil	int(11)			No	None			
<input type="checkbox"/> 2	merkMobil	varchar(25)	utf8mb4_general_ci		No	None			
<input type="checkbox"/> 3	modelMobil	varchar(25)	utf8mb4_general_ci		No	None			
<input type="checkbox"/> 4	tahunMobil	varchar(25)	utf8mb4_general_ci		No	None			
<input type="checkbox"/> 5	varianMobil	varchar(25)	utf8mb4_general_ci		No	None			

↑ ☐ Check all With selected:

Server: 127.0.0.1 » Database: servismobil » Table: jenislayanan

Table structure Relation view

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/> 1	idJenisLayanan	int(11)			No	None			Change Drop More
<input type="checkbox"/> 2	namaLayanan	varchar(25)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/> 3	informasiLayanan	text	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/> 4	hargaLayanan	int(11)			No	None			Change Drop More

☐ Check all
 With selected:
 Browse Change Drop Primary Unique Index Fulltext Add to central columns
 Remove from central columns

Server: 127.0.0.1 » Database: servismobil » Table: transaksi

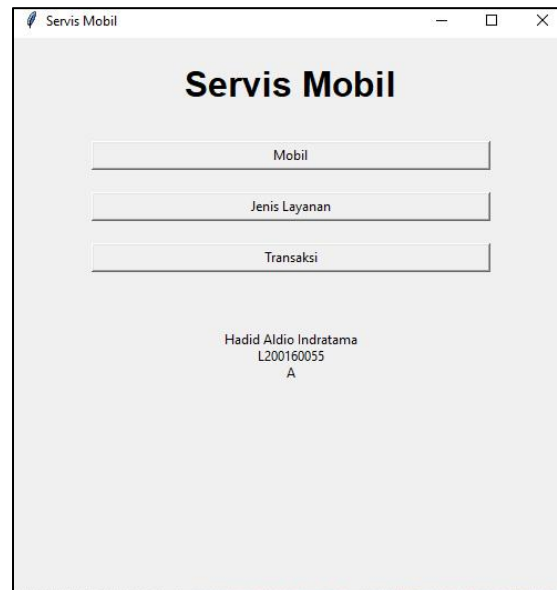
Table structure Relation view

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/> 1	nomorTransaksi	int(11)			No	None			Change Drop More
<input type="checkbox"/> 2	tanggalTransaksi	varchar(25)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/> 3	idMobilFK	int(11)			No	None			Change Drop More
<input type="checkbox"/> 4	idJenisLayananFK	int(11)			No	None			Change Drop More
<input type="checkbox"/> 5	hargaLayanan	int(11)			No	None			Change Drop More

☐ Check all
 With selected:
 Browse Change Drop Primary Unique Index Fulltext Add to central columns
 Remove from central columns

Data Manipulation Language(DML)

Python:
- Halaman Utama



```
File Edit Selection View Go Run Terminal Help
utama.py x mobil.py jenisLayanan.py transaksi.py
C: > Users > Hadid Aldio > Desktop > T-PASD12 > Servis Mobil > utama.py > ...
1 from tkinter import *
2
3 root=Tk()
4 root.title("Servis Mobil")
5 root.geometry("500x500")
6
7 def mobil():
8     import mobil
9
10 def jenisLayanan():
11     import jenisLayanan
12
13 def transaksi():
14     import transaksi
15
16 l1=Label(root, text="Servis Mobil", font=(None,24,"bold"))
17 l1.pack(pady=20)
18
19 b1=Button(root, text="Mobil", command=mobil, width=50)
20 b1.pack(pady=10)
21
22 b2=Button(root, text="Jenis Layanan", command=jenisLayanan, width=50)
23 b2.pack(pady=10)
24
25 b3=Button(root, text="Transaksi", command=transaksi, width=50)
26 b3.pack(pady=10)
27
28 l1=Label(root, text="Hadid Aldio Indratama\nL200160055\nA")
29 l1.pack(pady=40)
30
31 root.mainloop()
32
```

