LAPORAN PRAKTIKUM

PEMROGRAMAN BERORIENTASI OBJEK LANJUT

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Prepared By:

Nama : Zidan Khoirul Rizki

NIM : 210511049

Kelas : R2

1. Mahasiswa.php

```php
<?php
require_once 'database.php';
class Mahasiswa
{
    private $db;
    private $table = 'mahasiswa';
    public $nim = "";
    public $nama = "";
    public $jk = "";
    public $prodi = "";
    public function __construct(MySQLDatabase $db)
    {
        $this->db = $db;
    }
    public function get_all()
    {
        $query = "SELECT * FROM $this->table";
        $result_set = $this->db->query($query);
        return $result_set;
    }
    public function get_by_id(int $id)
    {
        $query = "SELECT * FROM $this->table WHERE id = $id";
        $result_set = $this->db->query($query);
        return $result_set;
    }
    public function get_by_nim(int $nim)
    {
        $query = "SELECT * FROM $this->table WHERE nim = $nim";
        $result_set = $this->db->query($query);
        return $result_set;
    }
    public function insert(): int
    {
        $query = "INSERT INTO $this->table (`nim`,`nama`,`jk`,`prodi`) VALUES
('$this->nim','$this->nama','$this->jk','$this->prodi')";
        $this->db->query($query);
        return $this->db->insert_id();
    }
    public function update(int $id): int
    {
        $query = "UPDATE $this->table SET nim = '$this->nim', nama = '$this-
>nama', jk = '$this->jk', prodi = '$this->prodi'
        WHERE id = $id";
        $this->db->query($query);
```

```
        return $this->db->affected_rows();
    }
    public function update_by_nim($nim): int
    {
        $query = "UPDATE $this->table SET nim = '$this->nim', nama = '$this-
>nama', jk = '$this->jk', prodi = '$this->prodi'
        WHERE nim = $nim";
        $this->db->query($query);
        return $this->db->affected_rows();
    }
    public function delete(int $id): int
    {
        $query = "DELETE FROM $this->table WHERE id = $id";
        $this->db->query($query);
        return $this->db->affected_rows();
    }
    public function delete_by_nim($nim): int
    {
        $query = "DELETE FROM $this->table WHERE nim = $nim";
        $this->db->query($query);
        return $this->db->affected_rows();
    }
}
?>
```

2. Mahasiswa_api.php

```php
<?php
require_once 'database.php';
require_once 'Mahasiswa.php';
$db = new MySQLDatabase();
$mahasiswa = new Mahasiswa($db);
$id=0;
$nim=0;
// Check the HTTP request method
$method = $_SERVER['REQUEST_METHOD'];
// Handle the different HTTP methods
switch ($method) {
    case 'GET':
        if(isset($_GET['id'])){
            $id = $_GET['id'];
        }
        if(isset($_GET['nim'])){
            $nim = $_GET['nim'];
        }
        if($id>0){
            $result = $mahasiswa->get_by_id($id);
        }elseif($nim>0){
            $result = $mahasiswa->get_by_nim($nim);
        } else {
            $result = $mahasiswa->get_all();
        }

        $val = array();
        while ($row = $result->fetch_assoc()) {
            $val[] = $row;
        }

        header('Content-Type: application/json');
        echo json_encode($val);
        break;

    case 'POST':
        // Add a new mahasiswa
        $mahasiswa->nim = $_POST['nim'];
        $mahasiswa->nama = $_POST['nama'];
        $mahasiswa->jk = $_POST['jk'];
        $mahasiswa->prodi = $_POST['prodi'];

        $mahasiswa->insert();
        $a = $db->affected_rows();
        if($a>0){
```

```
        $data['status']='success';
        $data['message']='Data Mahasiswa created successfully.';
    } else {
        $data['status']='failed';
        $data['message']='Data Mahasiswa not created.';
    }
    header('Content-Type: application/json');
    echo json_encode($data);
    break;
case 'PUT':
    // Update an existing data
    $_PUT = [];
    if(isset($_GET['id'])){
        $id = $_GET['id'];
    }
    if(isset($_GET['nim'])){
        $nim = $_GET['nim'];
    }
    parse_str(file_get_contents("php://input"), $_PUT);
    $mahasiswa->nim = $_PUT['nim'];
    $mahasiswa->nama = $_PUT['nama'];
    $mahasiswa->jk = $_PUT['jk'];
    $mahasiswa->prodi = $_PUT['prodi'];
    if($id>0){
        $mahasiswa->update($id);
    }elseif($nim<>""){
        $mahasiswa->update_by_nim($nim);
    } else {

    }

    $a = $db->affected_rows();
    if($a>0){
        $data['status']='success';
        $data['message']='Data Mahasiswa updated successfully.';
    } else {
        $data['status']='failed';
        $data['message']='Data Mahasiswa update failed.';
    }
    header('Content-Type: application/json');
    echo json_encode($data);
    break;
case 'DELETE':
    // Delete a user
    if(isset($_GET['id'])){
        $id = $_GET['id'];
    }
    if(isset($_GET['nim'])){
```

```php
            $nim = $_GET['nim'];
        }
        if($id>0){
            $mahasiswa->delete($id);
        }elseif($nim>0){
            $mahasiswa->delete_by_nim($nim);
        } else {

        }

        $a = $db->affected_rows();
        if($a>0){
            $data['status']='success';
            $data['message']='Data Mahasiswa deleted successfully.';
        } else {
            $data['status']='failed';
            $data['message']='Data Mahasiswa delete failed.';
        }
        header('Content-Type: application/json');
        echo json_encode($data);
        break;
    default:
        header("HTTP/1.0 405 Method Not Allowed");
        break;
    }
$db->close()
?>
```

