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| **Ex09-09.cpp:** *Dynamic Behavior with Pointer to Function* |
| **Line#** | **Code** |
| 12345678910111213141516171819202122232425262728293031323334353637383940414243444546474849505152535455565758596061626364656667686970 | #include <iostream>#include <string.h>using namespace std;#define NOI(\_arr) (sizeof(\_arr)/sizeof(\_arr[0]))#define showStudentRecords(\_students) \_showStudentRecords(\_students,NOI(\_students))#define sortStudents(\_students,\_criteria) \_sortStudents(\_students,NOI(\_students),\_criteria)struct STUDENT { const char\* name; unsigned char age; float cgpa;};typedef bool (\*COMPARER)(STUDENT lhs, STUDENT rhs);void \_showStudentRecords(STUDENT\* ps, unsigned n) { while (n--) { cout << "Age:" << (int)ps->age << '\t' << "CGPA:" << ps->cgpa << '\t' << "Name:" << ps->name << endl; ps++; } cout << endl;}static void \_sortStudents(STUDENT\* ps, int noi, COMPARER cmp) { for (int x = 0; x < (noi - 1); x++) { for (int y = 0; y < (noi - x - 1); y++) { if (cmp(ps[y], ps[y + 1])) { STUDENT s = ps[y]; ps[y] = ps[y + 1]; ps[y + 1] = s; } } }}static bool ByCGPA(STUDENT lhs, STUDENT rhs) { return lhs.cgpa > rhs.cgpa;}static bool ByAgeDesc(STUDENT lhs, STUDENT rhs) { return lhs.age < rhs.age;}static bool ByName(STUDENT lhs, STUDENT rhs) { return strcmp(lhs.name, rhs.name) > 0;}int main() { STUDENT class2020[] = { {"Fatimah", 19, 3.45F}, {"Zahran", 18, 3.25F}, {"Abu", 20, 3.65F}, {"Zawawi", 20, 3.75F}, {"Nizam", 19, 3.85F}, }; showStudentRecords(class2020); sortStudents(class2020, ByCGPA); showStudentRecords(class2020); sortStudents(class2020, ByAgeDesc); showStudentRecords(class2020); sortStudents(class2020, ByName); showStudentRecords(class2020); return 0;} |