- Halaman Mobil

The screenshot shows a Tkinter application window titled "Servis Mobil/ Mobil". The window is divided into two main sections: "Tambah" (Add) and "Perbarui" (Update). The "Tambah" section has input fields for ID, Merk, Model, Tahun, and Versi, followed by "Tambah", "Lihat", and "Hapus" buttons. The "Perbarui" section has input fields for ID and Merk, followed by a "Simpan" button. A "Pilih ID" label is at the bottom left.

```
utama.py mobil.py jenisLayanan.py transaksi.py
C: > Users > Hadid Aldio I > Desktop > T-PASD12 > Servis Mobil > mobil.py > ...
1 from tkinter import *
2
3 import mysql.connector
4 mydb = mysql.connector.connect(
5     host="localhost",
6     user="root",
7     password="",
8     database="servismobil"
9 )
10
11 root=Tk()
12 root.title("Servis Mobil/ Mobil")
13 root.geometry("500x500")
```

```
97 #Tambah
98 l0=Label(root, text="Tambah", font=(None,12,"bold"))
99 l0.grid(row=0, column=1, pady=10)
100
101 l1=Label(root, text="ID")
102 l1.grid(row=1, column=0, padx=10, pady=5, sticky="w")
103 e1=Entry(root, width=25)
104 e1.grid(row=1, column=1)
105
106 l2=Label(root, text="Merk")
107 l2.grid(row=2, column=0, padx=10, pady=5, sticky="w")
108 e2=Entry(root, width=25)
109 e2.grid(row=2, column=1)
110
111 l3=Label(root, text="Model")
112 l3.grid(row=3, column=0, padx=10, pady=5, sticky="w")
113 e3=Entry(root, width=25)
114 e3.grid(row=3, column=1)
115
116 l4=Label(root, text="Tahun")
117 l4.grid(row=4, column=0, padx=10, pady=5, sticky="w")
118 e4=Entry(root, width=25)
119 e4.grid(row=4, column=1)
120
121 l5=Label(root, text="Versi")
122 l5.grid(row=5, column=0, padx=10, pady=5, sticky="w")
123 e5=Entry(root, width=25)
124 e5.grid(row=5, column=1)
125
126 b1=Button(root, text="Tambah", command=tambah, width=21)
127 b1.grid(row=6, column=1, colspan=1, padx=10, pady=5)
```

```
132 l6=Label(root, text="Pilih ID")
133 l6.grid(row=8, column=0, padx=10, pady=5)
134 e6=Entry(root, width=25)
135 e6.grid(row=8, column=1)
136
137 b3=Button(root, text="Perbarui", command=perbarui, width=21)
138 b3.grid(row=9, column=1, colspan=1, padx=10, pady=5)
139
140 b4=Button(root, text="Hapus", command=hapus, width=21)
141 b4.grid(row=10, column=1, colspan=1, padx=10, pady=5)
```

```

143 #Perbarui
144 lp8=Label(root, text="Perbarui", font=(None,12,"bold"))
145 lp8.grid(row=0, column=4)
146
147 ep1=Entry(root, width=25)
148 ep1.grid(row=1, column=4, padx=20)
149
150 ep2=Entry(root, width=25)
151 ep2.grid(row=2, column=4)
152
153 ep3=Entry(root, width=25)
154 ep3.grid(row=3, column=4)
155
156 ep4=Entry(root, width=25)
157 ep4.grid(row=4, column=4)
158
159 ep5=Entry(root, width=25)
160 ep5.grid(row=5, column=4)
161
162 bp1=Button(root, text="Simpan", command=simpan, width=21)
163 bp1.grid(row=6, column=4)
164
165 root.mainloop()

```

- Halaman Mobil/Fitur: Tambah

The screenshot shows a Tkinter window titled "Servis Mobil/ Mobil". The window contains two main sections: "Tambah" (Add) and "Perbarui" (Update). The "Tambah" section has five input fields for ID, Merk, Model, Tahun, and Versi, followed by buttons for "Tambah", "Lihat", "Pilih ID", "Perbarui", and "Hapus". The "Perbarui" section has five input fields for ID, Merk, Model, Tahun, and Versi, followed by a "Simpan" button.

```

15 def tambah():
16     id=e1.get()
17     merk=e2.get()
18     model=e3.get()
19     tahun=e4.get()
20     varian=e5.get()
21
22     mycursor = mydb.cursor()
23
24     sql = "INSERT INTO mobil (idMobil, merkMobil, modelMobil, tahunMobil, varianMobil) VALUES (%s,%s,%s,%s,%s)"
25     val = (id, merk, model, tahun, varian)
26
27     mycursor.execute(sql, val)
28
29     mydb.commit()
30
31     e1.delete(0,END)
32     e2.delete(0,END)
33     e3.delete(0,END)
34     e4.delete(0,END)
35     e5.delete(0,END)