3. Mahasiswa.py

```
import requests
import json
class Mahasiswa:
    def __init__(self):
        self.__id=None
        self.__nim = None
        self.__nama = None
        self.__jk = None
        self.__prodi = None
        self.__url = "http://localhost/appmahasiswa/mahasiswa_api.php"

    @property
    def id(self):
        return self.__id
    @property
    def nim(self):
        return self.__nim

    @nim.setter
    def nim(self, value):
        self.__nim = value
    @property
    def nama(self):
        return self.__nama

    @nama.setter
    def nama(self, value):
        self.__nama = value
    @property
    def jk(self):
        return self.__jk

    @jk.setter
    def jk(self, value):
        self.__jk = value
    @property
    def prodi(self):
        return self.__prodi

    @prodi.setter
    def prodi(self, value):
        self.__prodi = value
    def get_all(self):
        payload ={}
        headers = {'Content-Type': 'application/json'}
```

```
        response = requests.get(self.__url, json=payload, headers=headers)
        return response.text
    def get_by_nim(self, nim):
        url = self.__url+"?nim="+nim
        payload = {}
        headers = {'Content-Type': 'application/json'}
        response = requests.get(url, json=payload, headers=headers)
        data = json.loads(response.text)
        for item in data:
            self.__id = item['id']
            self.__nim = item['nim']
            self.__nama = item['nama']
            self.__jk = item['jk']
            self.__prodi = item['prodi']
        return data
    def simpan(self):
        payload = {
            "nim":self.__nim,
            "nama":self.__nama,
            "jk":self.__jk,
            "prodi":self.__prodi
            }
        headers = {'Content-Type': 'application/x-www-form-urlencoded'}
        response = requests.post(self.__url, data=payload, headers=headers)
        return response.text
    def update_by_nim(self, nim):
        url = self.__url+"?nim="+nim
        payload = {
            "nim":self.__nim,
            "nama":self.__nama,
            "jk":self.__jk,
            "prodi":self.__prodi
            }
        headers = {'Content-Type': 'application/x-www-form-urlencoded'}
        response = requests.put(url, data=payload, headers=headers)
        return response.text
    def delete_by_nim(self,nim):
        url = self.__url+"?nim="+nim
        headers = {'Content-Type': 'application/json'}
        payload={}
        response = requests.delete(url, json=payload, headers=headers)
        return response.text
```

