Nama : Bagus Zizou Satiaji

NIM : L200180212

Kelas : Praktikum Basis Data H

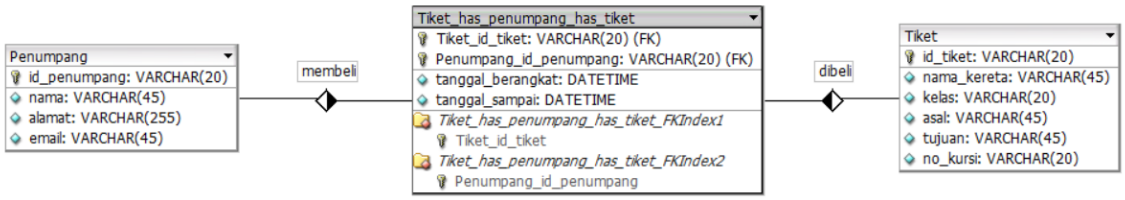
MODUL 12

APLIKASI TIKET KERETA API

1. Menentukan Entitas
   A. Penumpang
   B. Penumpang_has_tiket
   C. Tiket

2. Menentukan Atribut
   A. Penumpang
      - Id_penumpang VARCHAR(20)
      - Nama VARCHAR(45)
      - Alamat VARCHAR(255)
      - Email VARCHAR(45).
   B. Penumpang_has_tiket
      - Id_tiketFK VARCHAR(20)
      - Id_penumpangFK VARCHAR(20)
      - Tanggal_berangkat DATETIME
      - Tanggal_sampai DATETIME.
   C. Tiket
      - Id_tiket VARCHAR(20)
      - Nama_kereta VARCHAR(45)
      - Kelas VARCHAR(20)
      - Asal VARCHAR(45)
      - Tujuan VARCHAR(45)
      - No_kursi VARCHAR(20).

3. ER Diagram



4. Buat Database beserta tabel

connect.py - C:\project_tiket\connect.py (3.7.0)

File Edit Format Run Options Window Help

```
import mysql.connector

db = mysql.connector.connect(
    host="localhost",
    user="root",
    passwd="",
    )

cursor = db.cursor()
sql="create database tiket_kereta"
cursor.execute(sql)
db.commit()
```

tiket_table.py - C:/project_tiket/tiket_table.py (3.7.0)

File Edit Format Run Options Window Help

```
import mysql.connector

db = mysql.connector.connect(
    host="localhost",
    user="root",
    passwd="",
    database="tiket_kereta"
    )

cursor = db.cursor()
sql="""create table tiket(
    id_tiket varchar(20) not null primary key,
    nama_kereta varchar(45) not null,
    kelas varchar(20) not null,
    asal varchar(45) not null,
    tujuan varchar(45) not null,
    no_kursi varchar(20) not null)"""

cursor.execute(sql)
db.commit()
```

pembelian_table.py - C:/project_tiket/pembelian_table.py (3.7.0)

File Edit Format Run Options Window Help

```
import mysql.connector

db = mysql.connector.connect(
    host="localhost",
    user="root",
    passwd="",
    database="tiket_kereta"
    )

cursor = db.cursor()
sql="""create table pembelian(
    id_tiketFK varchar(20) references tiket(id_tiket)
    on delete cascade on update cascade,
    id_penumpangFK varchar(20) references penumpang(id_penumpang)
    on delete cascade on update cascade,
    tanggal_berangkat date,
    tanggal_sampai date,
    primary key(id_tiketFK, id_penumpangFK))"""

cursor.execute(sql)
db.commit()
```

5. Membuat TKinter dan isi tiap tabel

A. Penumpang

penumpang_table.py - C:\project_tiket\penumpang_table.py (3.7.0)