```

- Halaman Mobil/Fitur: Lihat

ID	Merk	Tahun	Model	Versi
1	Toyota	Kijang	1982	Manual

```

37 def lihat():
38     mycursor = mydb.cursor()
39
40     mycursor.execute("SELECT * FROM mobil")
41
42     myresult = mycursor.fetchall()
43
44     result=""
45     for myresult in myresult:
46         result +=str(myresult[0])+"\t"+str(myresult[1])+"\t"+str(myresult[2])+"\t"+str(myresult[3])+"\t"+str(myresult[4])+"\n"
47
48     ll=Label(root, text="ID"+'\t'+Merk+"\t'+Tahun+"\t'+Model+"\t'+Versi+"\n"+result,justify=LEFT)
49     ll.grid(row=11, column=0, columnspan=4, padx=10)
50
51     mydb.commit()

```

- - Halaman Mobil/Fitur: Perbarui

ID	Merk	Tahun	Model	Versi
1	Toyota	Corolla	1996	Manual

```

53 def perbarui():
54     pilihID=e6.get()
55
56     mycursor = mydb.cursor()
57     mycursor.execute("SELECT * FROM mobil WHERE idMobil='"+pilihID")
58     myresult = mycursor.fetchall()
59
60     for myresult in myresult:
61         ep1.insert(0, myresult[0])
62         ep2.insert(0, myresult[1])
63         ep3.insert(0, myresult[2])
64         ep4.insert(0, myresult[3])
65         ep5.insert(0, myresult[4])
66     mydb.commit()
67
68     e6.delete(0,END)

```

```

70 def simpan():
71     id=ep1.get()
72     merkBaru=ep2.get()
73     modelBaru=ep3.get()
74     tahunBaru=ep4.get()
75     varianBaru=ep5.get()
76
77     mycursor = mydb.cursor()
78     sql = "UPDATE mobil SET merkMobil=%s, modelMobil=%s, tahunMobil=%s, varianMobil=%s WHERE idMobil = %s"
79     val = (merkBaru, modelBaru, tahunBaru, varianBaru, id)
80     mycursor.execute(sql, val)
81     mydb.commit()
82
83     ep1.delete(0,END)
84     ep2.delete(0,END)
85     ep3.delete(0,END)
86     ep4.delete(0,END)
87     ep5.delete(0,END)

```

- Halaman Mobil/ Fitur: Hapus

Servis Mobil/ Mobil

Tambah

ID

Merk

Model

Tahun

Versi

Tambah

Lihat

Pilih ID

Perbarui

Hapus

Perbarui

Simpan

ID	Merk	Tahun	Model	Versi
1	Toyota	Corolla	1996	Manual

ID	Merk	Tahun	Model	Versi
----	------	-------	-------	-------

```

89 def hapus():
90     pilihID=e6.get()
91
92     mycursor = mydb.cursor()
93     sql = "DELETE FROM mobil WHERE idMobil='"+pilihID
94     mycursor.execute(sql)
95     mydb.commit()
96
97     e6.delete(0,END)

