

### Activity 3 : Choose Your Own Adventure Game (attempt this on your own)

In this activity, we are going to implement the Choose Your Own Adventure Game.

Choose Your Own Adventure is a series of popular children's game books in the 80s. The story consists of many segments where the reader needs to make choices that determine the eventual ending.

The basic structure of a Choose Your Own Adventure story can be represented using a map below. The story line flows depends on the choice of the reader. Each segment of the story consists of two options that lead to another segment or ending.

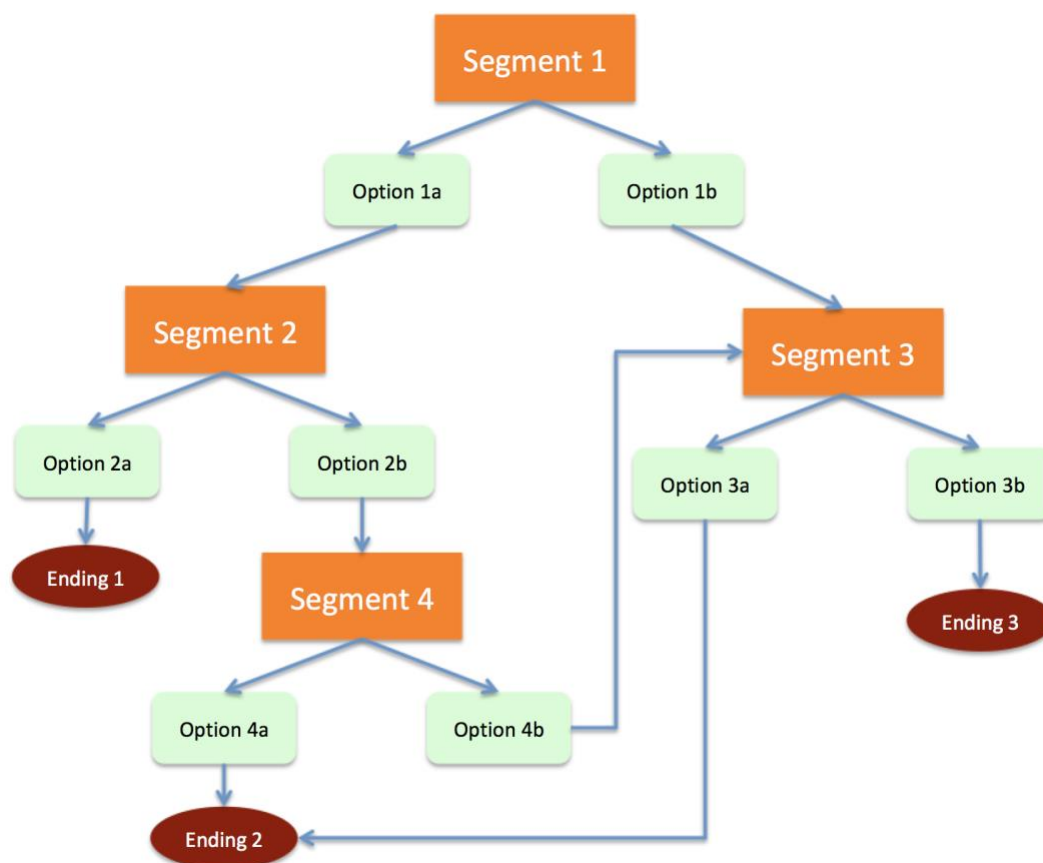


Figure 2.1 Story Structure

We will first implement a generic Choose Your Own Adventure Game engine using the above story structure. Then you can work out a story and fill it into the game. We will create the game using Unity 2018.

### Procedure:

1. Start Unity Hub
2. New a project and name it Choose You Own Adventure Game.  
Under Template, select 2D.
3. Under Project window, go to the assets->scene.
4. Rename the Sample Scene to ChooseYourOwnAdventure
5. Change the game screen solution
  - a. Go to Scene View-> Game panel
  - b. Change the game screen solution to "Standalone (1024x768)".
6. Add in the following UI to the game scene canvas.
  - a. Go to Hierarchy window, right click on ChooseYourOwnAdventure.  
Select GameObject->UI->Text
  - b. Add in the three Text objects below:
    - i. StoryLineText
    - ii. OptionAText
    - iii. OptionBText
7. Adjust the size and position of the three Text objects and you should get something like this:

