

79. *Sequential File Update*

One of the commonest problems to deal with is bringing a sequential file up-to-date with new information.

As it is not possible to add new information directly into the middle of a sequential file - it is necessary to create a new up-to-date file.

This is generally done by first putting all the changes into a *transaction file* (i.e. a file of changes) - sorting them into order and then using data from the old main file together with the transaction file to create a new main file.

For example the main student file for a class contains 7 students' records showing their names and ages:

```
ANDERSON  20
CHOWDURY  19
DAVIS      21
EDWARDS   17
OLADEDJU  18
ROBERTS   19
WILLIAMS  20
```

3 new students join the class, 2 leave and 1 is found to have his age recorded incorrectly - so a transaction file is created containing the name, age if necessary and transaction type (i.e. Insert in the file, Delete from the file or Amend a Record):

```
ROGERS     18   I
DAVIS      18   D
ANDREWS    19   I
WILLIAMS   18   D
CHENG      20   I
ROBERTS    20   A
```

This needs to be sorted into order - before it can be used to update the main file:

```
ANDREWS    19   I
CHENG      20   I
DAVIS      18   D
ROBERTS    20   A
ROGERS     18   I
WILLIAMS   18   D
```

Now the update program will use information from the main file together with the transaction file to create a new main file:

```
ANDERSON  20
ANDREWS    19
CHENG      20
CHOWDURY  19
EDWARDS   17
OLADEDJU  18
ROBERTS    20
ROGERS     18
```