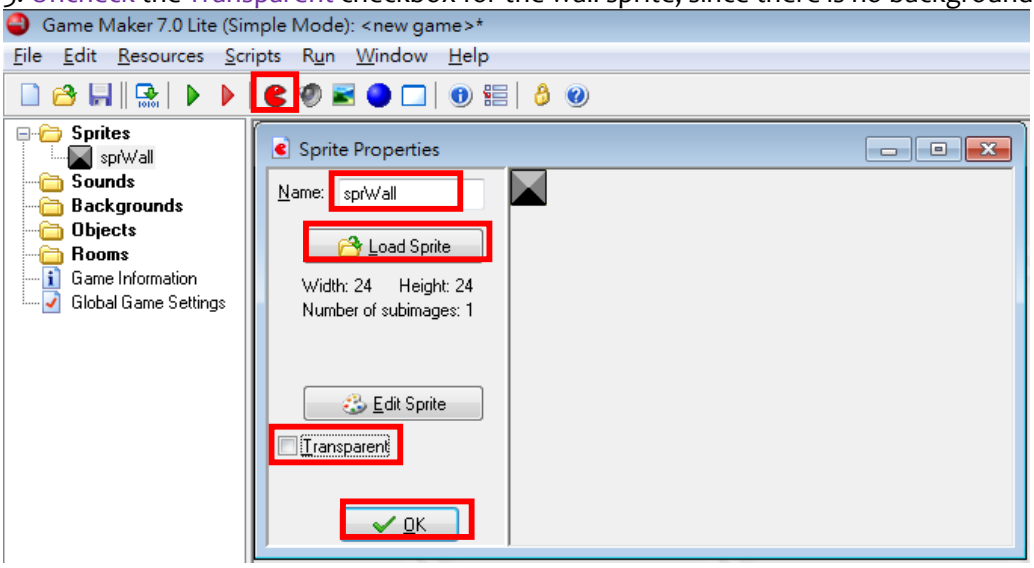
Practice 1: Clickball - INTRODUCTION TO GAME MAKER

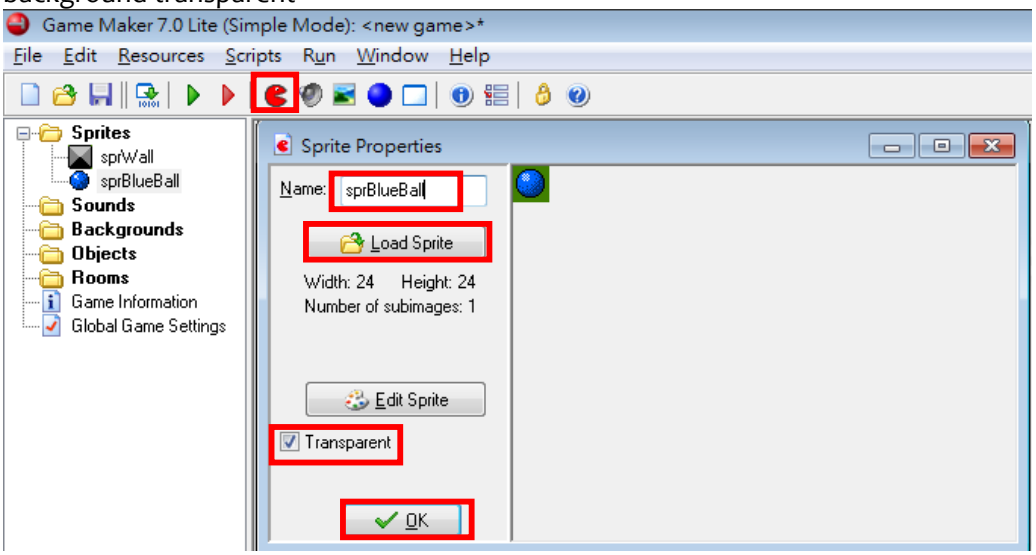
- build a basic game in 50 simple steps

A) Make a wall sprite and a ball sprite

1. Resource> Create Sprite > Load Sprite Button > Maze Folder > wall.gif > Open
2. Name the sprite *sprWall*
3. Uncheck the Transparent checkbox for the wall sprite, since there is no background

