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- Menggunakan 2 library : iostream dan conio.h
- Deklarasi data nilai siswa dengan struct

```
1 #include <iostream>
2 #include <conio.h>
3 using namespace std;
4
5 struct data{ //deklarasi dengan struct
6     float totalsem3,totalsem4,totalsem5, ratana; //total persemester, dan rata2 nilai akhir
7     float bindosem3,bingsem3,mtksem3,fsksem3,kimiasem3,biose3, ratasem3; //semester 3
8     float bindosem4,bingsem4,mtksem4,fsksem4,kimiasem4,biose4, ratasem4; //semester 4
9     float bindosem5,bingsem5,mtksem5,fsksem5,kimiasem5,biose5, ratasem5; //semester 5
10    float nrbindo,nrbing,nrmtk,nrfsk,nrkimia,nrbio; //nilai rata2
11    float unbindo,unbing,unmtk,unfsk,unkimia,unbio; //nilai un
12    float usbindo,usbing,usmtk,usfsk,uskimia,usbio; //nilai ujian sekolah
13    float nsbindo,nsbing,nsmtk,nsfsk,nskimia,nsbio; //ns
14    float nabindo,nabing,namtk,nafsk,nakimia,nabio; //nilai akhir
15    float totalbindo,totalbing,totalmtk,totalfsk,totalkimia,totalbio; //total utk menghitung rata
16 };
17
```

- Boolean untuk menentukan lulus
- Deklarasi, dan menginput jumlah siswa
- Deklarasi array siswa
- Menampilkan nama, nim dan kelompok

```
17 bool lulus; //boolean lulus
18
19 int main() {
20
21     int jumlah;
22     data siswa[100];
23     cout<<"=====\n";
24     cout<<"Nama      = Abdul Rasyid Yuwana   |"<<endl;
25     cout<<"NIM       = 20170801215       |"<<endl;
26     cout<<"Kelompok = 1           |";
27     cout<<"\n=====\n";
28     cout<<"\nmasukkan jumlah siswa : ";
29     cin>>jumlah;
30     cout<<endl;

```

- Perulangan untuk menginput nilai semester 3,4,5, ujian sekolah, ujian nasional

```

32     for (int i=1;i<=jumlah;i++) {
33         system("cls");
34         //input nilai sem3-sem5
35         cout<<"=====Masukkan nilai semester 3(1-10)=====\\n\\n";
36         cout<<"Masukkan nilai bahasa indonesia semester 3 : ";
37         cin>>siswa[i].bindosem3;
38         cout<<"Masukkan nilai bahasa inggris semester 3 : ";
39         cin>>siswa[i].bingsem3;
40         cout<<"Masukkan nilai matematika semester 3 : ";
41         cin>>siswa[i].mtksem3;
42         cout<<"Masukkan nilai fisika semester 3 : ";
43         cin>>siswa[i].fsksem3;
44         cout<<"Masukkan nilai kimia semester 3 : ";
45         cin>>siswa[i].kimiasem3;
46         cout<<"Masukkan nilai biologi semester 3 : ";
47         cin>>siswa[i].biosem3;
48         cout<<"=====Masukkan nilai semester 4(1-10)=====\\n\\n";
49         cout<<"Masukkan nilai bahasa indonesia semester 4 : ";
50         cin>>siswa[i].bindosem4;
51         cout<<"Masukkan nilai bahasa inggris semester 4 : ";
52         cin>>siswa[i].bingsem4;
53         cout<<"Masukkan nilai matematika semester 4 : ";
54         cin>>siswa[i].mtksem4;
55         cout<<"Masukkan nilai fisika semester 4 : ";
56         cin>>siswa[i].fsksem4;
57         cout<<"Masukkan nilai kimia semester 4 : ";
58         cin>>siswa[i].kimiasem4;
59         cout<<"Masukkan nilai biologi semester 4 : ";
60         cin>>siswa[i].biosem4;

61         cout<<"=====Masukkan nilai semester 5(1-10)=====\\n\\n";
62         cout<<"Masukkan nilai bahasa indonesia semester 5 : ";
63         cin>>siswa[i].bindosem5;
64         cout<<"Masukkan nilai bahasa inggris semester 5 : ";
65         cin>>siswa[i].bingsem5;
66         cout<<"Masukkan nilai matematika semester 5 : ";
67         cin>>siswa[i].mtksem5;
68         cout<<"Masukkan nilai fisika semester 5 : ";
69         cin>>siswa[i].fsksem5;
70         cout<<"Masukkan nilai kimia semester 5 : ";
71         cin>>siswa[i].kimiasem5;
72         cout<<"Masukkan nilai biologi semester 5 : ";
73         cin>>siswa[i].biosem5;
74         //input nilai ujian sekolah
75         cout<<"=====Masukkan nilai Ujian Sekolah(1-10)=====\\n\\n";
76         cout<<"Masukkan nilai ujian sekolah bahasa indonesia : ";
77         cin>>siswa[i].usbindo;
78         cout<<"Masukkan nilai ujian sekolah bahasa inggris : ";
79         cin>>siswa[i].usbing;
80         cout<<"Masukkan nilai ujian sekolah matematika : ";
81         cin>>siswa[i].usmtk;
82         cout<<"Masukkan nilai ujian sekolah fisika : ";
83         cin>>siswa[i].usfsk;
84         cout<<"Masukkan nilai ujian sekolah kimia : ";
85         cin>>siswa[i].uskimia;
86         cout<<"Masukkan nilai ujian sekolah biologi : ";
87         cin>>siswa[i].usbio;

88         //input nilai ujian nasional
89         cout<<"=====Masukkan nilai Ujian Nasional(1-10)=====\\n\\n";
90         cout<<"Masukkan nilai ujian nasional bahasa indonesia : ";
91         cin>>siswa[i].unbindo;
92         cout<<"Masukkan nilai ujian nasional bahasa inggris : ";
93         cin>>siswa[i].unbing;
94         cout<<"Masukkan nilai ujian nasional matematika : ";
95         cin>>siswa[i].unmtk;
96         cout<<"Masukkan nilai ujian nasional fisika : ";
97         cin>>siswa[i].unfsk;
98         cout<<"Masukkan nilai ujian nasional kimia : ";
99         cin>>siswa[i].unkimia;
100        cout<<"Masukkan nilai ujian nasional biologi : ";
101        cin>>siswa[i].unbio;