File Edit Format Run Options Window Help

```
import tkinter as tk
import tkinter.messagebox
from tkinter import*
import mysql.connector

db = mysql.connector.connect(
    host="localhost",
    user="root",
    passwd="",
    database="tiket_kereta"
    )

cursor = db.cursor()
class Penumpang:
    def __init__(self, master):
        self.master = master
        self.master.title("Database Penumpang")
        self.master.geometry('300x300')
        self.frame = Frame(self.master)
        self.frame.grid()

        title = Label(self.frame, text="Database Penumpang", font=('Times', 16, 'bold'))
        l_id = Label(self.frame, text="ID Penumpang", font=('Times', 12))
        l_nama = Label(self.frame, text="Nama", font=('Times', 12))
        l_alamat = Label(self.frame, text="Alamat", font=('Times', 12))
        l_email = Label(self.frame, text="Email", font=('Times', 12))

        title.grid(row=0, columnspan=4, pady=10)
        l_id.grid(row=1, column=0, sticky=W, padx=3)
        l_nama.grid(row=2, column=0, sticky=W, padx=3)
        l_alamat.grid(row=3, column=0, sticky=W, padx=3)
        l_email.grid(row=4, column=0, sticky=W, padx=3)


        #Entry dan posisi
        self.e_id = Entry(self.frame, width=30)
        self.e_nama = Entry(self.frame, width=30)
        self.e_alamat = Entry(self.frame, width=30)
        self.e_email = Entry(self.frame, width=30)

        self.e_id.grid(row=1, column=1, sticky=W, padx=10)
        self.e_nama.grid(row=2, column=1, sticky=W, padx=10)
        self.e_alamat.grid(row=3, column=1, sticky=W, padx=10)
        self.e_email.grid(row=4, column=1, sticky=W, padx=10)
```

penumpang_table.py - C:\project_tiket\penumpang_table.py (3.7.0)

File Edit Format Run Options Window Help

```
        #Entry dan posisi
        self.e_id = Entry(self.frame, width=30)
        self.e_nama = Entry(self.frame, width=30)
        self.e_alamat = Entry(self.frame, width=30)
        self.e_email = Entry(self.frame, width=30)

        self.e_id.grid(row=1, column=1, sticky=W, padx=10)
        self.e_nama.grid(row=2, column=1, sticky=W, padx=10)
        self.e_alamat.grid(row=3, column=1, sticky=W, padx=10)
        self.e_email.grid(row=4, column=1, sticky=W, padx=10)

        #Button dan posisi
        b_insert = Button(self.frame, text="Insert", command=self.insert_penumpang)
        b_update = Button(self.frame, text="Update", command=self.update_penumpang)
        b_show = Button(self.frame, text="Show", command=self.show_penumpang)

        b_insert.grid(row=5, column=0, pady=10, ipadx=10)
        b_update.grid(row=5, column=1, pady=10, ipadx=10)
        b_show.grid(row=7, column=1, pady=10, ipadx=10)

    def insert_penumpang(self):
        c= db.cursor()
        sql =f"INSERT INTO penumpang (`id_penumpang`,`nama`,`alamat`, `email`)VALUES('{self.e_id.get()}','{self.e_nama.get()}','{self.e_alamat.get()}', '{self.e_email.get()}')"
        c.execute(sql)
        db.commit()
        messagebox.showinfo("","Entry Data Berhasil")

    def update_penumpang(self):
        c = db.cursor()
        e1=self.e_nama.get()
        e2=self.e_alamat.get()
        e3=self.e_email.get()
        e4=self.e_id.get()
        sql =f"UPDATE penumpang SET nama=%s, alamat=%s ,email=%s where id_penumpang=%s"
        val = (e1,e2,e3,e4)
        c.execute(sql,val)
        db.commit()
        messagebox.showinfo("","Update Data Berhasil")
```

```
    def show_penumpang(self):
        c = db.cursor()
        show = Tk()
        show.title("Data Penumpang")
        Label(show, text="ID Penumpang").grid(row=0, column=0, sticky=W)
        Label(show, text="Nama").grid(row=0, column=1, sticky=W)
        Label(show, text="Alamat").grid(row=0, column=2, sticky=W)
        Label(show, text="Email").grid(row=0, column=3, sticky=W)



        sql="select*from penumpang"
        c.execute(sql)
        penumpang = c.fetchall()

        for i in range(len(penumpang)):
            for j in range(len(penumpang[i])):
                teks=Entry(show)
                teks.grid(row=i+1,column=j)
                teks.insert(END,penumpang[i][j])

    def delete_penumpang(self):
        self.delete_penumpang=Toplevel(self.master)
        self.UI=delete_penumpang(self.delete_penumpang)
```