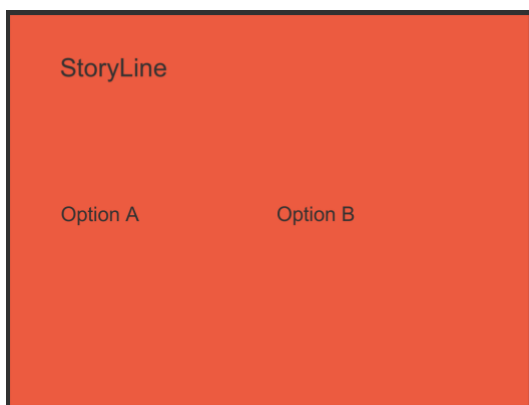
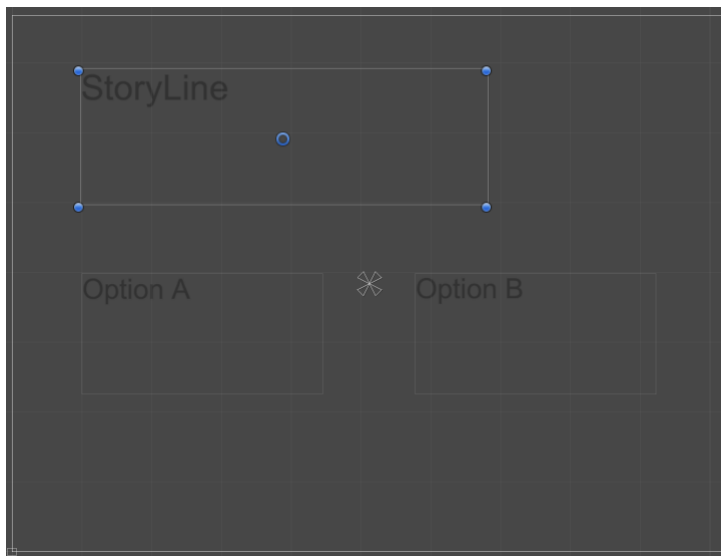


Figure 2.2 Activity 2-1

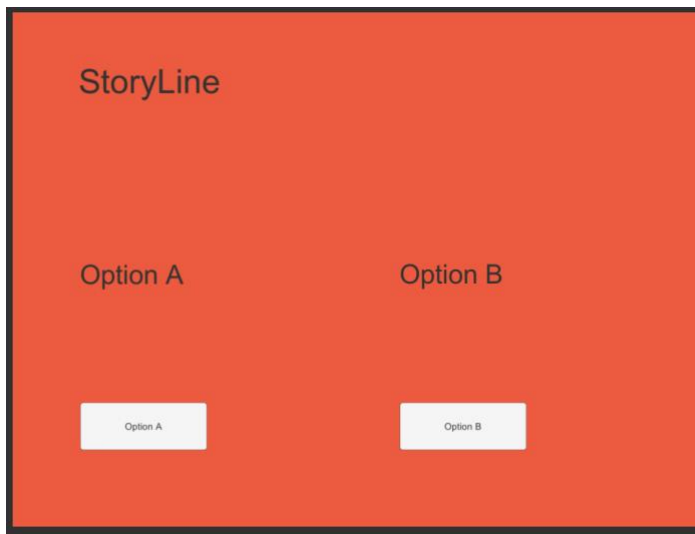
Take note of the width and length of the textbox. Make sure it is wide enough to hold on to a small paragraph.



**Figure 2.3 Activity 2-2**

8. Add in two buttons on the game scene canvas.
  - a. Go to Hierarchy window, right click on ChooseYourOwnAdventure.  
Select GameObject->UI->Button
  - b. Add in the two Button objects below:
    - i. OptionAButton
    - i. OptionBButton

9. Change the button text, adjust the size and position of the two Button objects and you should get something like this:



**Figure 2.4 Activity 2-3**

10. Add in an Image object.

Go to Hierarchy window, right click on ChooseYourOwnAdventure. Select GameObject->UI->Image. Add in the one Image object and name it StoryImage. Adjust the Image object size to 250x250. Place it besides the StoryLine text. You should get something like this:



**Figure 2.5 Activity 2-4**

## 11. Create Project folders.

- a. Go to Project window, create two more folders.
  - i. Scripts
  - ii. Resources (We need to make sure that the spelling is correct, we need to use `Resources.Load()` to load images into the game dynamically. `Resources.Load()` search for images under the “Resources” folder automatically.
- b. You should get something like this in the Project window.

