

9. *The Data Division (level numbers)*

It is possible to break up an item of data into parts and refer either to the whole item or to the individual parts - e.g. EMPLOYEE-DETAILS could consist of: EMPLOYEE-NAME, EMPLOYEE-ADDRESS and EMPLOYEE-WAGE.

This can be shown using *Level Numbers*. Level 01 is used for the overall name for the data. A higher level number is used for the parts.

e.g.

```
01  EMPLOYEE-DETAILS .
    05  EMPLOYEE-NAME      PIC X(20) .
    05  EMPLOYEE-ADDRESS  PIC X(40) .
    05  EMPLOYEE-WAGE     PIC 9(5) .
```

It is then possible - for example - to make the computer ask for the items individually (e.g. ACCEPT EMPLOYEE-NAME, ACCEPT EMPLOYEE-ADDRESS etc.) and then display all the data using one command DISPLAY EMPLOYEE-DETAILS.

Note

1. All the data items which form part of EMPLOYEE-DETAILS are at the same level as each other.
2. It is usual to number the levels - 01, 05, 10 etc (or sometimes 01,03,05, etc).
3. EMPLOYEE-DETAILS does not have a PIC statement, as it is described by the items which form its parts.

An item such as EMPLOYEE-DETAILS which is made up of several smaller items is known as a *Group Item*, while the individual items which are not broken up any further (e.g. EMPLOYEE-WAGE) are known as *Elementary Items*.

The smaller items of data may themselves be broken up into smaller parts if required - e.g. it might be useful to divide EMPLOYEE-NAME into SURNAME and FIRST-NAMES; this can be done by using another level number:

```
01  EMPLOYEE-DETAILS .
    05  EMPLOYEE-NAME .
        10  FIRST-NAMES    PIC X(10) .
        10  SURNAME        PIC X(10) .
    05  EMPLOYEE-ADDRESS  PIC X(40) .
    05  EMPLOYEE-WAGE     PIC 9(5) .
```

Exercise

Write a program to ask for a student's name, address, mark and grade - and then display all these details using a single DISPLAY command.