B. Delete penumpang

penumpang_delete.py - C:\project_tiket\penumpang_delete.py (3.7.0)

File Edit Format Run Options Window Help

```
import tkinter as tk
import tkinter.messagebox
from tkinter import*
import mysql.connector

db = mysql.connector.connect(
    host="localhost",
    user="root",
    passwd="",
    database="tiket_kereta"
    )

c=db.cursor()

class delete_penumpang:
    def __init__(self, master):
        self.master = master
        self.frame = Frame(self.master)
        self.frame.grid()

        self.e_delete = Label(self.frame, text="Pilih ID Penumpang")
        self.e_delete.grid(row=2, column=0, columnspan=2, pady=10, padx=10)
        self.e_id = Entry(self.frame, width=30)
        self.e_id.grid(row=4, column=0, columnspan=2, pady=10, padx=10)
        self.b_delete = Button(self.frame, text="Hapus", command=self.delete)
        self.b_delete.grid(row=6, column=0, columnspan=2, pady=10, padx=10)

    def delete(self):
        c=db.cursor()
        e1=self.e_id.get()
        sql = "delete from penumpang where id_penumpang=%s"
        val=(e1, )
        c.execute(sql, val)
        db.commit()
        messagebox.showinfo("", "Data Berhasil Dihapus")
```

C. Tiket

tiket_table.py - C:\project_tiket\tiket_table.py (3.7.0)

File Edit Format Run Options Window Help

```
import tkinter as tk
import tkinter.messagebox
from tkinter import*
import mysql.connector
from tiket_del import delete_tiket

db = mysql.connector.connect(
    host="localhost",
    user="root",
    passwd="",
    database="tiket_kereta"
    )

cursor = db.cursor()

class Tiket:
    def __init__(self, master):
        self.master = master
        self.master.title("Database Tiket")
        self.master.geometry('300x300')
        self.frame = Frame(self.master)
        self.frame.grid()

        title = Label(self.frame, text="Database Tiket", font=('Times', 16, 'bold'))
        l_id= Label(self.frame, text="ID Tiket", font=('Times', 12))
        l_nama = Label(self.frame, text="Nama kereta", font=('Times', 12))
        l_kelas = Label(self.frame, text="Kelas", font=('Times', 12))
        l_asal = Label(self.frame, text="Asal", font=('Times', 12))
        l_tujuan = Label(self.frame, text="Tujuan", font=('Times', 12))
        l_no = Label(self.frame, text="Nomor Kursi", font=('Times', 12))

        title.grid(row=0, columnspan=4, pady=10)
        l_id.grid(row=1, column=0, sticky=W, padx=3)
        l_nama.grid(row=2, column=0, sticky=W, padx=3)
        l_kelas.grid(row=3, column=0, sticky=W, padx=3)
        l_asal.grid(row=4, column=0, sticky=W, padx=3)
        l_tujuan.grid(row=5, column=0, sticky=W, padx=3)
        l_no.grid(row=6, column=0, sticky=W, padx=3)

        #Entry dan posisi
        self.e_id = Entry(self.frame, width=30)
        self.e_nama = Entry(self.frame, width=30)
        self.e_kelas = Entry(self.frame, width=30)
        self.e_asal = Entry(self.frame, width=30)
        self.e_tujuan = Entry(self.frame, width=30)
        self.e_no = Entry(self.frame, width=30)
```

tiket_table.py - C:\project_tiket\tiket_table.py (3.7.0)