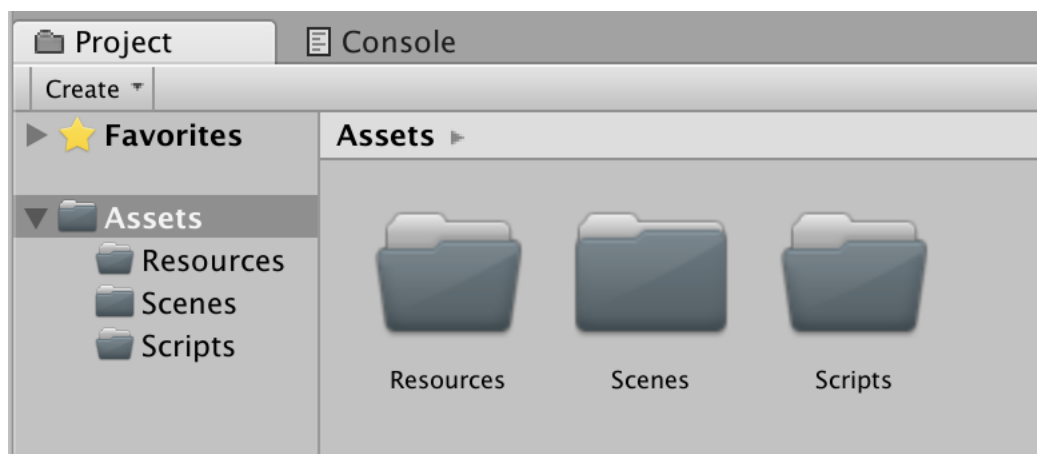


Figure 2.6 Activity 2-5

## 12. Import all the images into Resources folder.

Drag and drop all the images into the Resources folder. You should get something like this in the Project window.



Figure 2.7 Activity 2-6

### 13. Create Story Script

In the Project window, Assets/Script folder, create a C# script named Story.

Type in the following script for Story.

```
1 using System.Collections;
2 using System.Collections.Generic;
3 using UnityEngine;
4
5 public class Story
6 {
7
8     public string MainText;
9     public string ImageSource;
10    public string OptionAText;
11    public string OptionBText;
12    public Story OptionAStory;
13    public Story OptionBStory;
14    public bool Ending;
15
16    //Constructor - used by Story object
17    public Story(string MainText, string ImageSource, string OptionAText, string OptionBText)
18    {
19        this.MainText = MainText;
20        this.ImageSource = ImageSource;
21        this.OptionAText = OptionAText;
22        this.OptionBText = OptionBText;
23        Ending = false;
24    }
25
26    //Constructor - used by Ending Story object
27    public Story(string MainText, string ImageSource)
28    {
29        this.MainText = MainText;
30        this.ImageSource = ImageSource;
31        this.OptionAText = "";
32        this.OptionBText = "";
33        Ending = true;
34    }
35 }
36
37 ~~
```

