

## Lab Assignment-6

### 6. User-Defined Structure Types

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- 6.1 Define a structure type **auto\_t** to represent an automobile. Include components for the make and model (strings), the odometer reading, the manufacture and purchase dates (use another user-defined type called **date\_t** ), and the gas tank (use a user-defined type **tank\_t** with components for tank capacity and current fuel level, giving both in gallons). Write and test I/O functions `scan_date`, `scan_tank`, `scan_auto`, `print_date`, `print_tank`, and `print_auto`. Here is a small data set to try:

```
Mercury Sable 99842 1 18 2001 5 30 1991 16 12.5
Mazda Navajo 123961 2 20 1993 6 15 1993 19.3 16.7
```

- 6.2 Define a structure type **element\_t** to represent one element from the periodic table of elements. Components should include the atomic number (an integer); the name, chemical symbol, and class (strings); a numeric field for the atomic weight; and a seven-element array of integers for the number of electrons in each shell. The following are the components of an **element\_t** structure for sodium.

```
11 Sodium Na alkali_metal 22.9898 2 8 1 0 0 0 0
Define and test I/O functions scan_element and print_element.
```