File Edit Format Run Options Window Help

```
        self.e_id.grid(row=1, column=1, sticky=W, padx=10)
        self.e_nama.grid(row=2, column=1, sticky=W, padx=10)
        self.e_kelas.grid(row=3, column=1, sticky=W, padx=10)
        self.e_asal.grid(row=4, column=1, sticky=W, padx=10)
        self.e_tujuan.grid(row=5, column=1, sticky=W, padx=10)
        self.e_no.grid(row=6, column=1, sticky=W, padx=10)


        #Button dan posisi
        b_insert = Button(self.frame, text="Insert", command=self.insert_tiket)
        b_update = Button(self.frame, text="Update", command=self.update_tiket)
        b_show = Button(self.frame, text="Show", command=self.show_tiket)
        b_delete = Button(self.frame, text="Delete", command=self.delete_tiket)


        b_insert.grid(row=7, column=0, pady=10, ipadx=10)
        b_update.grid(row=7, column=1, pady=10, ipadx=10)
        b_show.grid(row=8, column=1, pady=10, ipadx=10)
        b_delete.grid(row=8, column=0, pady=10, ipadx=10)

    def insert_tiket(self):
        cursor = db.cursor()
        sql ="INSERT INTO tiket (`id_tiket`,`nama_kereta`,`kelas`, `asal`, `tujuan`,`no_kursi`)VALUES('{self.e_id.get()}','{self.e_nama.get()}','{self.e_kelas.get()}', '{self.e_asal.get()}
        cursor.execute(sql)
        db.commit()
        messagebox.showinfo("","Entry Data Berhasil")


    def update_tiket(self):
        c = db.cursor()
        e1=self.e_nama.get()
        e2=self.e_kelas.get()
        e3=self.e_asal.get()
        e4=self.e_tujuan.get()
        e5=self.e_no.get()
        e6=self.e_id.get()
        sql ="UPDATE tiket SET nama_kereta=%s, kelas=%s ,asal=%s, tujuan=%s, no_kursi=%s where id_tiket=%s"
        val = (e1,e2,e3,e4,e5,e6)
        c.execute(sql,val)
        db.commit()
        messagebox.showinfo("","Update Data Berhasil")
```

```
    def show_tiket(self):
        c = db.cursor()
        show = Tk()
        show.title("Data Tiket")
        Label(show, text="ID Tiket").grid(row=0, column=0, sticky=W)
        Label(show, text="Nama Kereta").grid(row=0, column=1, sticky=W)
        Label(show, text="Kelas").grid(row=0, column=2, sticky=W)
        Label(show, text="Asal").grid(row=0, column=3, sticky=W)
        Label(show, text="Tujuan").grid(row=0, column=4, sticky=W)
        Label(show, text="Nomor kursi").grid(row=0, column=5, sticky=W)


        sql="select*from tiket"
        c.execute(sql)
        tiket = c.fetchall()

        for i in range(len(tiket)):
            for j in range(len(tiket[i])):
                teks=Entry(show)
                teks.grid(row=i+1,column=j)
                teks.insert(END,tiket[i][j])

    def delete_tiket(self):
        self.delete_tiket=Toplevel(self.master)
        self.UI=delete_tiket(self.delete_tiket)
```

D. Delete Tiket

tiket_del.py - C:\project_tiket\tiket_del.py (3.7.0)