```


- Halaman Jenis Layanan

The screenshot shows a Tkinter window titled "Servis Mobil/ Jenis Layanan". It contains two columns of form elements. The left column, under the heading "Tambah", includes labels and input fields for "ID", "Nama", "Informasi", and "Harga". Below these are three buttons: "Tambah", "Lihat", and "Hapus". The right column, under the heading "Perbarui", includes labels and input fields for "ID" and "Nama", followed by a "Simpan" button. At the bottom left, there is a "Pilih ID" label and a corresponding input field.

```
utama.py mobil.py jenisLayanan.py X transaksi.py
C > Users > Hadid Aldio I > Desktop > T-PASD12 > Servis Mobil > jenisLayanan.py
1  from tkinter import *
2
3  import mysql.connector
4  mydb = mysql.connector.connect(
5      host="localhost",
6      user="root",
7      password="",
8      database="servismobil"
9  )
10
11 root=Tk()
12 root.title("Servis Mobil/ Jenis Layanan")
13 root.geometry("500x500")
```

```
87 #Tambah
88 l0=Label(root, text="Tambah", font=(None,12,"bold"))
89 l0.grid(row=0, column=1, pady=10)
90
91 l1=Label(root, text="ID")
92 l1.grid(row=1, column=0, padx=10, pady=5, sticky="w")
93 e1=Entry(root, width=25)
94 e1.grid(row=1, column=1)
95
96 l2=Label(root, text="Nama")
97 l2.grid(row=2, column=0, padx=10, pady=5, sticky="w")
98 e2=Entry(root, width=25)
99 e2.grid(row=2, column=1)
100
101 l3=Label(root, text="Informasi")
102 l3.grid(row=3, column=0, padx=10, pady=5, sticky="w")
103 e3=Text(root, width=19, height=5)
104 e3.grid(row=3, column=1)
105
106 l4=Label(root, text="Harga")
107 l4.grid(row=4, column=0, padx=10, pady=5, sticky="w")
108 e4=Entry(root, width=25)
109 e4.grid(row=4, column=1)
110
111 b1=Button(root, text="Tambah", command=tambah, width=21)
112 b1.grid(row=5, column=1, colspan=1, padx=10, pady=5)
113
114 b2=Button(root, text="Lihat", command=lihat, width=21)
115 b2.grid(row=6, column=1, colspan=1, padx=10, pady=5)
116
117 l5=Label(root, text="Pilih ID")
118 l5.grid(row=7, column=0, padx=10, pady=5)
119 e5=Entry(root, width=25)
```

```

122 b3=Button(root, text="Perbarui", command=perbarui, width=21)
123 b3.grid(row=8, column=1, columnspan=1, padx=10, pady=5)
124
125 b4=Button(root, text="Hapus", command=hapus, width=21)
126 b4.grid(row=9, column=1, columnspan=1, padx=10, pady=5)
127
128 #Perbarui
129 lp8=Label(root, text="Perbarui", font=(None,12,"bold"))
130 lp8.grid(row=8, column=4)
131
132 ep1=Entry(root, width=25)
133 ep1.grid(row=1, column=4, padx=20)
134
135 ep2=Entry(root, width=25)
136 ep2.grid(row=2, column=4)
137
138 ep3=Text(root, width=19, height=5)
139 ep3.grid(row=3, column=4)
140
141 ep4=Entry(root, width=25)
142 ep4.grid(row=4, column=4)
143
144 bp1=Button(root, text="Simpan", command=simpan, width=21)
145 bp1.grid(row=5, column=4)
146
147 root.mainloop()

```

- Halaman Jenis Layanan/Fitur: Tambah

The screenshot shows a Tkinter window titled "Servis Mobil/ Jenis Layanan". It contains two main sections: "Tambah" (Add) and "Perbarui" (Update). The "Tambah" section has input fields for ID (1), Nama (Dasar 1), Informasi (Ganti Oli), and Harga (500000), followed by "Tambah", "Lihat", and "Pilih ID" buttons. The "Perbarui" section has input fields for ID, Nama, Informasi, and Harga, followed by a "Simpan" button. Below the "Pilih ID" button are "Perbarui" and "Hapus" buttons.

```

15 def tambah():
16     id=e1.get()
17     nama=e2.get()
18     informasi=e3.get()
19     harga=e4.get()
20
21     mycursor = mydb.cursor()
22     sql = "INSERT INTO jenisLayanan (idJenisLayanan, namaLayanan, informasiLayanan, hargaLayanan) VALUES (%s,%s,%s,%s)"
23     val = (id, nama, informasi, harga)
24     mycursor.execute(sql, val)
25     mydb.commit()
26
27     e1.delete(0,END)
28     e2.delete(0,END)
29     e3.delete(0,END)
30     e4.delete(0,END)