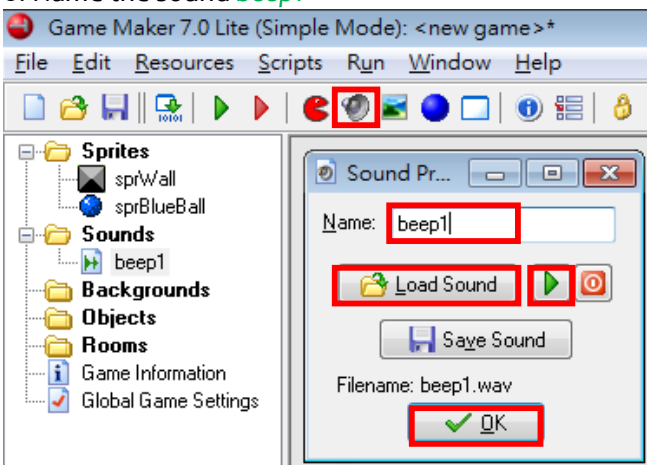


4. Resource> Create Sprite > Load Sprite Button > Maze Folder > ball_blue.gif > Open
5. Name the sprite *sprBlueBall*. Keep the Transparent checkbox checked for the blue ball sprite to keep the background transparent



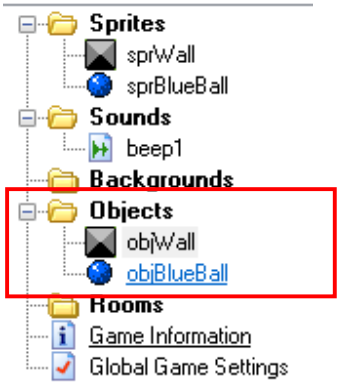
B) Add a sound

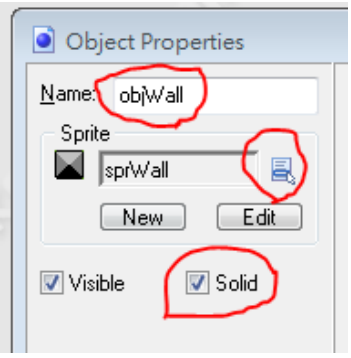
6. Resource> Create Sound > Load Sound Button > Sound Folder > beep1.wav > Open
7. Test the sound by pressing the green play button
8. Name the sound *beep1*

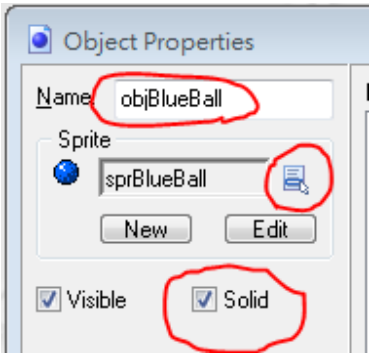


C) Create wall and ball objects

9. Resource> Create Object
10. In the Objects Properties box pick the sprWall sprite from the pull down menu, as shown in the screenshot
11. Name the object *objWall*
12. Check the solid check box
13. Click OK to close
14. Resource> Create Object
15. In the Objects Properties box pick the sprBlueBall sprite from the pull down menu
16. Name the object *objBlueBall*
17. Check the solid check box