File Edit Format Run Options Window Help

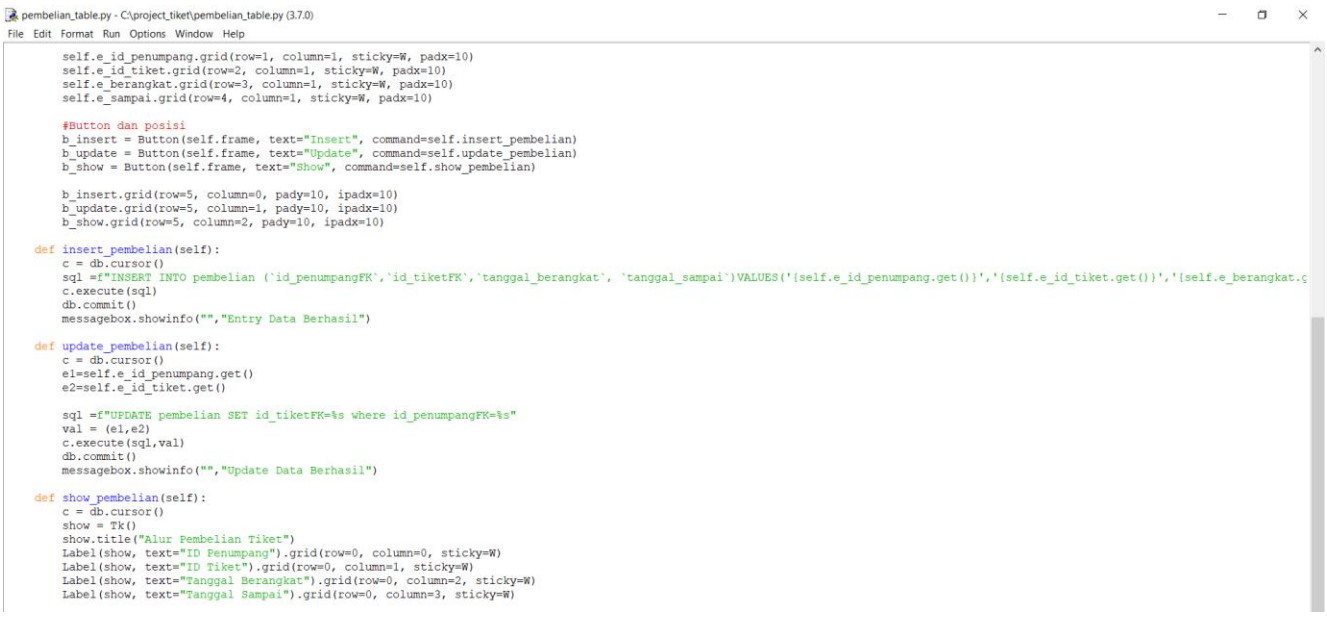
```
import tkinter as tk
import tkinter.messagebox
from tkinter import*
import mysql.connector

db = mysql.connector.connect(
    host="localhost",
    user="root",
    passwd="",
    database="tiket_kereta"
    )

c=db.cursor()

class delete_tiket:
    def __init__(self, master):
        self.master = master
        self.frame = Frame(self.master)
        self.frame.grid()

        self.e_delete = Label(self.frame, text="Pilih ID Tiket")
        self.e_delete.grid(row=2, column=0, columnspan=2, pady=10, padx=10)
        self.e_id = Entry(self.frame, width=30)
        self.e_id.grid(row=4, column=0, columnspan=2, pady=10, padx=10)
        self.b_delete = Button(self.frame, text="Hapus", command=self.delete)
        self.b_delete.grid(row=6, column=0, columnspan=2, pady=10, padx=10)

    def delete(self):
        c=db.cursor()
        e1=self.e_id.get()
        sql = "delete from tiket where id_tiket=%s"
        val=(e1, )
        c.execute(sql, val)
        db.commit()
        messagebox.showinfo("", "Data Berhasil Dihapus")
```

E. Pembelian

pembelian_table.py - C:\project_tiket\pembelian_table.py (3.7.0)