```

- Penghitungan total, rata rata, ns, nilai akhir

```

102 //total, rata rata, ns, na
103 siswa[i].totalsem3=siswa[i].bindosem3+siswa[i].bingsem3+siswa[i].mtksem3+siswa[i].fsksem3+siswa[i].kimiase3+siswa[i].biosem3; //total nilai sem3
104 siswa[i].totalsem4=siswa[i].bindosem4+siswa[i].bingsem4+siswa[i].mtksem4+siswa[i].fsksem4+siswa[i].kimiase4+siswa[i].biosem4; //total nilai sem4
105 siswa[i].totalsem5=siswa[i].bindosem5+siswa[i].bingsem5+siswa[i].mtksem5+siswa[i].fsksem5+siswa[i].kimiase5+siswa[i].biosem5; //total nilai sem5
106
107 siswa[i].totalbindo=siswa[i].bindosem3+siswa[i].bindosem4+siswa[i].bindosem5; // jumlah nilai bindo
108 siswa[i].totalbing=siswa[i].bingsem3+siswa[i].bingsem4+siswa[i].bingsem5; //jumlah nilai bing
109 siswa[i].totalmtk=siswa[i].mtksem3+siswa[i].mtksem4+siswa[i].mtksem5; //jumlah nilai mtk
110 siswa[i].totalfsk=siswa[i].fsksem3+siswa[i].fsksem4+siswa[i].fsksem5; //jumlah nilai fisika
111 siswa[i].totalkimia=siswa[i].kimiase3+siswa[i].kimiase4+siswa[i].kimiase5; //jumlah nilai kimia
112 siswa[i].totalbio=siswa[i].biosem3+siswa[i].biosem4+siswa[i].biosem5; //jumlah nilai biologi
113
114 siswa[i].nrbindo=siswa[i].totalbindo/3; //rata rata bahasa indonesia
115 siswa[i].nrbing=siswa[i].totalbing/3; //rata rata bahasa inggris
116 siswa[i].nrmtk=siswa[i].totalmtk/3; //rata rata matematika
117 siswa[i].nrfsk=siswa[i].totalfsk/3; //rata rata fisika
118 siswa[i].nrkimia=siswa[i].totalkimia/3; //rata rata kimia
119 siswa[i].nrbio=siswa[i].totalbio/3; //rata rata biologi
120 siswa[i].ratasem3=siswa[i].totalsem3/6; //rata rata semester 3
121 siswa[i].ratasem4=siswa[i].totalsem4/6; //rata rata semester 4
122 siswa[i].ratasem5=siswa[i].totalsem5/6; //rata rata semester 5

