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| **Ex09-09.cpp:** *Dynamic Behavior with Pointer to Function* | |
| **Line#** | **Code** |
| 1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29  30  31  32  33  34  35  36  37  38  39  40  41  42  43  44  45  46  47  48  49  50  51  52  53  54  55  56  57  58  59  60  61  62  63  64  65  66  67  68  69  70 | #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;  } |