Figure 2.8 Activity 2-7

## 14. Create ChooseYourOwnAdventure Script

In the Project window, Assets/Script folder, create a C# script named ChooseYourOwnAdventure. Type in the following script for ChooseYourOwnAdventure and save.

```
1 using UnityEngine;
2 using UnityEngine.UI;
3
4 public class ChooseYourOwnAdventure : MonoBehaviour{
5
6     [SerializeField] Text StoryText;
7     [SerializeField] Image StoryImage;
8     [SerializeField] Text OptionAText;
9     [SerializeField] Text OptionBText;
10    [SerializeField] Button OptionAButton;
11    [SerializeField] Button OptionBButton;
12
13    public Story EntryStory;
14    public Story CurrentStory;
15
16    // Use this for initialization
17    void Start(){
18
19        //Init the Story Structure
20        EntryStory = new Story("Story 1", "S1", "Option 1a", "Option 1b");
21        Story Story2 = new Story("Story 2", "S2", "Option 2a", "Option 2b");
22        Story Story3 = new Story("Story 3", "S3", "Option 3a", "Option 3b");
23        Story Story4 = new Story("Story 4", "S4", "Option 4a", "Option 4b");
24        Story Ending1 = new Story("Ending 1", "E1");
25        Story Ending2 = new Story("Ending 2", "E2");
26        Story Ending3 = new Story("Ending 3", "E3");
27
28        //Chain up the story
29        EntryStory.OptionAStory = Story2;
30        EntryStory.OptionBStory = Story3;
31
32        Story2.OptionAStory = Ending1;
33        Story2.OptionBStory = Story4;
34
35        Story4.OptionAStory = Ending2;
36        Story4.OptionBStory = Story3;
37
38        Story3.OptionAStory = Ending2;
39        Story3.OptionBStory = Ending3;
40
41        //Starting Story
42        CurrentStory = EntryStory;
43        SetCurrentStory();
44    }
45
46    void SetCurrentStory(){
47
48        StoryText.text = CurrentStory.MainText;
49        Sprite image = Resources.Load<Sprite>(CurrentStory.ImageSource);
50        StoryImage.sprite = image;
51        OptionAText.text = CurrentStory.OptionAText;
52        OptionBText.text = CurrentStory.OptionBText;
53    }
54 }
```

Figure 2.9 Activity 2-8

## 15. Create the game engine

Go to Hierarchy window, right click on ChooseYourOwnAdventure. Select GameObject->Create Empty. Rename the game object to GameEngine.

## 16. Attach a script to GameEngine.

Go to Hierarchy window, select GameEngine. Make sure the Inspector window is showing GameEngine information.

Go to Project Window, Scripts folder, drag the ChooseYourOwnAdventure C# Script to the Inspector window of GameEngine. You should get something like this in the Inspector window.

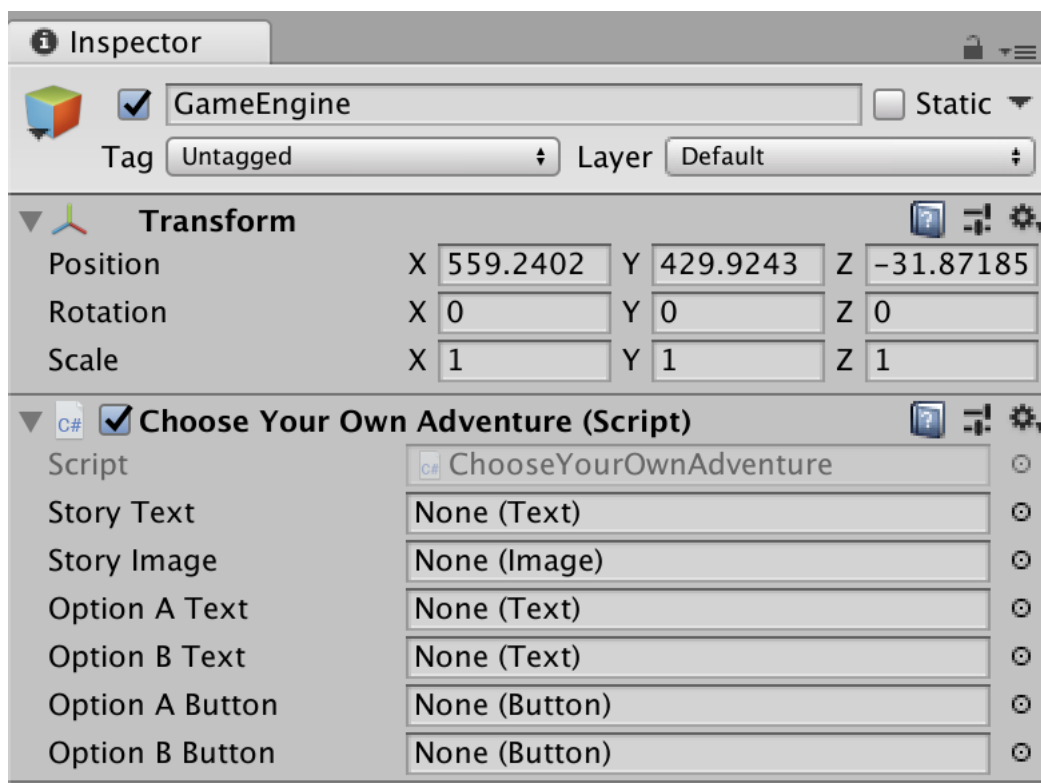


Figure 2.10 Activity 2-9



17. Attached the GameObjects to the SerializeField.

In the Hierarchy window, make sure GameEngine is selected and the Inspector is showing GameEngine information.