File Edit Format Run Options Window Help

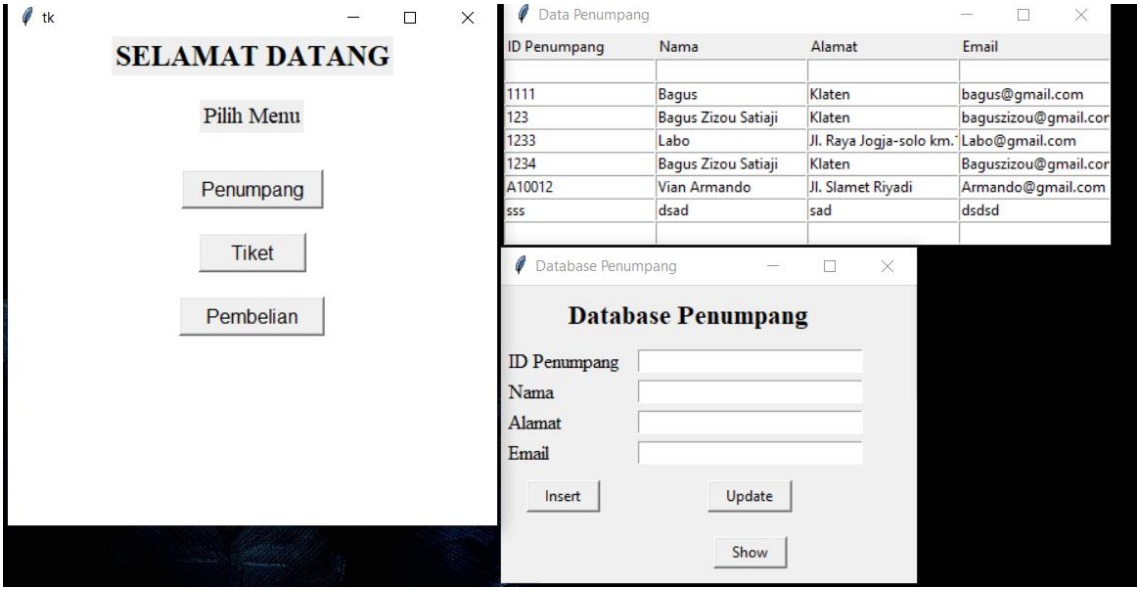
```
import tkinter as tk
import tkinter.messagebox
from tkinter import*
import mysql.connector

db = mysql.connector.connect(
    host="localhost",
    user="root",
    passwd="",
    database="Tiket_kereta"
    )

cursor = db.cursor()

class Pembelian:
    def __init__(self, master):
        self.master = master
        self.master.geometry('450x250')
        self.frame = Frame(self.master)
        self.frame.grid()

        title = Label(self.frame, text="Pendataan Pembelian Tiket", font=('Times', 16, 'bold'))
        l_id_penumpang = Label(self.frame, text="ID Penumpang", font=('Times', 12))
        l_id_tiket = Label(self.frame, text="ID Tiket", font=('Times', 12))
        l_berangkat = Label(self.frame, text="Tanggal Berangkat", font=('Times', 12))
        l_sampai= Label(self.frame, text="Tanggal Sampai", font=('Times', 12))

        title.grid(row=0, columnspan=4, pady=10)
        l_id_penumpang.grid(row=1, column=0, sticky=W, padx=3)
        l_id_tiket.grid(row=2, column=0, sticky=W, padx=3)
        l_berangkat.grid(row=3, column=0, sticky=W, padx=3)
        l_sampai.grid(row=4, column=0, sticky=W, padx=3)


        #Entry dan posisi
        self.e_id_penumpang = Entry(self.frame, width=30)
        self.e_id_tiket = Entry(self.frame, width=30)
        self.e_berangkat= Entry(self.frame, width=30)
        self.e_sampai = Entry(self.frame, width=30)

        self.e_id_penumpang.grid(row=1, column=1, sticky=W, padx=10)
        self.e_id_tiket.grid(row=2, column=1, sticky=W, padx=10)
        self.e_berangkat.grid(row=3, column=1, sticky=W, padx=10)
        self.e_sampai.grid(row=4, column=1, sticky=W, padx=10)
```



```
def show_pembelian(self):
    c = db.cursor()
    show = Tk()
    show.title("Alur Pembelian Tiket")
    Label(show, text="ID Penumpang").grid(row=0, column=0, sticky=W)
    Label(show, text="ID Tiket").grid(row=0, column=1, sticky=W)
    Label(show, text="Tanggal Berangkat").grid(row=0, column=2, sticky=W)
    Label(show, text="Tanggal Sampai").grid(row=0, column=3, sticky=W)


    sql="select*from pembelian"
    c.execute(sql)
    pembelian = c.fetchall()

    for i in range(len(pembelian)):
        for j in range(len(pembelian[i])):
            teks=Entry(show)
            teks.grid(row=i+1,column=j)
            teks.insert(END,pembelian[i][j])
```

6. Eksekusi Program

A. Insert Penumpang



B. Insert Tiket

C. Pembelian