The script -- sometimes also called a storyboard -- is the basic building block of multimedia courseware development. The storyboard is a sequence of simply drawn pictures that visually depict a programme. In preparing interactive multimedia, normally the script is a storyboard. As such, both the terms -- script and storyboard -- are used in interchangeably, though they have their differences. The differences being that a script can also be written without visuals at all, whereas a storyboard is always a visually illustrated script. In this section we will describe a process for developing visual scripts or storyboard for multimedia. The script in practice becomes the blueprint for action. We present to you in this section a simple method for representing hypermedia-based information in 2-dimensional format.

Visual Thinking

Preparation for a multimedia script is a process of visual thinking or visualization. The dictum is -- “Think Visually”. In order to think visually, you need to create an overall conceptual design of the programme that you are planning to make. Creation of mind maps of the content area is a good first step. However, the words in the mind map must synchronize graphically. When you have an idea, consider relating it to some graphics and see how the idea can be represented graphically.

The process of visualization is basically section, creation, and editing of images into a meaningful sequence. In reality it takes a lot of practice to “see” the programmes to be developed successfully.

Scriptwriting Process

The script writing process has the following stages:

i) **Programme idea**: The programme idea needs to be discussed vis-à-vis the strength of multimedia. You must ask at this stage: why is it necessary to have a multimedia programme for this particular idea?

ii) **Programme brief**: At this stage, the programme idea needs to be expanded to include the title, target audience, objectives of the programme, content outline, etc. A rationale for the multimedia programme and project beneficiaries is useful, if included in the programme brief.
iii) **Research**: Planning and carrying out a thorough research on the topic of the programme idea and the target audience will be useful in designing the multimedia. Identifying relevant graphics content and experts on the programme will be useful to consult and select appropriate content.

iv) **Identify and select content elements**: Having done the research, it is appropriate to develop the best way or a sequence to deliver the message. Though multimedia provides the user with a hypermedia navigation opportunity, it is important to have a 'default' sequence. The content elements can be visualized in terms of text, audio, video, graphics animation, etc.

v) **Interface design and layout**: The interface design is one of the most creative stages of scripting for multimedia. Here, the look and feel of the programme needs to be decided. While deciding on this, it is important to keep in mind the target audience’s choice and the nature of the topic. Some of the possible layouts that can be prepared on the computer screen are given in fig. 1.

There can be so many ways of designing the interface depending on the creativity of the designer. However, it is essential to decide on one layout design in the beginning and stick to that for uniformity and also for the reason that the learners will not appreciate a different layout for all the different screens of the multimedia programme.

vi) **Preparing the storyboard**: The storyboard is a detailed shot-by-shot or screen-by-screen description of the programme on a sheet of paper or card. The storyboard forces the scriptwriter to think in terms of multiple media use in a multimedia programme. It is also a blueprint for action that can be given to a multimedia designer to execute as depicted in the storyboard. It allows working of different groups of people in the same project developing different components of it with similar design and compatibility. We will now present to you a systematic approach to prepare storyboard for multimedia.

*Though we recommend the systematic approach suggested in this section, it is important to say here that it is one of the many ways of preparing multimedia storyboard, and therefore, we would not like to be very prescriptive.*

### Storyboard Development

Before we start developing a storyboard, let us look at the various media components of a multimedia programme. The multimedia being an integrated platform it can deliver text, audio, visuals (video and graphics), animation and also the interactive feature, which is called navigation. So the storyboard should
represent all the five components in a 2-dimensional page or card. Since, multimedia is a hypermedia-based system, in figure 2 we represent five different cards placed one over another to depict a single screen/shot of a programme.

In figure 2, we see a screen shot that has some visible texts, graphic visual (which may be animated or static), and a navigation button. This frame might have some audio. But, in the storyboard here, it is not visible. When we separate the stack of cards, we will see how various components are depicted in each card. It is not necessary that all the components are present in every shots/screens. For example, figure 2 do not have a video. Interestingly, if you use a transparency sheet for each of these cards, the storyboard can be represented as one integrated screen shot. The illustration in figure 2 depicts that for each screen shot you need to prepare five cards.

Let us see each of the five cards.

**Text:** Write down the text that you expect to go in the screen. Suggest any specific design feature, including font size, style and colour that you need. Also suggest the placement of the text in small chunks of less than 200 words. This is important for presentation of the text in readable way. If it is essential to have more text, multiple shots can be used in continuation.

**Audio:** Audio is of three types -- Narration or Voice Over (VO), Music (M) and Sound Effects (SFX). In this card, you have to specify the types of audio to be used. As you can have two audio channels in one shot, it is important that you specify both audio channels. If required, use two cards for audio. Specify the kinds of music you want and the kind of sound effects required. If you have voice over, prepare the script of the voice and write it on the card.

**Visual:** A visual can be of two types -- static and motion, the former is called graphics and the later video. In the visual card you have to specify the kind of visual and its placement on the screen. Also it is very important to give a description of the graphics or video used. Then a description of what it will show, its purpose etc are required in the storyboard.

**Animation:** There are various kinds of animation activities. For example, you can animate a text or graphics or you can have a specialised animation programme itself in the multimedia lesson. The nature and purpose of animation needs to be explained in this card with specific movements (fade in, fade out; zoom in, zoom out, etc.) of different elements.

**Navigation:** The navigation is the mechanism through which a multimedia programme moves from one shot to another. Being hypermedia based, the
navigation actually enables the user of the multimedia to navigate from one shot of the multimedia to any other shot (provided it is designed so). The navigation plan can be designed through hyperlink from a word/ sentence / phrase or from or graphics or button for navigation. Some of the important navigation buttons are start/begin/, end, next, previous /back, home, etc. In the navigation card you have to specify the type of navigation button and its action (what will happen, if it is clicked, e.g, Go to S-3). The placement of the buttons and/or hyperlinks also needs to be specified.

A multimedia programme will have a number of screens/ shots, and therefore organizing the cards is very imported. So we suggest you to name these cards as S-1/T (for text of shot 1), S-1/A (for Audio of shot 1), S-1/V (for visual of shot 1), S-1/ An (for animation of shot 1), S-1/N (for navigation of shot 1) S-2/T (for Text of shot 2) and so on.

The number of shots in a storyboard will depend on the content that you have and how you are presenting the multimedia. For an educational multimedia lesson, we can suggest below few standard shots. However, the multimedia based lesson is also dependent on the instructional design that you follow for the programme. Some of the standard screens/shots are:

- Title (normally referred as the home), which welcomes the learner;
- Introduction, which depicts the context and sets the tone of the programme;
- Objectives
- Contents/ Structure / Index
- Glossary
- References
- Self-Assessment Questions

Apart from all these, the content of the lesson will also have a number of shots. Depending upon the requirements, the above shots can be depicted on more than one shot.

Scripting for multimedia and preparation of storyboard is a highly systematic process and requires a certain amount of discipline to organize the cards. Analyses and breaking of the contents into smaller, manageable chunks or objects will fasten development of the storyboard as well as the multimedia. A clear storyboard is the key to a successful and effective multimedia lesson. The storyboard should be reviewed by experts and surrogate users of the multimedia, especially for the navigation part to see the smooth flow of the multimedia programme.

In the next section we will discuss about various components of multimedia.