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```
1  /*
2  * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this license
3  * Click nbfs://nbhost/SystemFileSystem/Templates/Classes/Class.java to edit this template
4  */
5  package me.rachel.mahasiswa.model;
6
7  /**
8   *
9   * @author rache
10  */
11  public class ModelMahasiswa {
12      private int id;
13      private String nama;
14      private String npm;
15      private int semester;
16      private float ipk;
17
18      public ModelMahasiswa(int id, String nama, String npm, int semester, float ipk) {
19          this.id = id;
20          this.nama = nama;
21          this.npm = npm;
22          this.semester = semester;
23          this.ipk = ipk;
24      }
25
26      public int getId() {
27          return id;
28      }
29
30      public void setId(int id) {
31          this.id = id;
32      }
33
34      public String getNama() {
35          return nama;
36      }
37
38      public void setNama(String nama) {
39          this.nama = nama;
40      }
41
42      public String getNpm() {
43          return npm;
44      }
45
46      public void setNpm(String npm) {
47          this.npm = npm;
48      }
49
50      public int getSemester() {
51          return semester;
52      }
53
54      public void setSemester(int semester) {
55          this.semester = semester;
56      }
57
58      public float getIpk() {
59          return ipk;
60      }
61
62      public void setIpk(float ipk) {
63          this.ipk = ipk;
64      }
65  }
```

```
...4] ModelMahasiswa.java x MahasiswaDAO.java x MahasiswaController.java x MahasiswaView.java x
Source History
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4   */
5   package me.rachel.mahasiswa.model;
6
7   import java.sql.*;
8   import java.util.ArrayList;
9   import java.util.List;
10
11  /**
12   *
13   * @author rache
14   */
15  public class MahasiswaDAO {
16      private Connection connection;
17
18      public MahasiswaDAO() {
19          try {
20              Class.forName("com.mysql.cj.jdbc.Driver");
21              connection = DriverManager.getConnection("jdbc:mysql://localhost:3306/mvc_51421194", "root",
22              } catch (Exception e) {
23                  e.printStackTrace();
24              }
25      }
26
27      public boolean checkConnection() {
28          try {
29              if(connection != null && !connection.isClosed()) {
30                  return true;
31              }
32          } catch (SQLException e) {
33              e.printStackTrace();
34          }
35          return false;
36      }
37
38      public void closeConnection() {
39          try {
40              if(connection != null) {
41                  connection.close();
42              }
43          } catch (SQLException e) {
44              e.printStackTrace();
45          }
46      }
47
48      public void addMahasiswa(ModelMahasiswa mahasiswa) {
49          String sql = "INSERT INTO mahasiswa (npm, nama, semester, ipk) VALUES (?, ?, ?)";
50          try{
```

```
Source History
46     }
47
48     public void addMahasiswa(ModelMahasiswa mahasiswa) {
49         String sql = "INSERT INTO mahasiswa (npm, nama, semester, ipk) VALUES (?, ?, ?)";
50         try{
51             PreparedStatement partmt = connection.prepareStatement(sql);
52             partmt.setString(1, mahasiswa.getNpm());
53             partmt.setString(2, mahasiswa.getNama());
54             partmt.setInt(3, mahasiswa.getSemester());
55             partmt.setFloat(4, mahasiswa.getIpk());
56             partmt.executeUpdate();
57         } catch(SQLException e) {
58             e.printStackTrace();
59         }
60     }
61
62     public List<ModelMahasiswa> getAllMahasiswa() {
63         List<ModelMahasiswa> mahasiswaList = new ArrayList();
64         String sql = "SELECT * FROM mahasiswa";
65         try{
66             Statement stmt = connection.createStatement();
67             ResultSet rs = stmt.executeQuery(sql);
68             while(rs.next()){
69                 mahasiswaList.add(new ModelMahasiswa(
70                     rs.getInt("id"),
71                     rs.getString("nama"),
```

```
72                     rs.getFloat("ipk"),
73                     rs.getInt("semester")
74                 ));
75             }
76         } catch(SQLException e) {
77             e.printStackTrace();
78         }
79         return mahasiswaList;
80     }
81
82
83     public void updateMahasiswa(ModelMahasiswa mahasiswa) {
84         String sql = "UPDATE mahasiswa SET npm = ?, nama = ?, semester = ?, ipk = ? WHERE id = ?";
85         try{
86             PreparedStatement partmt = connection.prepareStatement(sql);
87             partmt.setString(1, mahasiswa.getNpm());
88             partmt.setString(2, mahasiswa.getNama());
89             partmt.setInt(3, mahasiswa.getSemester());
90             partmt.setFloat(4, mahasiswa.getIpk());
91             partmt.setInt(5, mahasiswa.getId());
92             partmt.executeUpdate();
93         } catch(SQLException e) {
94             e.printStackTrace();
95         }
96     }
97
98     public void deleteMahasiswa(int id) {
```