```

- Halaman Jenis Layanan/Fitur: Lihat

Servis Mobil/ Jenis Layanan

Tambah

Perbarui

ID

Nama

Informasi

Harga

Tambah

Lihat

Pilih ID

Perbarui

Hapus

Simpan

ID	Nama	Informasi	Harga
1	Dasar 1	Ganti Oli	500000

```

32 def lihat():
33     mycursor = mydb.cursor()
34     mycursor.execute("SELECT * FROM jenisLayanan")
35     myresult = mycursor.fetchall()
36
37     result=""
38     for myresult in myresult:
39         result +=str(myresult[0])+"\t"+str(myresult[1])+"\t"+str(myresult[2])+"\t\t"+str(myresult[3])+"\n"
40
41     ll=Label(root, text="ID"+'\t'+ "Nama"+'\t'+ "Informasi"+'\t'+ "Harga"+'\n'+result,justify=LEFT)
42     ll.grid(row=10, column=0, columnspan=2, padx=10)
43
44     mydb.commit()

```

- Halaman Jenis Layanan/Fitur: Perbarui

Servis Mobil/ Jenis Layanan

Tambah

Perbarui

ID

Nama

Informasi

Harga

Tambah

Lihat

Pilih ID

Perbarui

Hapus

Simpan

ID	Nama	Informasi	Harga
1	Dasar 2	Ganti Kampas	750000

ID	Nama	Informasi	Harga
1	Dasar 2	Ganti Kampas	750000

```

46 def perbarui():
47     pilihID=e5.get()
48
49     mycursor = mydb.cursor()
50     mycursor.execute("SELECT * FROM jenisLayanan WHERE idJenisLayanan="+pilihID)
51     myresult = mycursor.fetchall()
52
53     for myresult in myresult:
54         ep1.insert(0, myresult[0])
55         ep2.insert(0, myresult[1])
56         ep3.insert(0, myresult[2])
57         ep4.insert(0, myresult[3])
58     mydb.commit()
59
60 def simpan():
61     id=ep1.get()
62     namaBaru=ep2.get()
63     informasiBaru=ep3.get()
64     hargaBaru=ep4.get()
65
66     mycursor = mydb.cursor()
67     sql = "UPDATE jenisLayanan SET namaLayanan=%s, informasiLayanan=%s, hargaLayanan=%s WHERE idJenisLayanan = %s"
68     val = (namaBaru, informasiBaru, hargaBaru, id)
69     mycursor.execute(sql, val)
70     mydb.commit()
71
72     ep1.delete(0,END)
73     ep2.delete(0,END)
74     ep3.delete(0,END)
75     ep4.delete(0,END)

```

- Halaman Jenis Layanan/Fitur: Hapus

Servis Mobil/ Jenis Layanan

Tambah

Perbarui

ID

Nama

Informasi

Harga

Tambah

Lihat

Pilih ID

1

Perbarui

Hapus

Simpan

ID	Nama	Informasi	Harga
1	Dasar 2	Ganti Kampas	750000

ID	Nama	Informasi	Harga
----	------	-----------	-------

```

77 def hapus():
78     pilihID=e5.get()
79
80     mycursor = mydb.cursor()
81     sql = "DELETE FROM jenisLayanan WHERE idJenisLayanan="+pilihID
82     mycursor.execute(sql)
83     mydb.commit()
84
85     e5.delete(0,END)

```

- Halaman Transaksi

The screenshot shows a window titled "Servis Mobil/ Transaksi". It contains two main sections: "Tambah" (Add) and "Perbarui" (Update). The "Tambah" section has five input fields: "Nomor", "Tanggal", "ID Mobil", "ID Layanan", and "Harga Layanan", each followed by a "Tambah" button. The "Perbarui" section has a "Simpan" button. Below these sections is a "Pilih ID" section with an input field and two buttons: "Perbarui" and "Hapus".

```

utama.py mobil.py jenisLayanan.py transaksi.py X
C: > Users > Hadid Aldio I > Desktop > T-PASD12 > Servis Mobil > transaksi.py
1 from tkinter import *
2
3 import mysql.connector
4 mydb = mysql.connector.connect(
5     host="localhost",
6     user="root",
7     password="",
8     database="servismobil"
9 )
10
11 root=Tk()
12 root.title("Servis Mobil/ Transaksi")
13 root.geometry("500x500")