```

```

123 //NS
124 siswa[i].nsbindo=(0.7*siswa[i].nrbindo)+(0.3*siswa[i].usbindo); //ns bindo
125 siswa[i].nsbing=(0.7*siswa[i].nrbing)+(0.3*siswa[i].usbinding); //ns bing
126 siswa[i].nsmtk=(0.7*siswa[i].nrmtk)+(0.3*siswa[i].usmtk); //ns mtk
127 siswa[i].nsfsk=(0.7*siswa[i].nrfsk)+(0.3*siswa[i].usfsk); //ns fisika
128 siswa[i].nskimia=(0.7*siswa[i].nrkimia)+(0.3*siswa[i].uskimia); //ns kimia
129 siswa[i].nsbio=(0.7*siswa[i].nrbio)+(0.3*siswa[i].usbio); //ns biologi
130 //Nilai akhir
131 siswa[i].nabindo=(0.4*siswa[i].nsbindo)+(0.6*siswa[i].unbindo); //na bindo
132 siswa[i].nabing=(0.4*siswa[i].nsbing)+(0.6*siswa[i].unbing); //na bing
133 siswa[i].namtk=(0.4*siswa[i].nsmtk)+(0.6*siswa[i].unmtk); //na mtk
134 siswa[i].nafsk=(0.4*siswa[i].nsfsk)+(0.6*siswa[i].unfsk); //na fisika
135 siswa[i].nakimia=(0.4*siswa[i].nskimia)+(0.6*siswa[i].unkimia); //na kimia
136 siswa[i].nabio=(0.4*siswa[i].nsbio)+(0.6*siswa[i].unbio); //na biologi
137 siswa[i].ratana=(siswa[i].nsbindo+siswa[i].nakimia+siswa[i].nafsk+siswa[i].namtk+siswa[i].nabing+siswa[i].nabindo)/6; //rata rata nilai akhir

```

- Perulangan untuk menampilkan nilai nilai
- Menentukan kelulusan dengan if

```

139 //logika lulus/tidak
140 system("cls");
141 for(int i=1;i<=jumlah;i++){
142     if(siswa[i].nabindo>=4&&siswa[i].nabing>=4&&siswa[i].namtk>=4&&siswa[i].nafsk>=4&&siswa[i].nakimia>=4&&siswa[i].nabio>=4&&siswa[i].ratana>=5.5){
143         lulus=true;
144     }
145     cout<<"=====Siswa ke-"<<i<<"===== "<<endl;
146     //mendisplay Nilai bahasa indonesia
147     cout<<"\nNilai bahasa indonesia =";
148     cout<<"\nSemester 3 = "<<siswa[i].bindosem3;
149     cout<<"\nSemester 4 = "<<siswa[i].bindosem4;
150     cout<<"\nSemester 5 = "<<siswa[i].bindosem5;
151     cout<<"\nNilai rata-rata = "<<siswa[i].nrbindo;
152     cout<<"\nNilai Ujian Sekolah = "<<siswa[i].usbindo;
153     cout<<"\nNS = "<<siswa[i].nsbindo;
154     cout<<"\nNilai UN = "<<siswa[i].unbindo;
155     cout<<"\nNilai Akhir = "<<siswa[i].nabindo;
156     cout<<"\n_____ \n";
157     //mendisplay Nilai bahasa inggris
158     cout<<"\nNilai bahasa inggris =";
159     cout<<"\nSemester 3 = "<<siswa[i].bingsem3;
160     cout<<"\nSemester 4 = "<<siswa[i].bingsem4;
161     cout<<"\nSemester 5 = "<<siswa[i].bingsem5;
162     cout<<"\nNilai rata-rata = "<<siswa[i].nrbing;
163     cout<<"\nNilai Ujian Sekolah = "<<siswa[i].usbing;
164     cout<<"\nNS = "<<siswa[i].nsbing;
165     cout<<"\nNilai UN = "<<siswa[i].unbing;
166     cout<<"\nNilai Akhir = "<<siswa[i].nabing;
167     cout<<"\n_____ \n";

```

```

168 //mendisplay Nilai matematika
169 cout<<"\nNilai matematika =";
170 cout<<"\nSemester 3 = "<<siswa[i].mtksem3;
171 cout<<"\nSemester 4 = "<<siswa[i].mtksem4;
172 cout<<"\nSemester 5 = "<<siswa[i].mtksem5;
173 cout<<"\nNilai rata-rata = "<<siswa[i].nrmTk;
174 cout<<"\nNilai Ujian Sekolah = "<<siswa[i].usmtk;
175 cout<<"\nNS = "<<siswa[i].nsmTk;
176 cout<<"\nNilai UN = "<<siswa[i].unmtk;
177 cout<<"\nNilai Akhir = "<<siswa[i].namTk;
178 cout<<"\n_____ \n";
179 //mendisplay Nilai fisika
180 cout<<"\nNilai fisika =";
181 cout<<"\nSemester 3 = "<<siswa[i].fsksem3;
182 cout<<"\nSemester 4 = "<<siswa[i].fsksem4;
183 cout<<"\nSemester 5 = "<<siswa[i].fsksem5;
184 cout<<"\nNilai rata-rata = "<<siswa[i].nrfsk;
185 cout<<"\nNilai Ujian Sekolah = "<<siswa[i].usfsk;
186 cout<<"\nNS = "<<siswa[i].nsfsk;
187 cout<<"\nNilai UN = "<<siswa[i].unfsk;
188 cout<<"\nNilai Akhir = "<<siswa[i].nafsk;
189 cout<<"\n_____ \n";