```
7
9     public void deleteMahasiswa(int id) {
10         String sql = "DELETE FROM mahasiswa WHERE id = ?";
11         try{
12             PreparedStatement partmt = connection.prepareStatement(sql);
13             partmt.setInt(1, id);
14             partmt.executeUpdate();
15         } catch(SQLException e) {
16             e.printStackTrace();
17         }
18     }
19 }
```

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5   package me.rachel.mahasiswa.controller;
6
7   import me.rachel.mahasiswa.model.MahasiswaDAO;
8   import me.rachel.mahasiswa.model.ModelMahasiswa;
9
10  /**
11   *
12   * @author rache
13   */
14  public class MahasiswaController {
15      private MahasiswaDAO mahasiswaDAO;
16
17      public MahasiswaController(MahasiswaDAO mahasiswaDAO) {
18          this.mahasiswaDAO = mahasiswaDAO;
19      }
20
21      public void displayMahasiswaList(List<ModelMahasiswa> mahasiswaList) {
22          if(mahasiswaList.isEmpty()) {
23              System.out.println("Tidak ada data mahasiswa");
24          } else {
25              System.out.println("");
26              System.out.println("-----");
27          }
28      }
29  }
```

```
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Source History
52      displayMahasiswaList(mahasiswaList);
53  }
54
55  public void addMahasiswa(String npm, String nama, int semester, float ipk) {
56      ModelMahasiswa mahasiswaBaru = new ModelMahasiswa(0, npm, nama, semester, ipk);
57      System.out.println("Controller Data: " + npm + nama + semester + ipk);
58      System.out.println(mahasiswaBaru);
59      mahasiswaDAO.addMahasiswa(mahasiswaBaru);
60      displayMessage("Mahasiswa berhasil ditambahkan!");
61  }
62
63  public void updateMahasiswa(int id, String npm, String nama, int semester, float ipk){
64      ModelMahasiswa mahasiswaBaru = new ModelMahasiswa(id, npm, nama, semester, ipk);
65      mahasiswaDAO.updateMahasiswa(mahasiswaBaru);
66      displayMessage("Mahasiswa berhasil diperbarui!");
67  }
68
69  public void deleteMahasiswa(int id){
70      mahasiswaDAO.deleteMahasiswa(id);
71      displayMessage("Mahasiswa Berhasil Dihapus!");
72  }
73
74  public void closeConnection() {
75      mahasiswaDAO.closeConnection();
76  }
77  }
```

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4   */
5   package me.rachel.mahasiswa.view;
6
7   import me.rachel.mahasiswa.controller.MahasiswaController;
8   import me.rachel.mahasiswa.model.MahasiswaDAO;
9   import java.util.Scanner;
10
11  /**
12   *
13   * @author totos
14   */
15  public class MahasiswaView {
16
17      public static void main(String[] args) {
18          MahasiswaDAO mahasiswaDAO = new MahasiswaDAO();
19          MahasiswaController mahasiswaController = new MahasiswaController(mahasiswaDAO);
20
21          Scanner scanner = new Scanner(System.in);
22          int pilihan;
23
24          while(true) {
25              System.out.println("Menu:");
26              System.out.println("1. Tampilkan Semua Mahasiswa");
27              System.out.println("2. Tambah Mahasiswa");
28              System.out.println("3. Update Mahasiswa");
29              System.out.println("4. Hapus Mahasiswa");
30          }
31      }
32  }
```

```
...4] ModelMahasiswa.java x MahasiswaDAO.java x MahasiswaController.java x MahasiswaView.java x
Source History
22  while(true) {
23      System.out.println("Menu:");
24      System.out.println("1. Tampilkan Semua Mahasiswa");
25      System.out.println("2. Tambah Mahasiswa");
26      System.out.println("3. Update Mahasiswa");
27      System.out.println("4. Hapus Mahasiswa");
28      System.out.println("5. Cek Koneksi Database");
29      System.out.println("6. Keluar");
30      System.out.println("PILIH OPSI: ");
31      pilihan = scanner.nextInt();
32      scanner.nextLine();
33
34      switch (pilihan){
35          case 1:
36              mahasiswaController.displayAllMahasiswa();
37              break;
38
39          case 2:
40              // tambah mhs
41              System.out.println("Masukkan NPM: ");
42              String npm = scanner.next();
43              System.out.println("Masukkan Nama: ");
44              String nama = scanner.next();
45              System.out.println("Masukkan Semester: ");
46              int semester = scanner.nextInt();
47              System.out.println("Masukkan IPK: ");
48              float ipk = scanner.nextFloat();
49          }
50      }
51  }
```

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Source History
49      System.out.println(npm + nama + semester + ipk);
50
51      mahasiswaController.addMahasiswa(npm, nama, semester, ipk);
52      break;
53
54      case 3:
55          System.out.print("Masukkan ID mahasiswa: ");
56          int id = scanner.nextInt();
57          scanner.nextLine();
58
59          System.out.println("Masukkan NPM: ");
60          String npmBaru = scanner.next();
61          System.out.println("Masukkan Nama: ");
62          String namaBaru = scanner.next();
63          System.out.println("Masukkan Semester: ");
64          int semesterBaru = scanner.nextInt();
65          System.out.println("Masukkan IPK: ");
66          float ipkBaru = scanner.nextFloat();
67
68          mahasiswaController.updateMahasiswa(id, npmBaru, namaBaru, semesterBaru, ipkBaru);
69          break;
70
71      case 4:
72          System.out.print("Masukkan ID Mahasiswa: ");
73          int idHapus = scanner.nextInt();
74          mahasiswaController.deleteMahasiswa(idHapus);
75
76
77
78
79
80
81
82
83      System.out.println("Program Selesai.");
84      return;
85
86      default:
87          System.out.println("Input Tidak Valid");
88      }
89  }
90 }
91 }
```