```

```

94 #Tambah
95 l0=Label(root, text="Tambah", font=(None,12,"bold"))
96 l0.grid(row=0, column=0, pady=10)
97
98 l1=Label(root, text="Nomor")
99 l1.grid(row=1, column=0, padx=10, pady=5, sticky="w")
100 e1=Entry(root, width=25)
101 e1.grid(row=1, column=1)
102
103 l2=Label(root, text="Tanggal")
104 l2.grid(row=2, column=0, padx=10, pady=5, sticky="w")
105 e2=Entry(root, width=25)
106 e2.grid(row=2, column=1)
107
108 l3=Label(root, text="ID Mobil")
109 l3.grid(row=3, column=0, padx=10, pady=5, sticky="w")
110 e3=Entry(root, width=25)
111 e3.grid(row=3, column=1)
112
113 l4=Label(root, text="ID Layanan")
114 l4.grid(row=4, column=0, padx=10, pady=5, sticky="w")
115 e4=Entry(root, width=25)
116 e4.grid(row=4, column=1)
117
118 l5=Label(root, text="Harga Layanan")
119 l5.grid(row=5, column=0, padx=10, pady=5, sticky="w")
120 e5=Entry(root, width=25)
121 e5.grid(row=5, column=1)
122
123 b1=Button(root, text="Tambah", command=tambah, width=21)
124 b1.grid(row=6, column=1, colspan=1, padx=10, pady=5)

```

```

126 b2=Button(root, text="Lihat", command=lihat, width=21)
127 b2.grid(row=7, column=1, colspan=1, padx=10, pady=5)
128
129 l6=Label(root, text="Pilih ID")
130 l6.grid(row=8, column=0, padx=10, pady=5, sticky="w")
131 e6=Entry(root, width=25)
132 e6.grid(row=8, column=1)
133
134 b3=Button(root, text="Perbarui", command=perbarui, width=21)
135 b3.grid(row=9, column=1, colspan=1, padx=10, pady=5)
136
137 b4=Button(root, text="Hapus", command=hapus, width=21)
138 b4.grid(row=10, column=1, colspan=1, padx=10, pady=5)

```

```

140 #Perbarui
141 lp0=Label(root, text="Perbarui", font=(None,12,"bold"))
142 lp0.grid(row=0, column=4)
143
144 ep1=Entry(root, width=25)
145 ep1.grid(row=1, column=4, padx=20)
146
147 ep2=Entry(root, width=25)
148 ep2.grid(row=2, column=4)
149
150 ep3=Entry(root, width=25)
151 ep3.grid(row=3, column=4)
152
153 ep4=Entry(root, width=25)
154 ep4.grid(row=4, column=4)
155
156 ep5=Entry(root, width=25)
157 ep5.grid(row=5, column=4)
158
159 bp1=Button(root, text="Simpan", command=simpan, width=21)
160 bp1.grid(row=6, column=4)
161
162 root.mainloop()

```

- Halaman Transaksi/Fitur: Tambah

The screenshot shows a Tkinter window titled "Servis Mobil/ Transaksi". It has two main sections: "Tambah" (Add) and "Perbarui" (Update). The "Tambah" section contains input fields for "Nomor" (1), "Tanggal" (1/7/2020), "ID Mobil" (1), "ID Layanan" (1), and "Harga Layanan" (750000). Below these fields are buttons for "Tambah", "Lihat", and "Pilih ID". The "Perbarui" section contains a "Simpan" button. At the bottom, there are buttons for "Perbarui" and "Hapus".

```

15 def tambah():
16     nomor=e1.get()
17     tanggal=e2.get()
18     idMobil=e3.get()
19     idJenisLayanan=e4.get()
20     hargaLayanan=e5.get()
21
22     mycursor = mydb.cursor()
23     sql = "INSERT INTO transaksi(nomorTransaksi, tanggalTransaksi, idMobilFK, idJenisLayananFK, hargaLayanan) VALUES (%s,%s,%s,%s,%s)"
24     val = (nomor, tanggal, idMobil, idJenisLayanan, hargaLayanan)
25     mycursor.execute(sql, val)
26     mydb.commit()
27
28     e1.delete(0,END)
29     e2.delete(0,END)
30     e3.delete(0,END)
31     e4.delete(0,END)
32     e5.delete(0,END)

