Pertemuan 6


```cpp
// Nanang Tri Nur Wicaksono
// 231011700253

#include<iostream>
#include<iomanip>
#include <sstream>

using namespace std;

//function cek panjang karakter di tipe data integer
int count_numbers ( int num) {
  int count =0;
  while (num !=0) {
    count++;
    num/=10;
  }
  return count;
}

int count_double (double num){
        stringstream ss;
  ss << num;
  string nilaiString = ss.str();
  return nilaiString.length();
}

int main(){
```

```cpp
//variable
string nim,nama,grade,sks,mata_kuliah;
int hadir, tugas, UTS, UAS;
double bHadir, bTugas, bUTS, bUAS, nilai;

//inputan
cout << "Masukkan Nama Mata Kuliah : ";
cin >> mata_kuliah;
cout << "Masukkan SKS : ";
cin >> sks;
cout << "Masukkan Jumlah Kehadiran : ";
cin >> hadir;
cout << "Masukkan Nilai Tugas : ";
cin >> tugas;
cout << "Masukkan Nilai UTS : ";
cin >> UTS;
cout << "Masukkan Nilai UAS : ";
cin >> UAS;

//hitung nilai
bHadir = (hadir / 14) * 10;
bTugas = tugas * 0.2;
bUTS = UTS * 0.3;
bUAS = UAS * 0.4;
//hasil hitung nidlai
nilai = bHadir + bTugas + bUTS + bUAS;

//cek nilai
if(nilai >= 80)
        grade = 'A';
else if(nilai >= 70 && nilai < 80)
        grade = 'B';
else if(nilai >= 60 && nilai < 70)
        grade = 'C';
else if(nilai >= 50 && nilai < 60)
        grade = 'D';
else{
        grade = 'E';
}

//array NIM & Nama
string arr_siswa[9][2] = {
        {"231011700253","Nanang Tri Nur Wicaksono"},
        {"231011700254","Dea Nandita"},
        {"231011700255","Henny Anastasia"},
        {"231011700256","Selvy Amelia"},
        {"231011700257","Eriska"},
        {"231011700258","Vincent"},
```

```cpp
                {"231011700259","Amelinda Dewi P"},
                {"231011700260","William"},
                {"231011700261","Felicia"},
        };

        //cek panjang karakter dari tipe data string
        int length = sizeof(arr_siswa) / sizeof(arr_siswa[0]);

        cout << "------------------------------------------------------------------------------------------------" << endl <<
endl;
        //output
        cout << "Nama Mata Kuliah"<< setw(1) << " : " << mata_kuliah << endl;
        cout << "SKS" << setw(16) << " : " << sks << endl;
        cout << "------------------------------------------------------------------------------------------------" << endl;
        cout << "NIM" << setw(nim.length()+12) << "|";
        cout << "NAMA" << setw(nama.length()+24) << "|";
        cout << "JML HADIR" << setw(3) << "|";
        cout << "TUGAS" << setw(3) << "|";
        cout << "UTS" << setw(3) << "|";
        cout << "UAS" << setw(3) << "|";
        cout << "NILAI ANGKA" << setw(3) << "|";
        cout << "GRADE" << setw(3) << "|"<<endl;
        cout << "------------------------------------------------------------------------------------------------" << endl;
        for(int i=0;i<length;i++){
                int n_hadir = 12 - count_numbers(hadir);
                int n_tugas = 8-count_numbers(tugas);
                int n_UTS = 6-count_numbers(UTS);
                int n_UAS = 6-count_numbers(UAS);
                int n_nilai = 14-count_double(nilai);

                cout << arr_siswa[i][0] << setw(arr_siswa[i][0].length()-9) << "|";
                cout << arr_siswa[i][1] << setw(28-arr_siswa[i][1].length()) << "|";
                cout << hadir << setw(n_hadir) << "|";
                cout << tugas << setw(n_tugas) << "|";
                cout << UTS << setw(n_UTS) << "|";
                cout << UAS << setw(n_UAS) << "|";
                cout << nilai << setw(n_nilai) << "|";
                cout << grade << setw(8-grade.length()) << "|"<<endl;
        }
        cout << "------------------------------------------------------------------------------------------" << endl;
        cout << "Nilai Rata - rata adalah " << nilai <<" dengan Grade : " << grade << endl;
        cout << "------------------------------------------------------------------------------------------" << endl;

}
```

```
C:\Users\Nanx\Documents\C++ Unpam\tugas aja.exe                                          —  □  ✕

Masukkan Nama Mata Kuliah : SI
Masukkan SKS : 2
Masukkan Jumlah Kehadiran : 14
Masukkan Nilai Tugas : 90
Masukkan Nilai UTS : 90
Masukkan Nilai UAS : 90
------------------------------------------------------------------------------------------

Nama Mata Kuliah : SI
SKS              : 2
------------------------------------------------------------------------------------------
NIM            |NAMA                     |JML HADIR  |TUGAS  |UTS  |UAS  |NILAI ANGKA  |GRADE   |
------------------------------------------------------------------------------------------
231011700253   |Nanang Tri Nur Wicaksono |14         |90     |90   |90   |91           |A       |
231011700254   |Dea Nandita              |14         |90     |90   |90   |91           |A       |
231011700255   |Henny Anastasia          |14         |90     |90   |90   |91           |A       |
231011700256   |Selvy Amelia             |14         |90     |90   |90   |91           |A       |
231011700257   |Eriska                   |14         |90     |90   |90   |91           |A       |
231011700258   |Vincent                  |14         |90     |90   |90   |91           |A       |
231011700259   |Amelinda Dewi P          |14         |90     |90   |90   |91           |A       |
231011700260   |William                  |14         |90     |90   |90   |91           |A       |
231011700261   |Felicia                  |14         |90     |90   |90   |91           |A       |
------------------------------------------------------------------------------------------
Nilai Rata - rata adalah 91 dengan Grade : A
------------------------------------------------------------------------------------------


--------------------------------
Process exited after 8.769 seconds with return value 0
Press any key to continue . . .
```