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Nrp : 223040141

[https://github.com/kamil026/PBO\\_223040141/tree/main/Tugas7](https://github.com/kamil026/PBO_223040141/tree/main/Tugas7)

```
1 package Tugas7;
2
3 public class MataKuliah {
4
5     private String kode;
6     private String nama;
7     private String index;
8     private int sks;
9     private double nilai;
10    // konstruktor
11    public MataKuliah(String kode, String nama, String index, int sks, double nilai) {
12        super();
13        this.kode = kode;
14        this.nama = nama;
15        this.index = index;
16        this.sks = sks;
17        this.nilai = nilai;
18    }
19
20    public double nilaiIndex() {
21        // Berdasarkan index matakuliah
22        // A = 4, AB = 3.5, B, 3, BC=2.5, C=2, D=1, E=0
23        double nilaiNumerik = 0;
24        switch (index) {
25            case "A":
26                nilaiNumerik = 4.0;
27                break;
28            case "AB":
29                nilaiNumerik = 3.5;
30                break;
31            case "B":
32                nilaiNumerik = 3.0;
33
34                break;
35            case "BC":
36                nilaiNumerik = 2.5;
37                break;
38            case "C":
39                nilaiNumerik = 2.0;
40                break;
41            case "D":
42                nilaiNumerik = 1.0;
43                break;
44            case "E":
45                nilaiNumerik = 0;
46                break;
47            default:
48                System.out.println("Nilai tidak valid");
49        }
50        return nilaiNumerik;
51    }
52    public String display() {
53        return kode + " - " + nama + " - " + index;
54    }
55    public int getSks() {
56        return sks;
57    }
58    public double getNilai() {
59        return nilai;
60    }
61
62 }
63
```

```
1 package Tugas7;
2
3 public class Mahasiswa {
4     private String NRP;
5     private String nama;
6
7     public Mahasiswa() {
8
9     }
10    public Mahasiswa(String nRP, String nama) {
11        super();
12        NRP = nRP;
13        this.nama = nama;
14    }
15    public String display() {
16        return "NRP : " + NRP + ", Nama:" + nama;
17    }
18    public String getNRP() {
19        return NRP;
20    }
21    public void setNRP(String nRP) {
22        NRP = nRP;
23    }
24    public String getNama() {
25        return nama;
26    }
27    public void setNama(String nama) {
28        this.nama = nama;
29    }
30
31 }
32
```

```

1 package Tugas7;
2 import java.util.ArrayList;
3 import java.util.List;
4 public class KartuHasilStudi {
5     private String semester;
6     private double ips;
7     private List<MataKuliah> daftarMatakuliah;
8
9     public KartuHasilStudi(String semester) {
10         this.semester = semester;
11         this.daftarMatakuliah = new ArrayList<>();
12     }
13     public void addMatakuliah(MataKuliah matakuliah) {
14         daftarMatakuliah.add(matakuliah);
15     }
16     public String display() {
17         StringBuilder sb = new StringBuilder();
18         for(MataKuliah mk : daftarMatakuliah) {
19             sb.append(mk.display());
20             sb.append("\n");
21         }
22         return sb.toString();
23     }
24     public void hitungIPS() {
25         double totalSKS = 0;
26         double totalNilai = 0;
27
28         for (MataKuliah mk : daftarMatakuliah) {
29             totalSKS += mk.getSks();
30             totalNilai += mk.getNilai() * mk.getSks(); // Mengalikan nilai dengan jumlah SKS
31         }
32
33         if (totalSKS > 0) {
34             ips = totalNilai / totalSKS; // Menghitung IPS
35         } else {
36             ips = 0; // Jika tidak ada SKS, maka IPS dianggap 0
37         }
38     }
39
40     public String getSemester() {
41         return semester;
42     }
43
44     public void setSemester(String semester) {
45         this.semester = semester;
46     }
47     public double getIps() {
48         return ips;
49     }
50     public void setIps(double ips) {
51         this.ips = ips;
52     }
53     public List<MataKuliah> getDaftarMatakuliah() {
54         return daftarMatakuliah;
55     }
56     public void setDaftarMatakuliah(List<MataKuliah> daftarMatakuliah) {
57         this.daftarMatakuliah = daftarMatakuliah;
58     }
59
60 }
61