4. FrmMahasiswa.py

```
import tkinter as tk
import json
from tkinter import
Frame,Label,Entry,Button,Radiobutton,ttk,VERTICAL,YES,BOTH,END,Tk,W,StringVar,
messagebox
from mahasiswa import *
class FrmMahasiswa :

    def __init__(self, parent, title):
        self.parent = parent
        self.parent.geometry("450x450")
        self.parent.title(title)
        self.parent.protocol("WM_DELETE_WINDOW", self.onKeluar)
        self.ditemukan = None
        self.aturKomponen()
        self.onReload()

    def aturKomponen(self):
        mainFrame = Frame(self.parent, bd=10)
        mainFrame.pack(fill=BOTH, expand=YES)
        Label(mainFrame, text='NIM:').grid(row=0, column=0,
            sticky=W, padx=5, pady=5)
        Label(mainFrame, text='NAMA:').grid(row=1, column=0,
            sticky=W, padx=5, pady=5)
        Label(mainFrame, text='JK:').grid(row=2, column=0,
            sticky=W, padx=5, pady=5)
        Label(mainFrame, text='PRODI:').grid(row=3, column=0,
            sticky=W, padx=5, pady=5)
        # Textbox
        self.txtNim = Entry(mainFrame)
        self.txtNim.grid(row=0, column=1, padx=5, pady=5)
        self.txtNim.bind("<Return>",self.onCari) # menambahkan event Enter key
        # Textbox
        self.txtNama = Entry(mainFrame)
        self.txtNama.grid(row=1, column=1, padx=5, pady=5)
        # Combo Box
        self.txtJk = StringVar()
        Cbo_jk = ttk.Combobox(mainFrame, width = 17, textvariable =
self.txtJk)
        Cbo_jk.grid(row=2, column=1, padx=5, pady=5)
        # Adding jk combobox drop down list
        Cbo_jk['values'] = ('L','P')
        Cbo_jk.current()
        # Combo Box
        self.txtProdi = StringVar()
```

```
        Cbo_prodi = ttk.Combobox(mainFrame, width = 17, textvariable =
self.txtProdi)
        Cbo_prodi.grid(row=3, column=1, padx=5, pady=5)
        # Adding prodi combobox drop down list
        Cbo_prodi['values'] = ('IND','TIF')
        Cbo_prodi.current()
        # Button
        self.btnSimpan = Button(mainFrame, text='Update',
command=self.onSimpan, width=10)
        self.btnSimpan.grid(row=0, column=3, padx=5, pady=5)
        self.btnClear = Button(mainFrame, text='Clear', command=self.onClear,
width=10)
        self.btnClear.grid(row=1, column=3, padx=5, pady=5)
        self.btnHapus = Button(mainFrame, text='Hapus', command=self.onDelete,
width=10)
        self.btnHapus.grid(row=2, column=3, padx=5, pady=5)
        # define columns
        columns = ('id','nim','nama','jk','prodi')
        self.tree = ttk.Treeview(mainFrame, columns=columns, show='headings')
        # define headings
        self.tree.heading('id', text='ID')
        self.tree.column('id', width="30")
        self.tree.heading('nim', text='NIM')
        self.tree.column('nim', width="40")
        self.tree.heading('nama', text='NAMA')
        self.tree.column('nama', width="110")
        self.tree.heading('jk', text='JK')
        self.tree.column('jk', width="30")
        self.tree.heading('prodi', text='PRODI')
        self.tree.column('prodi', width="70")
        # set tree position
        self.tree.place(x=0, y=200)

    def onClear(self, event=None):
        self.txtNim.delete(0,END)
        self.txtNim.insert(END,"")
        self.txtNama.delete(0,END)
        self.txtNama.insert(END,"")
        self.txtJk.set("")
        self.txtProdi.set("")
        self.btnSimpan.config(text="Simpan")
        self.onReload()
        self.ditemukan = False

    def onReload(self, event=None):
        # get data mahasiswa
        obj = Mahasiswa()
        result = obj.get_all()
```

```
        parsed_data = json.loads(result)
        for item in self.tree.get_children():
            self.tree.delete(item)

        for i, d in enumerate(parsed_data):
            self.tree.insert("", i, text="Item {}".format(i),
values=(d["id"],d["nim"],d["nama"],d["jk"],d["prodi"]))
    def onCari(self, event=None):
        nim = self.txtNim.get()
        obj = Mahasiswa()
        a = obj.get_by_nim(nim)
        if(len(a)>0):
            self.TampilkanData()
            self.ditemukan = True
        else:
            self.ditemukan = False
            messagebox.showinfo("showinfo", "Data Tidak Ditemukan")
    def TampilkanData(self, event=None):
        nim = self.txtNim.get()
        obj = Mahasiswa()
        res = obj.get_by_nim(nim)
        self.txtNim.delete(0,END)
        self.txtNim.insert(END,obj.nim)
        self.txtNama.delete(0,END)
        self.txtNama.insert(END,obj.nama)
        self.txtJk.set(obj.jk)
        self.txtProdi.set(obj.prodi)
        self.btnSimpan.config(text="Update")

    def onSimpan(self, event=None):
        # get the data from input
        nim = self.txtNim.get()
        nama = self.txtNama.get()
        jk = self.txtJk.get()
        prodi = self.txtProdi.get()
        # create new Object
        obj = Mahasiswa()
        obj.nim = nim
        obj.nama = nama
        obj.jk = jk
        obj.prodi = prodi
        if(self.ditemukan==False):
            # save the record
            res = obj.simpan()
        else:
            # update the record
            res = obj.update_by_nim(nim)
        # read data in json format
```