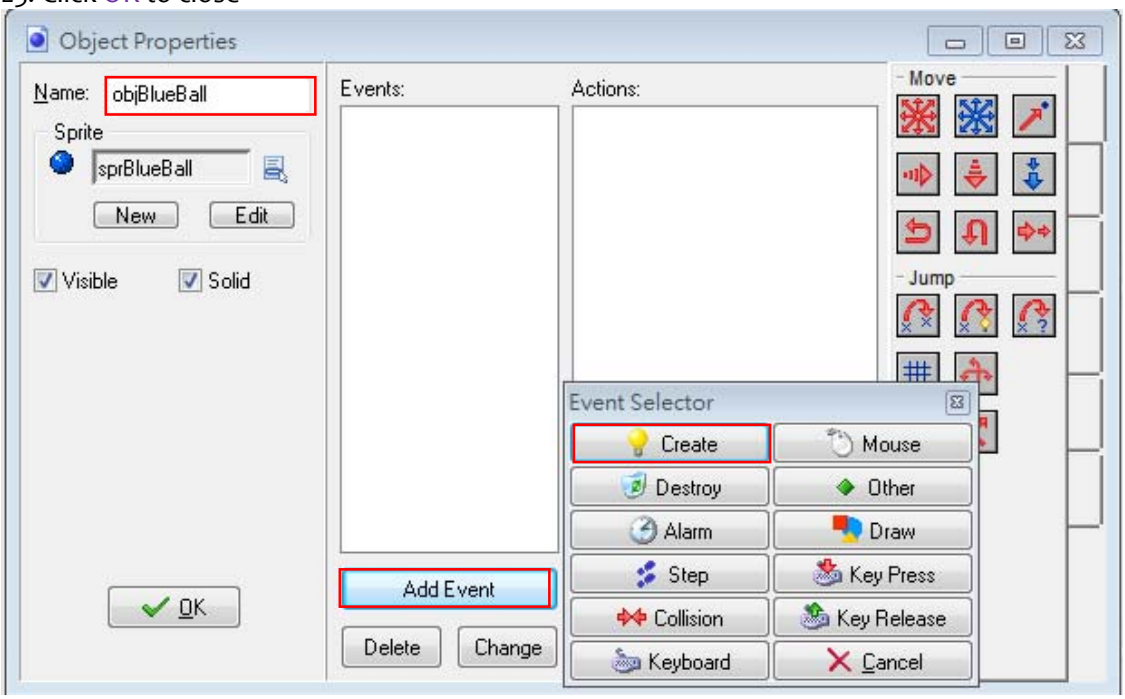


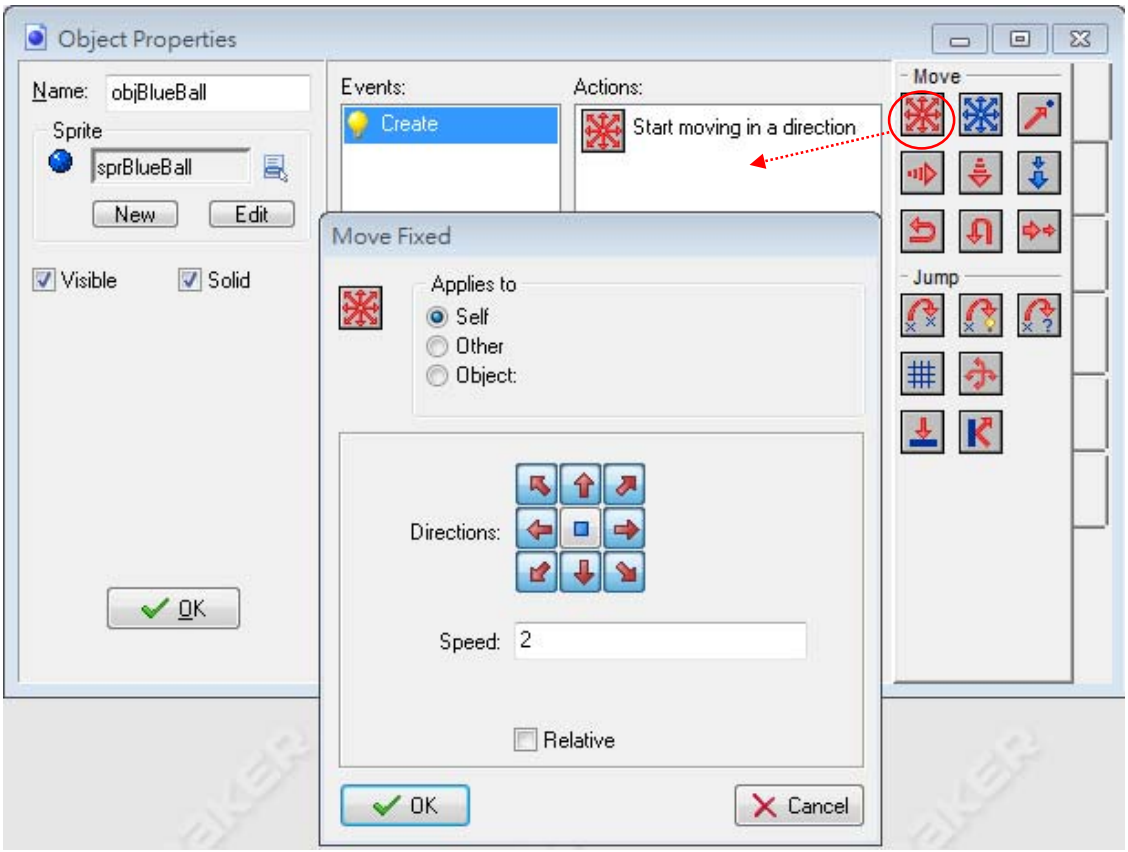
Keep the Object Properties window of the ball object open

