```
<html>
<head>
<title>
Objects
</title>
<script language="javascript">

    //global level variables
    var onOff = 0;
    var circles = new Array();

    var canvasBoundX = 500;
    var canvasBoundY = 500;

    //define the properties of our objects
    // create a function with 5 parameters

    function circleInfo(x, y, velX, velY, color, radius){
        this.x = x;
        this.y = y;
        this.velX = velX;
        this.velY = velY;
        this.color = color;
        this.radius = radius;
    }
    //fill array with its properties
    for(var i = 0; i < 10; i++){
        var xCoord = Math.floor(Math.random() * 440) + 30;
        var yCoord = Math.floor(Math.random() * 440) + 30;
        var velX = Math.floor(Math.random() * 8) + 1;
        var velY = Math.floor(Math.random() * 8) + 1;
        var r = Math.floor(Math.random() * 99);
        var g = Math.floor(Math.random() * 99);
        var b = Math.floor(Math.random() * 99);
        var myColor = "#" + r + g + b;
        var radius = Math.floor(Math.random() * 20) + 10;

        circles[i] = new circleInfo(xCoord, yCoord, velX, velY, myColor, radius);
    }


    function init()
    {
        drawCircle();
    }

    function update(){
        moveCircles();
    }

    function drawCircle()
    {
        var canvas = document.getElementById("myCanvas");
        var context = canvas.getContext("2d");

        //paint canvas
        context.fillStyle="#000000";
        context.fillRect(0,0,500,500);

            for(var i = 0; i < circles.length; i++){
                context.fillStyle = circles[i].color;
                context.beginPath();
                context.arc(circles[i].x, circles[i].y, circles[i].radius, 0, Math.PI * 2
                , true);
                context.closePath();
                context.fill();
            }
```

```
67      }
68
69      function checkContact(i){
70          for(var a = 0; a < circles.length; a++){
71
72              if(i != a){
73                  if(Math.abs(circles[i].x - circles[a].x) < Math.max(circles[i].radius,
                    circles[a].radius) &&
74                  Math.abs(circles[i].y - circles[a].y) < Math.max(circles[i].radius,
                    circles[a].radius)){
75
76                  var ri = Math.floor(Math.random() * 99);
77                  var gi = Math.floor(Math.random() * 99);
78                  var bi = Math.floor(Math.random() * 99);
79                  var colori = "#" + ri + gi + bi;
80
81                  circles[i].color = colori;
82
83                  var ra = Math.floor(Math.random() * 99);
84                  var ga = Math.floor(Math.random() * 99);
85                  var ba = Math.floor(Math.random() * 99);
86                  var colora = "#" + ra + ga + ba;
87
88                  circles[a].color = colora;
89
90                      return true;
91                  }
92              }
93
94              }
95      }
96
97      function moveCircles(){
98          for(var i = 0; i < circles.length; i++){
99
100
101             if(circles[i].x > (canvasBoundX - circles[i].radius) || circles[i].x <
                circles[i].radius || checkContact(i)){
102                 circles[i].velX *= -1;
103             }
104
105             if(circles[i].y > (canvasBoundY - circles[i].radius) || circles[i].y <
                circles[i].radius || checkContact(i)){
106                 circles[i].velY *= -1;
107             }
108
109             circles[i].x += circles[i].velX;
110             circles[i].y += circles[i].velY;
111
112         }
113
114         drawCircle();
115     }
116
117     function resetBackground(){
118         var canvas = document.getElementById("myCanvas");
119             var context = canvas.getContext("2d");
120
121             //paint canvas
122             context.fillStyle="#000000";
123             context.fillRect(0,0,500,500);
124     }
125
126
127
128 function theTimer()
129     {
```

```
130
131             if(onOff == 0)
132             {// In between brackets is a block of code
133                 timer = setInterval("update()",20);
134                 onOff = 1*1;
135             }
136             else if(onOff == 1)
137             {
138                 clearInterval(timer);
139                 onOff = 0 * 1;
140             }
141         }
142     </script>
143     </head>
144     <body onload="init()">
145     <center>
146     <h1>Circle Objects</h1>
147     </br>
148     </br>
149     <canvas id="myCanvas" width="500" height="500"
150                 style="border: 2px solid rgb(195,195,195);">
151             </canvas>
152     </br>
153     </br>
154     <input type="button" value="Move" onclick="moveCircles()">
155     <input type="button" name="Auto" value="Auto Move"
156                 onclick="theTimer()"/>
157     </center>
158     </body>
159     </html>
```