<!-- HTML DOCUMENT --!>

```html
<!DOCTYPE html>
<html>

<head>
<link rel="stylesheet" type="text/css" href="myPtrn.css">
<script src="PtrnFunc.js"> </script>
</head>

<body>
<div class="parent">

<!-- The Header Div -->
<div class="header">
<h1> SVG Pattern Editor </h1>
</div>

<!-- The Left Div -->
<div class="sidecontent left" id="svg_div">
<p id="svg"> SVG PATTERN VIEWER </p>

<svg id="displaySVG" width="500" height="500" style="background: #300000 ;"></svg>

</div>

<!-- The Right Div -->
<div class="sidecontent right" id="js_div">
<p id="js"> PATTERN CONTROLS</p>
<svg height="200" width="500">
<defs>
                <circle id="_c" cx="20" cy="28" r="12"
                        stroke-width:3
                        fill=red
                        fill-opacity=1>
                </circle>
                <polygon id="_t" points="0,40 40,40 20,0"
                        style= "fill:yellow;
                                        stroke:purple;
                                        width:1;">
                </polygon>
                <rect id="_r" width="40" height="40"
                        style= "fill:blue;
                                        fill-opacity:1;
                                        stroke-opacity=1;" >
                </rect>
                <polygon id="_t2" points="0,40 40,40 20,10"
                        style= "fill:green;
                                        fill-opacity=1">
                </polygon>
        </defs>
```

```
                <use x="120" y="40" xlink:href="#_c" > </use>

                <use x="180" y="40" xlink:href="#_t" > </use>

                <use x="240" y="40" xlink:href="#_r" > </use>

                <use x="300" y="0" xlink:href="#_t2" > </use>

        <g id="_crt">
                <use x="370" y="40" xlink:href="#_r" > </use>
                <use x="370" y="40" xlink:href="#_t" > </use>
                <use x="370" y="40" xlink:href="#_c" > </use>
                <use x="370" y="0" xlink:href="#_t2" > </use>
        </g>
        <use xlink:href="#_crt" transform="rotate(180,390,80)"> </use>

        <text x="120" y="100"> Shape 1 </text>
        <text x="180" y="100"> Shape 2 </text>
        <text x="240" y="100"> Shape 3 </text>
        <text x="300" y="100"> Shape 4 </text>
        <text x="370" y="170"> Shape 5 </text>
        <text x="330" y="185"> (combination of 1-4) </text>


</svg>
<form id="svgUI">
        <table>
                <tr>
                <td align="right"> Select How many shapes you want to display : </td>
                <td align="left">
                        <select id="noOfShapes" onchange="disable(this.value)">
                                <option> 1 </option>
                                <option> 2 </option>
                                <option> 3 </option>
                                <option> 4 </option>
                                <option selected="selected"> 5 </option>
                        </select>
                </td>
                <tr>
                        <td align="left">*Please type in the number of rows: </td>
                        <td align="left"><input type="text" name="rows" id="rows" value="1">
</td>
                </tr>
                <tr>
                        <td align="left">*Please type in the number of columns: </td>
                        <td align="left"><input type="text" name="cols" id="cols" value="1"></td>
                </tr>
                <tr>
                        <td align="center" colspan="2" rowspan="2"><h2>Colours</h2> </td>
                </tr>
                <tr>
```

```html
            </tr>
            <tr>
                <td align="left">Choose a colour for each shape </td>
            </tr>
            <tr>
                <td align="center">Shape 1</td>
                <td align="left">
                        <select id="s1Colour">
                                <option selected="selected"> red</option>
                                <option> yellow </option>
                                <option> blue </option>
                                <option> green </option>
                        </select>
                </td>
            </tr>
            <tr>
                <td align="center">Shape 2</td>
                <td align="left">
                        <select id="s2Colour">
                                <option> red</option>
                                <option selected="selected"> yellow </option>
                                <option> blue </option>
                                <option> green </option>
                        </select>
                </td>
            </tr>
            <tr>
                <td align="center">Shape 3</td>
                <td align="left">
                        <select id="s3Colour">
                                <option> red</option>
                                <option> yellow </option>
                                <option selected="selected"> blue </option>
                                <option> green </option>
                        </select>
                </td>
            </tr>
            <tr>
                <td align="center">Shape 4</td>
                <td align="left">
                        <select id="s4Colour">
                                <option> red</option>
                                <option> yellow </option>
                                <option> blue </option>
                                <option selected="selected"> green </option>
                        </select>
                </td>
            </tr>
            <tr>
                <td align="center"><input type="button" onclick="createSVGPattern()"
value="Generate SVG"></td>
```

```html
                              <td align="center"><input type="button"
onclick="window.location.reload()" value="reset"> </td>