D) Program Events

In the middle of the ball Object Properties window you'll see the Add Event button
18. Click the Add Event button
19. Click Create from the Event Selector pop up menu
On the right hand side you'll see all the possible actions in a number of groups (tabs)
20. From the move tab choose the Action with the 8 red arrows and drag it to the list in the middle

21. Now click all of the 8 arrows to randomize the initial motion
22. Change the speed to 2
23. Click OK to close

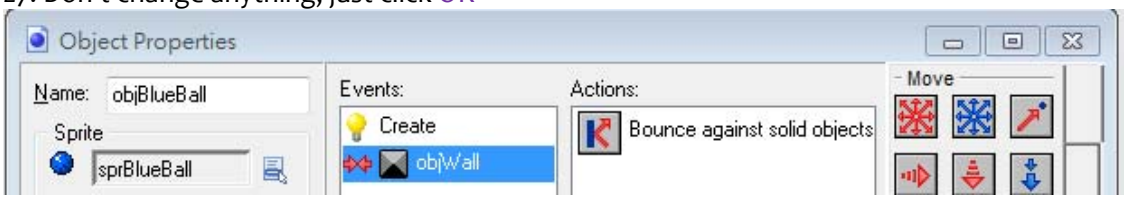




Keep the Object Properties window open

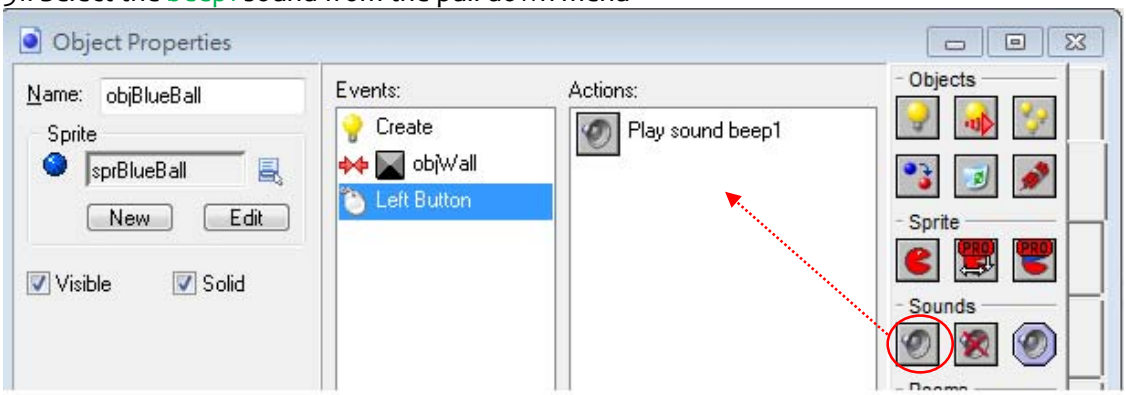
To program the collision of the ball with the wall:-

24. Click Add Event and this time choose Collision from the Event Selector
25. From the drop down menu of the Collision Event select objWall
26. From the actions on the right select the bounce against objects icon and drag it to the list in the middle
A window will pop up, called bounce against objects
27. Don't change anything, just click OK



