Records - Reading

Arrays are very useful for storing information such as student scores with one **identifier**. There is a problem with arrays though. If we want to store both the student name and their score we would need to create one array to store all the scores and another array to store all the names.

Records are a **data structure** which allow us to group related information together so that it can be stored with one identifier. For example, records could be used to store information such as names of students in a school, products sold in a shop or information about books in a library.

For instance, if we wanted to store information about films, we could create the following record structure:

```
RECORD Film
      Title: String
      Certificate: String
      YearReleased: Integer
      Director: String
ENDRECORD
```

This record structure says that a Film will contain information on the title, certificate, year released and director. These items of information are called **fields**. The record structure also shows which **data types** will be used for each field.

To create a new instance of a record and add information to each field we would use the following code:

```
Film theFilm

theFilm.Title ← 'Star Wars'
theFilm.Certificate ← 'PG'
theFilm.YearReleased ← 1977
theFilm.Director ← 'George Lucas'
```

To access information stored in each field we use a dot, e.g. theFilm.Title
This is known as **dot notation**.

If we now needed to change the name of the film we could use the following line of code whilst leaving all the other information as it is:

```
theFilm.Title ← 'Star Wars: Episode IV – A New Hope'
```

To print the film name we could use the following line of code:

```
OUTPUT theFilm.Title
```

It is now possible to create an array which stores many different films. For instance, the following array will be able to store five films and has had one film added to the first **element** of the array. The film's title is then output to the screen:

```
films[0] ← theFilm
OUTPUT films[0].Title
```

It is also possible to output all film names in an array by using a **FOR loop**.

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