```

- Halaman Transaksi/Fitur: Lihat

Servis Mobil/ Transaksi

Tambah

Nomor

Tanggal

ID Mobil

ID Layanan

Harga Layanan

Tambah

Lihat

Pilih ID

Perbarui

Hapus

Perbarui

Simpan

Nomor	Tanggal	ID Mobil	ID Layanan	Harga
1	1/7/2020	1		750000

```

34 def lihat():
35     mycursor = mydb.cursor()
36     mycursor.execute("SELECT * FROM transaksi")
37     myresult = mycursor.fetchall()
38
39     result=""
40     for myresult in myresult:
41         result +=str(myresult[0])+"\t"+str(myresult[1])+"\t"+str(myresult[2])+"\t"+str(myresult[3])+"\t"+str(myresult[4])+"\n"
42
43     ll=Label(root, text="Nomor"+ "\t" + "Tanggal" + "\t" + "ID Mobil" + "\t" + "ID Layanan" + "\t" + "Harga" + "\n" + result, justify=LEFT)
44     ll.grid(row=11, column=0, columnspan=2, padx=10)

```

- Halaman Transaksi/Fitur: Perbarui

Servis Mobil/ Transaksi

Tambah

Nomor

Tanggal

ID Mobil

ID Layanan

Harga Layanan

Tambah

Lihat

Pilih ID

Perbarui

Hapus

Perbarui

1

3/7/2020

2

2

1000000

Simpan

Nomor	Tanggal	ID Mobil	ID Layanan	Harga
1	1/7/2020	1		750000

Nomor	Tanggal	ID Mobil	ID Layanan	Harga
1	3/7/2020	2		1000000

```

48 def perbarui():
49     pilihID=e6.get()
50
51     mycursor = mydb.cursor()
52     mycursor.execute("SELECT * FROM transaksi WHERE nomorTransaksi='"+pilihID)
53     myresult = mycursor.fetchall()
54
55     for myresult in myresult:
56         ep1.insert(0, myresult[0])
57         ep2.insert(0, myresult[1])
58         ep3.insert(0, myresult[2])
59         ep4.insert(0, myresult[3])
60         ep5.insert(0, myresult[4])
61     mydb.commit()
62
63     e6.delete(0,END)

```

```

65 def simpan():
66     nomor=ep1.get()
67     tanggal=ep2.get()
68     idMobil=ep3.get()
69     idJenisLayanan=ep4.get()
70     hargaLayanan=ep5.get()
71
72     mycursor = mydb.cursor()
73     sql = "UPDATE transaksi SET tanggalTransaksi=%s, idMobilFK=%s, idJenisLayananFK=%s, hargaLayanan=%s WHERE nomorTransaksi= %s"
74     val = (tanggal, idMobil, idJenisLayanan, hargaLayanan, nomor)
75     mycursor.execute(sql, val)
76     mydb.commit()
77
78     ep1.delete(0,END)
79     ep2.delete(0,END)
80     ep3.delete(0,END)
81     ep4.delete(0,END)
82     ep5.delete(0,END)

```

- Halaman Transaksi/Fitur: Hapus

Servis Mobil/ Transaksi

Tambah

Nomor

Tanggal

ID Mobil

ID Layanan

Harga Layanan

Tambah

Lihat

Pilih ID

Perbarui

Hapus

Perbarui

Simpan

Nomor	Tanggal	ID Mobil	ID Layanan	Harga
1	3/7/2020	2		1000000

Nomor

Tanggal

ID Mobil

ID Layanan

Harga

```

84 def hapus():
85     pilihID=e6.get()
86
87     mycursor = mydb.cursor()
88     sql = "DELETE FROM transaksi WHERE nomorTransaksi='"+pilihID
89     mycursor.execute(sql)
90     mydb.commit()
91
92     e6.delete(0,END)

```