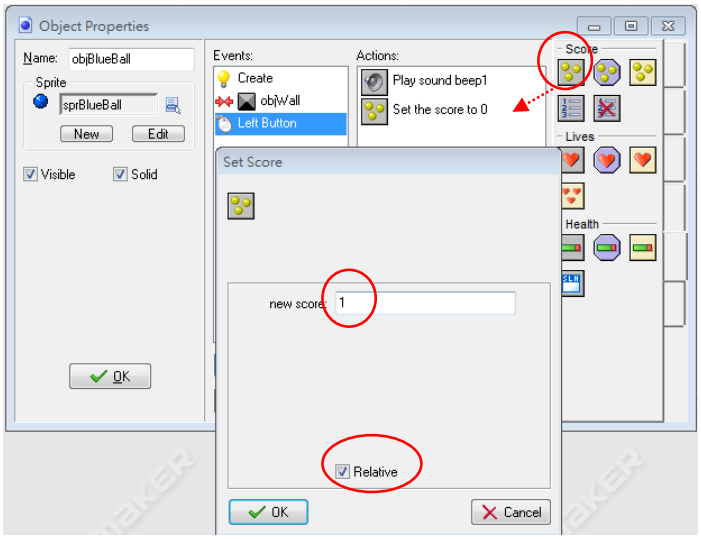
To program user interaction:

The user will attempt to click on the moving balls with the left mouse button
28. Add Event > Event Selector > Mouse > Left button
29. From the actions on the right hand side click on the main1 tab
30. Drag "play a sound" to the middle
31. Select the beep1 sound from the pull down menu



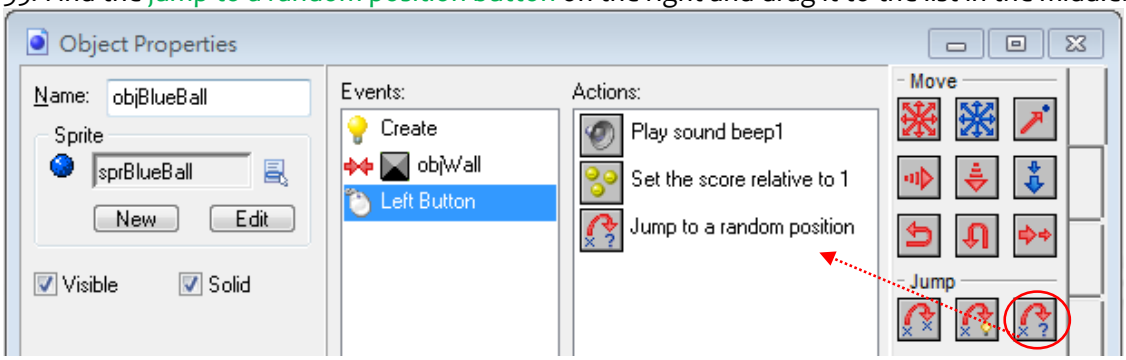
Find Set the Score on the Score tab on the right hand side

32. Drag Set the Score to the action list in the middle
33. For the score action, type in the value of 1 and check the Relative box. This means that 1 is added to the current score for each successful mouse click



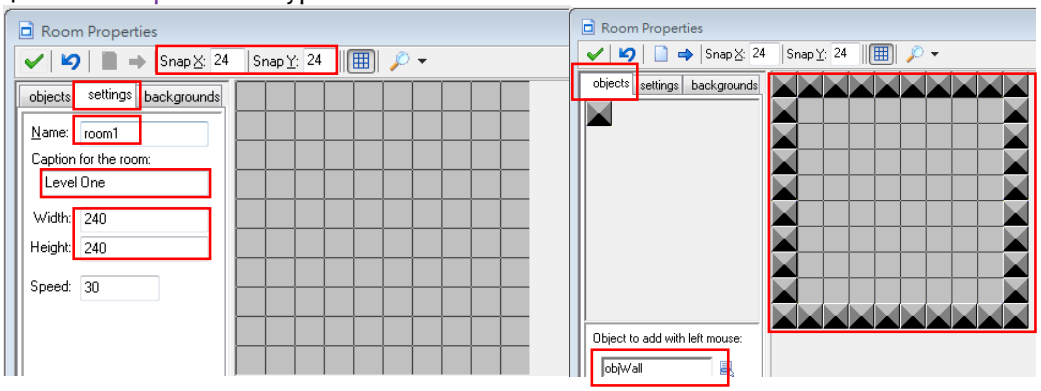
Stay on the **left button** Event

34. Click on the move tab on the right hand side
35. Find the jump to a random position button on the right and drag it to the list in the middle. Click OK.