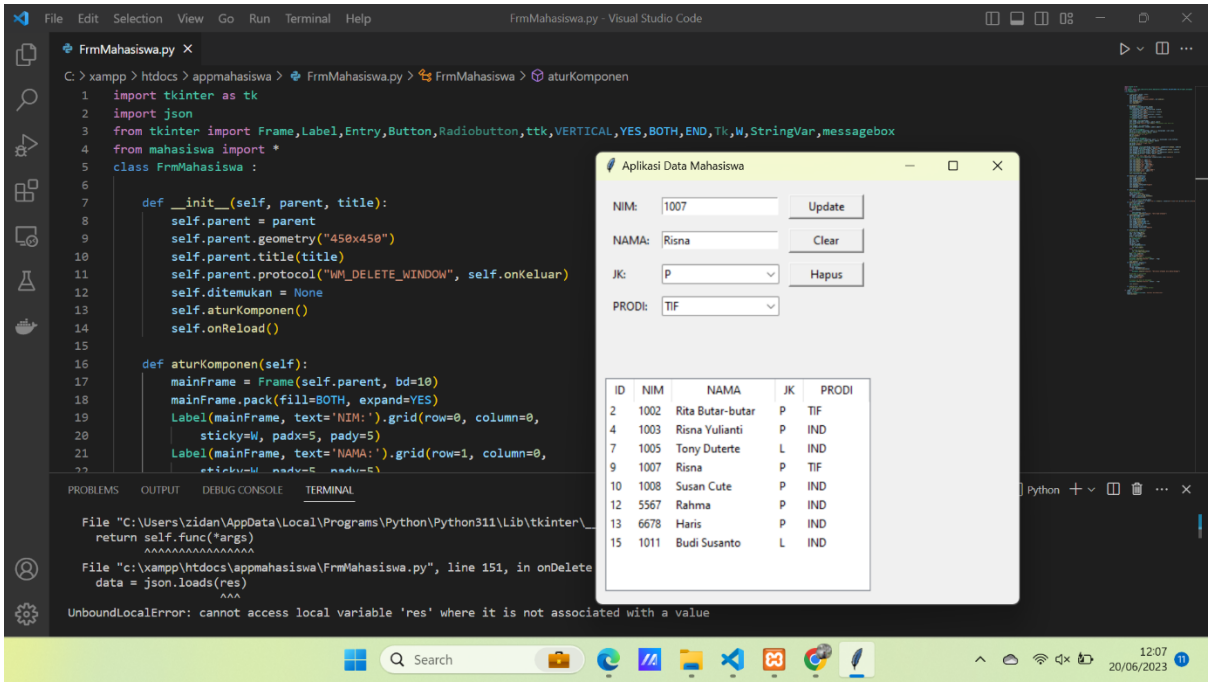
```
        data = json.loads(res)
        status = data["status"]
        msg = data["message"]
        # display json data into messagebox
        messagebox.showinfo("showinfo", status+', '+msg)
        #clear the form input
        self.onClear()
    def onDelete(self, event=None):
        nim = self.txtNim.get()
        obj = Mahasiswa()
        obj.nim = nim
        if(self.ditemukan==True):
            res = obj.delete_by_nim(nim)
        else:
            messagebox.showinfo("showinfo", "Data harus ditemukan dulu sebelum
dihapus")

        # read data in json format
        data = json.loads(res)
        status = data["status"]
        msg = data["message"]

        # display json data into messagebox
        messagebox.showinfo("showinfo", status+', '+msg)

        self.onClear()

    def onKeluar(self, event=None):
        # memberikan perintah menutup aplikasi
        self.parent.destroy()
if __name__ == '__main__':
    root2 = tk.Tk()
    aplikasi = FrmMahasiswa(root2, "Aplikasi Data Mahasiswa")
    root2.mainloop()
```



Tampilan Frm Mahasiswa