```

```

190 //mendisplay Nilai kimia
191 cout<<"\nNilai kimia =";
192 cout<<"\nSemester 3 = "<<siswa[i].kimiase3;
193 cout<<"\nSemester 4 = "<<siswa[i].kimiase4;
194 cout<<"\nSemester 5 = "<<siswa[i].kimiase5;
195 cout<<"\nNilai rata-rata = "<<siswa[i].nrkimia;
196 cout<<"\nNilai Ujian Sekolah = "<<siswa[i].uskimia;
197 cout<<"\nNS = "<<siswa[i].nskimia;
198 cout<<"\nNilai UN = "<<siswa[i].unkimia;
199 cout<<"\nNilai Akhir = "<<siswa[i].nakimia;
200 cout<<"\n\n";
201 //mendisplay Nilai biologi
202 cout<<"\nNilai biologi =";
203 cout<<"\nSemester 3 = "<<siswa[i].biosem3;
204 cout<<"\nSemester 4 = "<<siswa[i].biosem4;
205 cout<<"\nSemester 5 = "<<siswa[i].biosem5;
206 cout<<"\nNilai rata-rata = "<<siswa[i].nrbio;
207 cout<<"\nNilai Ujian Sekolah = "<<siswa[i].usbio;
208 cout<<"\nNS = "<<siswa[i].nsbio;
209 cout<<"\nNilai UN = "<<siswa[i].unbio;
210 cout<<"\nNilai Akhir = "<<siswa[i].nabio;
211 cout<<"\n\n";

```

- Menampilkan rata rata
- Menentukan kelulusan jika Boolean lulus = true

```

212 cout<<"Rata-rata\n\n";
213 cout<<"Semester 3 = ";
214 cout<<siswa[i].ratase3;
215 cout<<"\nSemester 4 = ";
216 cout<<siswa[i].ratase4;
217 cout<<"\nSemester 5 = ";
218 cout<<siswa[i].ratase5;
219 cout<<"\nNilai Akhir = ";
220 cout<<siswa[i].ratana;
221 if(lulus==true){
222     cout<<"\n\n=====LULUS=====\\n";
223 }
224 if(lulus!=true){
225     cout<<"\n\n=====TIDAK LULUS=====\\n";
226 }
227 }
228
229
230 getch();
231 }

```

- Menginput jumlah siswa

```
=====
Nama      = Abdul Rasyid Yuwana |
NIM       = 20170801215         |
Kelompok = 1                   |
=====

masukkan jumlah siswa : _
```

- Menginput nilai

```
=====Masukkan nilai semester 3(1-10)=====

Masukkan nilai bahasa indonesia semester 3 : _
```

- Menampilkan nilai, dan kelulusan

```
=====Siswa ke-1=====

Nilai bahasa indonesia =
Semester 3 = 4
Semester 4 = 9
Semester 5 = 9
Nilai rata-rata = 7.33333
Nilai Ujian Sekolah = 9
NS = 7.83333
Nilai UN = 9
Nilai Akhir = 8.53333

Nilai bahasa inggris =
Semester 3 = 44
Semester 4 = 9
Semester 5 = 9
Nilai rata-rata = 20.6667
Nilai Ujian Sekolah = 9
NS = 17.1667
Nilai UN = 9
Nilai Akhir = 12.2667

Nilai matematika =
Semester 3 = 9
Semester 4 = 9
Semester 5 = 9
Nilai rata-rata = 9
Nilai Ujian Sekolah = 9
Semester 4 = 9
Semester 5 = 9
Nilai rata-rata = 9
Nilai Ujian Sekolah = 9
NS = 9
Nilai UN = 9
Nilai Akhir = 9

Nilai biologi =
Semester 3 = 9
Semester 4 = 9
Semester 5 = 9
Nilai rata-rata = 9
Nilai Ujian Sekolah = 9
NS = 9
Nilai UN = 9
Nilai Akhir = 9

Rata-rata

Semester 3 = 14
Semester 4 = 9
Semester 5 = 9
Nilai Akhir = 9.46667

=====LULUS=====
```