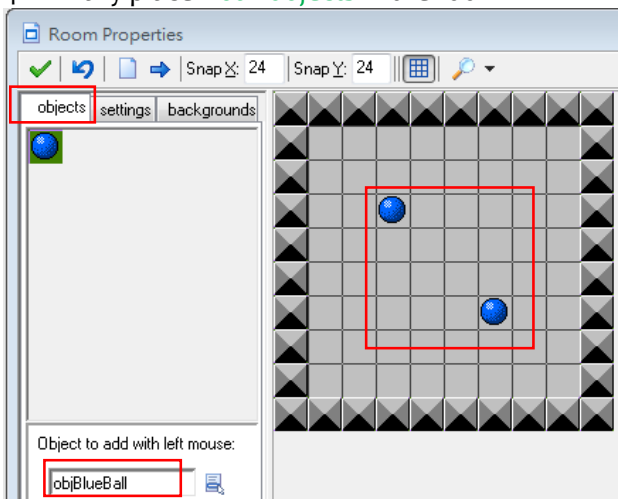


E) Define a room

36. Resource> Create Room
37. Click on the Settings tab of Room Properties
38. Make Width: 240 and Height: 240
39. Set both SnapX and SnapY to 24, because the wall sprite has both a width and height of 24
40. In the Caption box type in Level one



41. Click on the Objects tab of Room Properties
42. Select the wall object from the pull down menu
43. By left clicking in the room place a wall object in there
44. Keep clicking to build the whole wall around the room. To build the wall quickly try shift + hold down left mouse button + drag mouse.
45. Use the right mouse button to remove bits of the wall you don't want
46. Finally place 2 ball objects in the room



F) Play the game

47. Press the Run Game green arrow
48. Click on the moving balls with the left mouse button and see what happens
49. Stop the game by pressing the <Esc> key
50. Save your game if you haven't already, call it something like clickball1.gmk and show it to the teacher for marking

CONGRATULATION, YOU HAVE MADE YOUR FIRST GAME!

RESOURCES:

Game Maker official site	http://gamemaker.nl
National forum	http://lyris.education.tas.gov.au:8080/read/?forum=gamemaker
Kerr web site	http://intranet.woodvillehs.sa.edu.au/kerrbi/g/int.htm
Forster club	http://edrington.haileybury.vic.edu.au/computerclub/computerclub/index.html
EdNA groups	http://www.groups.edna.edu.au/course/view.php?id=81
Game Maker Forum	http://forums.gamemaker.nl/

CLICKBALL VERSION 2
- introduce variations, work things out for yourself more
- ask for help if not sure how

IMPORTANT: Save your clickball game again, version 2
File > Save as > clickball_v2

ONE MARK EACH

- vary the speed of the blue ball(s)
- vary the size of the room
- build extra walls and barriers inside the room
- vary the number of balls inside the room
- put gaps in the wall
- introduce new balls with different colours (red, green)
- add new sorts of sprites and objects to the game, eg. ghosts
- vary the speeds of different coloured balls

TWO MARKS EACH

- change the background appearance
  Hint: background tab of Room Properties
- vary the size of different coloured balls
  Hint: Go into the sprite image editor
- make other changes to the appearance of the sprites, eg. smiley faces
- play some music in the background, use midis
  Hint: main1 > play a sound
  Hint: put the music on a controller and put the controller in the room
- Write down how to play the game in Game Information
- Show your own image while loading the game
  Hint: Global Game Settings > Loading tab
- make sections of the wall be destroyed when the ball hits them.
  Hint: main1 tab > destroy action
- return balls to the room when they leave (necessary if walls destroyed)
  Hint: Other Event > Outside Room Event
  Hint: move tab > Jump to start position
- create explosions as well as destroying sections of the wall when the ball hit the wall.
  Explosion sprites are in the **<u>various</u>** folder.
  Hint: Collision event > main1> change the sprite (explosion), OR
  change the instance (objExplode)

