

Quiz 2 OOP



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2I Class

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65141

Class Mahasiswa

```
1  package oop_java.week13_quiz;
2
3  public class Mahasiswa {
4      private String nama, nim;
5      private int[] nilai;
6
7      public Mahasiswa(String nama, String nim, int[] nilai) {
8          this.nama = nama;
9          this.nim = nim;
10         this.nilai = nilai;
11     }
12
13     public double hitung_ipk() {
14         double total = 0;
15         // hitung total nilai
16         for (int i = 0; i < nilai.length; i++) {
17             total += nilai[i];
18         }
19         return total / nilai.length;
20     }
21
22     public double hitung_ipk(int[] nilai_sks) {
23         // buat variabel dan inisialisasi nilai awal
24         double total = 0;
25         int total_sks = 0;
26         for (int i = 0; i < nilai.length; i++) {
27             // kalikan nilai dengan bobot sks
28             total += nilai[i] * nilai_sks[i];
29             total_sks += nilai_sks[i];
30         }
31         return total / total_sks;
32     }
33
34     public String getNama() {
35         return nama;
36     }
37
38     public String getNim() {
39         return nim;
40     }
41
42     public int[] getNilai() {
43         return nilai;
44     }
45 }
46
```

Class MataKuliah

```
1  package oop_java.week13_quiz;
2
3  public class MataKuliah {
4      private String nama_matakuliah;
5      private int sks;
6      private int[] nilai_mahasiswa;
7
8      public MataKuliah(String nama_matakuliah, int sks, int[] nilai_mahasiswa) {
9          this.nama_matakuliah = nama_matakuliah;
10         this.sks = sks;
11         this.nilai_mahasiswa = nilai_mahasiswa;
12     }
13
14     public double hitung_bobot() {
15         double totalBobot = 0;
16         // hitung total nilai
17         for (int i = 0; i < nilai_mahasiswa.length; i++) {
18             totalBobot += nilai_mahasiswa[i];
19         }
20         return totalBobot / nilai_mahasiswa.length;
21     }
22
23     public double hitung_bobot(int bobot_mahasiswa) {
24         double totalBobot = 0;
25         int total_sks = 0;
26         for (int i = 0; i < nilai_mahasiswa.length; i++) {
27             // kalikan nilai dengan bobot sks
28             totalBobot += nilai_mahasiswa[i] * bobot_mahasiswa;
29             total_sks += bobot_mahasiswa;
30         }
31         return totalBobot / total_sks;
32     }
33
34     public String getNama_matakuliah() {
35         return nama_matakuliah;
36     }
37
38     public int getSks() {
39         return sks;
40     }
41
42     public int[] getNilai_mahasiswa() {
43         return nilai_mahasiswa;
44     }
45
46 }
```

Class Perwalian

```
1  package oop_java.week13_quiz;
2  import java.util.ArrayList;
3  import java.util.List;
4
5
6  public class Perwalian {
7      private List<Mahasiswa> mahasiswas;
8      private List<MataKuliah> matakuliahs;
9
10     public Perwalian() {
11         this.mahasiswas = new ArrayList<>();
12         this.matakuliahs = new ArrayList<>();
13     }
14
15     public void tambahMahasiswa(Mahasiswa mahasiswa) {
16         this.mahasiswas.add(mahasiswa);
17     }
18
19     public void tambahMataKuliah(MataKuliah mataKuliah) {
20         this.matakuliahs.add(mataKuliah);
21     }
22
23     public void tampilkanDaftarMahasiswa() {
24         System.out.println("Daftar Mahasiswa & Mata Kuliah");
25         // tampilkan daftar mahasiswa dan mata kuliah
26         for (int i = 0; i < mahasiswas.size(); i++) {
27             System.out.println("Mahasiswa: " + mahasiswas.get(i).getNama());
28             System.out.println("NIM: " + mahasiswas.get(i).getNim());
29             System.out.println("IPK: " + mahasiswas.get(i).hitung_ipk());
30             System.out.println("Mata Kuliah: " + matakuliahs.get(i).getNama_matakuliah());
31             System.out.println("SKS: " + matakuliahs.get(i).getSks());
32             System.out.println("Bobot: " + matakuliahs.get(i).hitung_bobot());
33             System.out.println();
34         }
35     }
36 }
```

Main

```
1 package oop_java.week13_quiz;
2
3 public class Main {
4     public static void main(String[] args) {
5         // buat objek mahasiswa
6         Mahasiswa mahasiswa1 = new Mahasiswa(nama:"Budi", nim:"123456789", new int[]{80, 90, 70});
7         Mahasiswa mahasiswa2 = new Mahasiswa(nama:"Andi", nim:"987654321", new int[]{90, 80, 70});
8         // buat objek mata kuliah
9         MataKuliah mataKuliah1 = new MataKuliah(nama_matakuliah:"Pemrograman Berorientasi Objek", sks:3, new int[]{80, 90, 70});
10        MataKuliah mataKuliah2 = new MataKuliah(nama_matakuliah:"Pemrograman Berbasis Web", sks:3, new int[]{90, 80, 70});
11        // buat objek perwalian
12        Perwalian perwalian = new Perwalian();
13        perwalian.tambahMahasiswa(mahasiswa1);
14        perwalian.tambahMahasiswa(mahasiswa2);
15        perwalian.tambahMataKuliah(mataKuliah1);
16        perwalian.tambahMataKuliah(mataKuliah2);
17        // tampilkan daftar mahasiswa dan mata kuliah
18        perwalian.tampilkanDaftarMahasiswa();
19    }
20 }
```

Output

```
Daftar Mahasiswa & Mata Kuliah
Mahasiswa: Budi
NIM: 123456789
IPK: 80.0
Mata Kuliah: Pemrograman Berorientasi Objek
SKS: 3
Bobot: 80.0

Mahasiswa: Andi
NIM: 987654321
IPK: 80.0
Mata Kuliah: Pemrograman Berbasis Web
SKS: 3
Bobot: 80.0
```