```
1   using System.Collections.Generic;
2   using UnityEngine;
3   using UnityEngine.EventSystems;
4
5   public class Joystick : MonoBehaviour
6   {
7       public GameObject JoystickIM;
8       public GameObject JoystickBG;
9       public Vector2 JoystickVec;
10      private Vector2 JoystickTouchPos;
11      private Vector2 JoystickOriginalPos;
12      private float JoystickRadius;
13
14      public void Start()
15      {
16          JoystickOriginalPos = JoystickBG.transform.position;
17          JoystickRadius = JoystickBG.GetComponent<RectTransform>
                ().sizeDelta.y / 4;
18      }
19
20      // Sets the initial position of the joystick
21      public void PointerDown()
22      {
23          int counter = 0;
24          List<Touch> touches = new List<Touch>();
25          bool repeat = true;
26          do
27          {
28              try
29              {
30                  touches.Add(Input.GetTouch(counter));
31                  counter++;
32              }
33              catch
34              {
35                  repeat = false;
36              }
37          } while (repeat);
38          // Resolves the case where the user presses on two places at once
39          if (touches.Count > 1)
40          {
41              float smallestDistance = 10000;
42              int closestTouch = 0;
43              for (int counter2 = 0; counter2 < touches.Count; counter2++)
44              {
45                  if (Vector2.Distance(touches[counter].position,
                        JoystickOriginalPos) < smallestDistance)
46                  {
47                      smallestDistance = Vector2.Distance(touches
                            [counter].position, JoystickOriginalPos);
48                      closestTouch = counter2;
49                  }
50              }
```

```
51              JoystickIM.transform.position = touches[closestTouch].position;
52              JoystickBG.transform.position = touches[closestTouch].position;
53              JoystickTouchPos = touches[closestTouch].position;
54          }
55          else
56          {
57              JoystickIM.transform.position = Input.mousePosition;
58              JoystickBG.transform.position = Input.mousePosition;
59              JoystickTouchPos = Input.mousePosition;
60          }
61      }
62
63      // Moves the joystick image
64      public void OnMouseDrag(BaseEventData baseEventData)
65      {
66          PointerEventData pointerEventData = baseEventData as
              PointerEventData;
67          Vector2 dragPos = pointerEventData.position;
68          JoystickVec = (dragPos -  JoystickTouchPos).normalized;
69
70          float JoystickDist = Vector2.Distance(dragPos, JoystickTouchPos);
71
72          if (JoystickDist < JoystickRadius)
73          {
74              JoystickIM.transform.position = JoystickTouchPos + JoystickVec *
                  JoystickDist;
75          }
76          else
77          {
78              JoystickIM.transform.position = JoystickTouchPos + JoystickVec *
                  JoystickRadius;
79          }
80      }
81
82      // Resets the joystick
83      public void PointerUp()
84      {
85          JoystickVec = Vector2.zero;
86          JoystickIM.transform.position = JoystickOriginalPos;
87          JoystickBG.transform.position = JoystickOriginalPos;
88      }
89  }
90
```