THREE MARKS EACH

- include a pop up message, eg. at the start of the game
  Hint: Use a controller
  Hint: Create event > Main2 tab > Display a message
- Drawing text in a room, once again use a controller

Hint: Use a **Draw Event** and then get the action you want off the **Draw tab** – set font, draw text, draw sprite and there are others too

- make new things happen when different coloured balls hit each other, such as bounce, be destroyed, turn into another colour or type of ball
  Hint: main1> change the sprite (changes appearance only)
  Hint: main1> change the instance (changes the type of object)
- make sections of the wall break away when a ball hits the wall
  Hint: Collision event > move tab > Start moving in a direction (Applies to Other)
- introduce random motion for collisions
  Hint: main1 tab > icon with 8 blue arrows, instead of 8 red arrows
  > set **direction**: random (360)
- adjust the speed of the ball depending on the score
  Hint: make speed equal to the score

FOUR MARKS EACH

- display high score table when game is over
  Hint: Step event > score tab > If score has a value > Show the high score table
  Hint: You will need to either end the game or restart the game after the high score table shows

- include a voice track using your voice, eg. "Hey, welcome to my clickball game"
  Hint: Audacity is a good program to achieve this

Add **controller objects** to achieve the following more complex outcomes:

- create new rooms, learn how to move from one level to the next when the score reaches a certain value – put the code on a controller object and put the controller in the rooms where you want the actions to happen

Event	Actions
Step	Score tab > If score has a value main1 tab > Go to next room

- use the alarm event and alarm clocks to create new balls out of thin air at certain times – once again, this should go on a controller object

  First **set an Alarm** on a **Create Event** of a controller object
  main2 > Set an Alarm clock
  number of steps: 30 is equivalent to one second, 60 is two seconds etc.

  Then on an Alarm Event, create new balls
  main1 > Create an instance of an object

- Use alarm clocks and draw tools to **develop a timer** which shows how much time is left to play the game

CLICKBALL VERSION 2 MARKING SCHEME

FEATURE	MARK
ONE MARK	
vary the speed of the blue ball(s)	/ 1
build extra walls and barriers inside the room	/ 1
vary the number of balls inside the room	/ 1
put gaps in the wall	/ 1
introduce new balls with different colours (red, green)	/ 1
add new sorts of sprites and objects to the game, eg. ghosts, atoms	/ 1
vary the speeds of different coloured balls	/ 1
TWO MARKS	
change the background appearance	/ 2
vary the size of different coloured balls	/ 2
change appearance of sprites in some other way	/ 2
play some music in the background, use midis	/ 2
write down how to play in Game Information	/ 2
show your own image while loading the game	/ 2
make sections of the wall be destroyed when the ball hits them	/ 2
return balls to the room when they leave	/ 2
create explosions as well as destroying sections of the wall when the ball hit the wall	/ 2
THREE MARKS	
include a pop up message	/ 3
Draw text in a room, using a controller	/ 3
make new things happen when different coloured balls hit each other, such as bounce, be destroyed, turn into another colour or type of ball	/ 3
make sections of the wall break away when a ball hits the wall	/ 3
add a path for one of your objects to follow	/ 3
introduce random motion for collisions and start of game random (360)	/ 3
adjust the speed of the ball depending on the score	/ 3
FOUR MARKS	
display high score table when game is over, followed by end or restart of game	/ 4
voice input, your voice	/ 4
Use controllers to:	
move from one level to the next when the score reaches a certain value	/ 4
alarm event and alarm clocks to create new balls out of thin air at certain times	/ 4
use alarm clocks and draw tools to develop a timer	/ 4
TOTAL	

Class: _____ Partner: ( )_____ 、( )_____ Date: _____