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//*****
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//  ANGGOTA :
//  ~ ANDREW VIRYA VICTORIO - 32200091
//  ~ VINCENT GEORGE CHANDRA - 32200083
//  ~ MATIAS INDRA PANGESTU - 32200095
//  ~ BENEDICTUS DIKHA ARIANDA - 32200092
//  ~ CALVIN OWEN SUSANTO - 32200084
//  TEKNIK INFORMATIKA A.T 2020: 1PTI1: PEMROGRAMAN DASAR (TIB21)
//  RABU -- 8 SKS
//  TUGAS KELOMPOK: MEMBUAT PROGRAM DENGAN 4 FUNGSI, 1 MAIN PROGRAM
//                  DENGAN 1 DIMENSI ARRAY DAN 2 DIMENSI ARRAY
//  PEMBAHASAN: 9
//  DOSEN: CHYQUITHA DANUPUTRI, S.KOM, M.KOM
//  TEMPO: 2020/10/21 ~~ 2020/10/28
//*****

#include <iostream>
#include <string>

using namespace std;

//VINCENT GEORGE CHANDRA - 32200083
struct indexStruct
{
    string name;
    int index;
};

//VINCENT GEORGE CHANDRA - 32200083
void printValidNames(string names[], int row) {

    cout << "Berikut adalah nama-nama yang terdaftar: " << endl;
    for (int i = 0; i < row; i++) {
        cout << names[i] << ", ";
    }
    cout << endl << endl;
}

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//ANDREW VIRYA VICTORIO - 32200091
string inputName()
{
    string username;

    cout << "Masukan nama mahasiswa : ";
    getline(cin, username);
    cout << "Nama username: " << username << endl;

    return username;
}

//BENEDICTUS DIKHA ARIANDA - 32200092
indexStruct getIndex(string username, string names[5], int row)
{
    int number = 0;
    indexStruct indStruct;

    for (int i = 0; i < row; i++) {
        if (username == names[i]) {
            cout << "Nama terdaftar" << endl;
            number = i;

            indStruct.name = username;
            indStruct.index = number;
            break;
        }
        else if (i == 4) {
            cout << "Nama tidak terdaftar, coba input ulang: " << endl;
            username = inputName();
            indStruct = getIndex(username, names, row); // recursive function
        }
    }

    return indStruct;
}

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//CALVIN OWEN SUSANTO - 32200084
float average(float tabelNilai[][5], int index, int col)
{
    float avg;
    float jumlah = 0;

    for (int i = 0; i < col; i++) {
        jumlah = jumlah + tabelNilai[index][i];
    }

    avg = jumlah / col;
    return avg;
}

//ANDREW VIRYA VICTORIO - 32200091
char getGrade(float avg)
{
    char grade = ' ';

    if (100 >= avg && avg >= 90) {
        grade = 'A';
    }
    else if (90 > avg && avg >= 80) {
        grade = 'B';
    }
    else if (80 > avg && avg >= 70) {
        grade = 'C';
    }
    else if (70 > avg && avg >= 60) {
        grade = 'D';
    }
    else if (60 > avg && avg >= 50) {
        grade = 'E';
    }
    else if (50 > avg) {
        grade = 'F';
    }
    else {
        cout << "Error!!";
    }

    return grade;
}

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}

//MATIAS INDRA PANGESTU - 32200095
void printNilai(string name, float avg, char grade)
{
    cout << "\nBerikut Nilai Dari :" << endl;

    cout << "Nama: " << name << '\n';
    cout << "Rata-rata: " << avg << '\n';
    cout << "Skor: " << grade << '\n';
}

//VINCENT GEORGE CHANDRA - 32200083
int main()
{
    const int row = 5;
    const int col = 5;

    string username;
    indexStruct indStruct;
    int index;
    float avg;
    char grade;

    string names[row] = { "James", "John", "Oliver", "Castor", "Matthew" };
    float tabelNilai[row][col] = { { 80, 60, 75, 45, 90 },
                                    { 90, 40, 40, 75, 80},
                                    { 45, 90, 100, 95, 80},
                                    { 80, 80, 80, 90, 80},
                                    { 72, 88, 45, 40, 90}
    };

    cout << "=====" << endl;
    cout << "Database nilai mahasiswa" << endl;
    cout << "=====" << endl;

    printValidNames(names, row);
    username = inputName();

    indStruct = getIndex(username, names, row);
    username = indStruct.name;

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    index = indStruct.index;

    avg = average(tabelNilai, index, col);
    grade = getGrade(avg);
    printNilai(username, avg, grade);

    return 0;
}
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Database nilai mahasiswa

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Berikut adalah nama-nama yang terdaftar:

James, John, Oliver, Castor, Matthew,

Masukan nama mahasiswa : John

Nama username: John

Nama terdaftar

Berikut Nilai Dari :

Nama: John

Rata-rata: 65

Skor: D