```

```

1 package Tugas7;
2 import java.util.ArrayList;
3 import java.util.Date;
4 import java.util.List;
5 public class TranskripNilai {
6     private Date tglCetak;
7     private double ipk = 0.0;
8     private List<KartuHasilStudi>kartuHasilStudi;
9     private Mahasiswa mahasiswa;
10
11     public TranskripNilai(Mahasiswa mahasiswa) {
12         super();
13         this.mahasiswa = mahasiswa;
14         kartuHasilStudi = new ArrayList<KartuHasilStudi>();
15         tglCetak = new Date();
16     }
17     public void hitungIPK() {
18         double totalIpk = 0.0;
19         int totalSemester = 0;
20
21         for (KartuHasilStudi khs : kartuHasilStudi) {
22             khs.hitungIPS(); // Hitung IPS untuk setiap KHS
23             totalIpk += khs.getIps(); // Tambahkan IPS ke total IPK
24             totalSemester++; // Tambahkan jumlah semester
25         }
26
27         if (totalSemester > 0) {
28             ipk = totalIpk / totalSemester; // Hitung IPK
29         } else {
30             ipk = 0.0; // Jika tidak ada semester, maka IPK dianggap 0
31         }
32     }

```

```

34     public void addKHS(KartuHasilStudi khs) {
35         kartuHasilStudi.add(khs);
36     }
37     public void display() {
38         System.out.println(mahasiswa.display());
39         System.out.println("Tanggal Cetak: " + tglCetak.toString());
40         System.out.println("IPK: " + ipk);
41         for (KartuHasilStudi khs : kartuHasilStudi) {
42             System.out.println(khs.display());
43         }
44     }
45     /*Setter getter*/
46     public Date getTglCetak() {
47         return tglCetak;
48     }
49     public void setTglCetak(Date tglCetak) {
50         this.tglCetak = tglCetak;
51     }
52     public double getIpk() {
53         return ipk;
54     }
55     public void setIpk(double ipk) {
56         this.ipk = ipk;
57     }
58     public List<KartuHasilStudi> getKartuHasilStudi() {
59         return kartuHasilStudi;
60     }
61     public void setKartuHasilStudi(List<KartuHasilStudi> kartuHasilStudi) {
62         this.kartuHasilStudi = kartuHasilStudi;
63     }
64     public Mahasiswa getMahasiswa() {
65         return mahasiswa;
66     }
67     public void setMahasiswa(Mahasiswa mahasiswa) {
68         this.mahasiswa = mahasiswa;
69     }
70 }

```

```

1 package Tugas7;
2
3 public class TranskripNilaiMain {
4     public static void main(String[] args) {
5         //create objek matakuliah
6         MataKuliah mk1 = new MataKuliah("001","Algoritma Pemrograman 1","A",3,4);
7         MataKuliah mk2 = new MataKuliah("002","Algoritma Pemrograman 2","BC",3,2.5);
8         MataKuliah mk3 = new MataKuliah("003","Pemrograman Berorientasi Objek","B",3,3);
9
10        //create objek KHS
11        KartuHasilStudi khs = new KartuHasilStudi("20222");
12        khs.addMatakuliah(mk1);
13        khs.addMatakuliah(mk2);
14        khs.addMatakuliah(mk3);
15
16        //create objek mahasiswa
17        Mahasiswa mhs = new Mahasiswa("303040001","Jhon");
18
19        //create objek TranskripNilai
20        TranskripNilai transkrip = new TranskripNilai(mhs);
21        transkrip.addKHS(khs);
22        transkrip.hitungIPK();
23        transkrip.display();
24    }
25 }

```

```

Console ×
<terminated> TranskripNilaiMain [Java Application] C:\Users\KAMIL\OneDrive\Documents\perkuliahan semester 2\eclipse\plugins\org.eclipse.justj.openjdk
NRP : 303040001, Nama:Jhon
Tanggal Cetak: Thu Mar 21 12:55:11 WIB 2024
IPK: 3.1666666666666665
001 - Algoritma Pemrograman 1 - A
002 - Algoritma Pemrograman 2 - BC
003 - Pemrograman Berorientasi Objek - B

```