Drag each GameObjects from the Hierarchy window to the SerializeField. You should get something like this in the Inspector window.

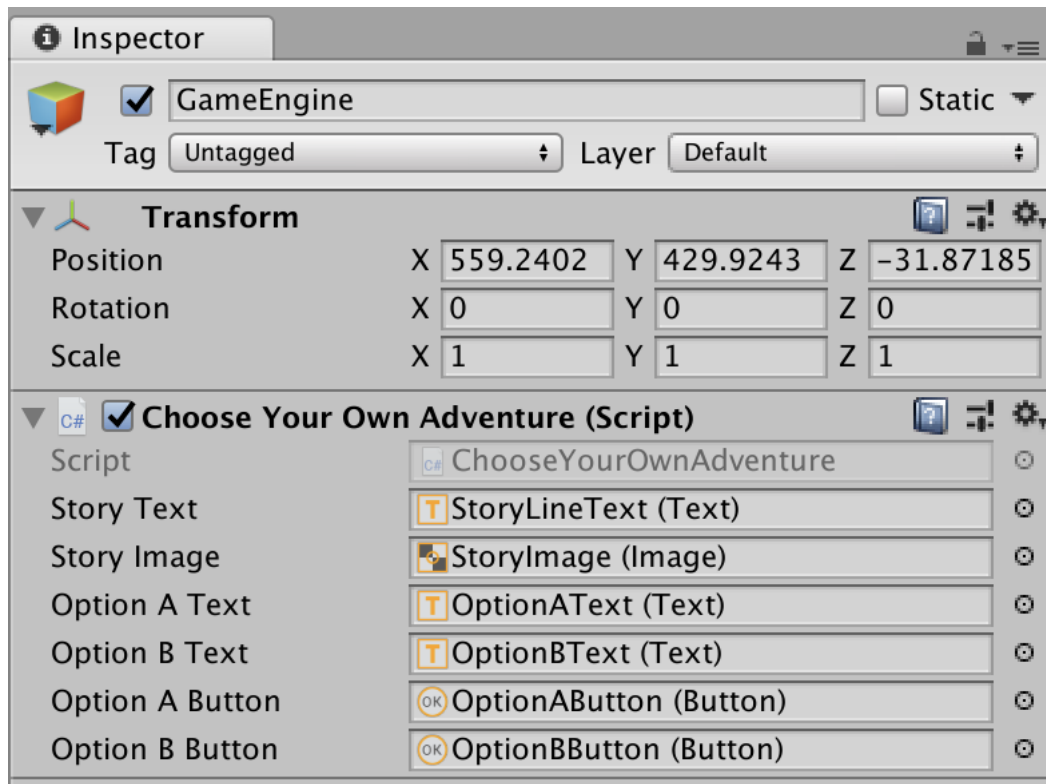
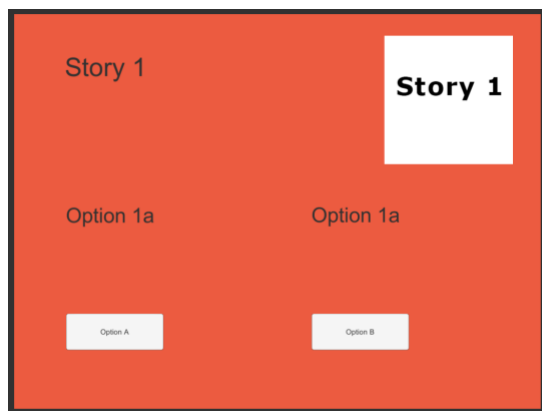


Figure 2.11 Activity 2-10

18. Play and test the game. You should have the first story loaded on the game scene.



**Figure 2.12 Activity 2-11**

User can play the game by clicking on button Option A or B. However currently the two buttons is not responding to any function.

