

Exercise # 9 (28-11-2001)

Exercise 1:

Define the following terms:

- Record
- Field
- Dot notation
- Union

Exercise 2:

Given the declarations

```
typedef char CodeString[26];
```

```
enum StyleType {FORMAL, BRIEF};
```

```
struct RefType  
{  
    CodeString token[2000];  
    CodeString symbol[20];  
};
```

```
struct MapType  
{  
    CodeString mapCode;  
    StyleType style;  
    RefType chart;  
};
```

```
MapType guide[200];  
MapType aMap;  
RefType aRef;  
int count;  
CodeString aCode;
```

mark each of the following statements as valid or invalid. (Assume that all the valid variables have been assigned values.)

Statement	Valid	Invalid
if (aMap.style == BRIEF) count++;		
guide[1].chart.token[2] = aMap;		
guide[6].chart = aRef;		
strcpy(aMap.mapCode[0], aRef.token[0]);		
guide[100].chart.token[1][2] = aCode[2];		
guide[20].token[1] = aCode;		
if (guide[20].style == FORMAL) guide[20].chart.token[0][0] = 'A';		
aMap = guide[5];		
aMap.chart = aRef;		

Exercise 3:

Using the declarations in Exercise 2, write a single statement to do each of the following:

- Assign the value of the chart member of the seventy-first element of guide to the value aRef.
- Copy the first element of the token member of the chart member of the eighty-eighth element of guide to the variable aCode.
- Assign the value 'X' to the first element of the twenty-third element of the token member of the chart member of the ninety-fourth element of guide.
- Copy the fourth element of mapCode member of aMap to the ninth element of the twentieth element of the symbol member of aRef.

Program:

Write implementation of **insert sort** algorithm for sorting array of integers.
Read input values from file (kind of program as was on Monday lecture).

Modify sorting function to sort array of doubles.

Modify program to sort array of structures:

```
struct srecord {  
    char fname[50];    // Given name  
    char sname[50];   //Surname  
    int snumber;      //Student number  
};
```

Sorting parameter is student number.

Unsorted array of structures should be read from file, sorted array should be printed to screen in form:

name surname student number

Note: Use maximum size of array 100