19. Attached functions to the two buttons.

Add in the following functions in ChooseYourOwnAdventure C# script and save.

```
public void OptionAClicked()
{
    CurrentStory = CurrentStory.OptionAStory;
    SetCurrentStory();
    if (CurrentStory.Ending)
    {
        DisableOptionButton();
    }
}

public void OptionBClicked()
{
    CurrentStory = CurrentStory.OptionBStory;
    SetCurrentStory();
    if (CurrentStory.Ending)
    {
        DisableOptionButton();
    }
}

void DisableOptionButton()
{
    OptionAButton.gameObject.SetActive(false);
    OptionBButton.gameObject.SetActive(false);
}
```

**Figure 2.13 Activity 2-12**

20. Link the two buttons to the two functions.

In the Hierarchy window, make sure OptionAButton is selected and the Inspector is showing OptionAButton information.

Go to the Button(Script) On Click section.

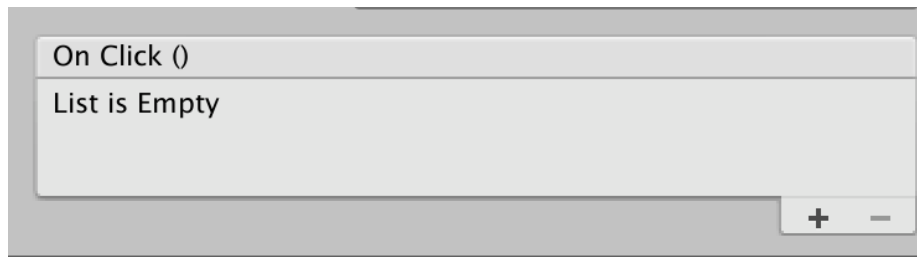


Figure 2.14 Activity 2-13

Click on “+”.

Under the Select Object window, click on Scene panel. Select GameEngine.

Go back to the On Click() section.

Click on No Function.

Select ChooseYourOwnAdventure->OptionAClicked()

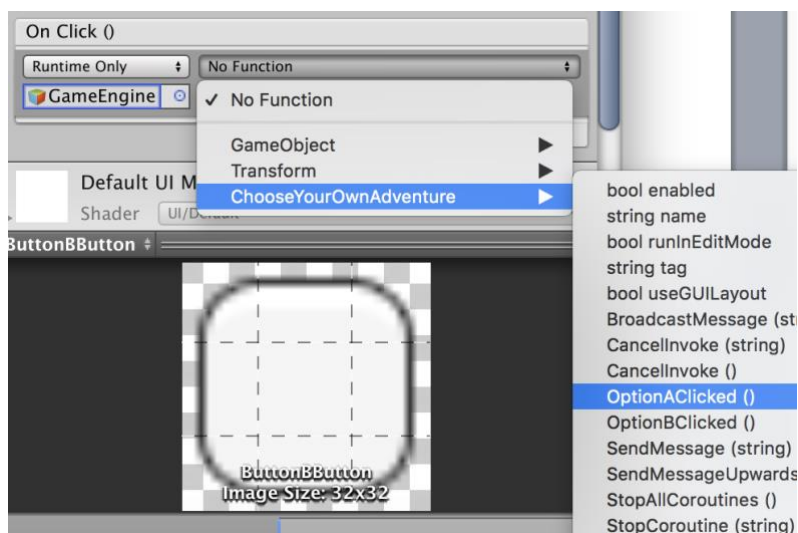
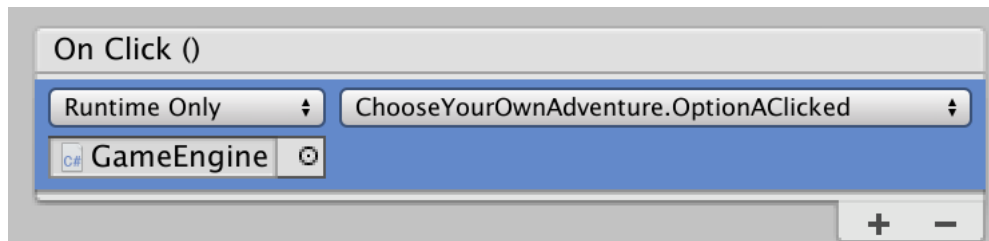


Figure 2.15 Activity 2-14

You should get something like this:



**Figure 2.16 Activity 2-15**

Perform the above steps for OptionBButton.

21. Play and test the game.

You should be able to play the game from Story 1 all the way to one of the ending.

22. Attempt the following tasks on your own.

- Construct a Choice Your Own Adventure story with appropriate pictures and load it into the game.
- Create a Starting scene with instruction
- Create an Ending scene