        </table>
<script>
function disable(noOfShapes){
        if(noOfShapes == 1){
                document.getElementById("s1Colour").disabled=false;
                document.getElementById("s2Colour").disabled=true;
                document.getElementById("s3Colour").disabled=true;
                document.getElementById("s4Colour").disabled=true;
        } else if(noOfShapes == 2){
                document.getElementById("s1Colour").disabled=false;
                document.getElementById("s2Colour").disabled=false;
                document.getElementById("s3Colour").disabled=true;
                document.getElementById("s4Colour").disabled=true;
        } else if(noOfShapes == 3){
                document.getElementById("s1Colour").disabled=false;
                document.getElementById("s2Colour").disabled=false;
                document.getElementById("s3Colour").disabled=false;
                document.getElementById("s4Colour").disabled=true;
        } else if (noOfShapes <= 4){
                document.getElementById("s1Colour").disabled=false;
                document.getElementById("s2Colour").disabled=false;
                document.getElementById("s3Colour").disabled=false;
                document.getElementById("s4Colour").disabled=false;
        }
}
</script>

</form>
</div>
<!-- WHERE MY JAVASCRIPT WILL APPEAR -->

</div>
<!-- The Bottom Div -->
<div class="footer" >
NAME: CHRISTIAN PAUL DOMINGO &nbsp STUDENT ID:EEP214 &nbsp MODULE: ICP-4123
TECHNOLOGY FOR INTERNET SYSTEMS &nbsp @BANGOR UNIVERSITY
</div>
</body>
</html>


                              /** JAVASCRIPT DOCUMENT **/
var NS = "http://www.w3.org/2000/svg";
var xrf = "http://www.w3.org/1999/xlink";

function createSVGPattern(){
        //get where svg will be displayed
        var body = document.getElementById("displaySVG");

        //get all attributes of the js form to create svg
```

```javascript
var noOfShapes = document.getElementById("noOfShapes").value;
var rows = document.getElementById("rows").value;
var cols = document.getElementById("cols").value;
var s1Colour = document.getElementById("s1Colour").value;
var s2Colour = document.getElementById("s2Colour").value;
var s3Colour = document.getElementById("s3Colour").value;
var s4Colour = document.getElementById("s4Colour").value;

if(rows == "" || cols == ""){
        alert("please put some number to rows and column textbox");
        window.location.reload();
        return;
}

// alert("no of Shapes Selected " + noOfShapes +  "\n" +
//          "no of rows inputted " + rows + "\n" +
//          "no of cols inputted " + cols + "\n" +
//          "colour for shape 1 " + s1Colour + "\n" +
//          "colour for shape 2 " + s2Colour + "\n" +
//          "colour for shape 3 " + s3Colour + "\n" +
//          "colour for shape 4 " + s4Colour);

//def objects
var defs = document.createElementNS(NS,"defs");

var circle = doCircle(20,28,12 , "_c", s1Colour);
var triangle = doTri(s2Colour ,"_t");
var rectangle = doRect(40,40, "_r", s3Colour);
var triangle2 = doTri2(s4Colour,"_tr");

defs.appendChild(circle);
defs.appendChild(triangle);
defs.appendChild(rectangle);
defs.appendChild(triangle2);


//for each cases of shape
var ax = 0, ay=0; // will be used for offset
var g_ptrn = document.createElementNS(NS,"g");
g_ptrn.setAttributeNS(null,"id","_ptrn");

if(noOfShapes == 1){
        var c = useIt("#_c",0, 0);
        g_ptrn.appendChild(c);
        ax=24;
        ay=24;
        // body.appendChild(c)
} else if ( noOfShapes == 2){
        var c = useIt("#_c",10, 10);
        var t = useIt("#_t",10, 10);
```

```javascript
            g_ptrn.appendChild(t);
            g_ptrn.appendChild(c)
            ax = 40;
            ay = 40;
            // body.appendChild(t);
            // body.appendChild(c);
} else if ( noOfShapes == 3){
            var c = useIt("#_c",10, 10);
            var t = useIt("#_t",10, 10);
            var r = useIt("#_r",10, 10);

            g_ptrn.appendChild(r);
            g_ptrn.appendChild(t);
            g_ptrn.appendChild(c);

            ax = 40;
            ay = 40;
            // body.appendChild(r);
            // body.appendChild(t);
            // body.appendChild(c);
} else if (noOfShapes == 4) {
            var c = useIt("#_c",10, 40);
            var t = useIt("#_t",10, 40);
            var r = useIt("#_r",10, 40);
            var tr = useIt("#_tr" ,10 , 0);

            g_ptrn.appendChild(r);
            g_ptrn.appendChild(t);
            g_ptrn.appendChild(c);
            g_ptrn.appendChild(tr);

            ax = 40;
            ay = 70;
            // body.appendChild(r);
            // body.appendChild(t);
            // body.appendChild(c);
            // body.appendChild(tr);
} else if (noOfShapes == 5){
            var g_crt = document.createElementNS(NS,"g");
            g_crt.setAttributeNS(null,"id", "_crt");

            var c = useIt("#_c",10, 40);
            var t = useIt("#_t",10, 40);
            var r = useIt("#_r",10, 40);
            var tr = useIt("#_tr" ,10 , 0);

            g_crt.appendChild(r);
            g_crt.appendChild(t);
            g_crt.appendChild(c);
            g_crt.appendChild(tr);
```

```javascript
            var crt2 = useIt("#_crt",0,0);
            crt2.setAttributeNS(null,'transform','rotate(180,30,80)');


            g_ptrn.appendChild(g_crt);
            g_ptrn.appendChild(crt2);

            // body.appendChild(g_crt);
            // body.appendChild(crt2);
            ax = 40;
            ay = 110;
        }


        while(body.firstChild){
            body.removeChild(body.firstChild)
        }

        body.appendChild(defs);
        body.appendChild(g_ptrn);

        for(var i = 0; i < rows; i++){
            for(var j = 0; j < cols; j++){
                if(i%2 == 1 && noOfShapes == 5){
                    body.appendChild(useIt("#_ptrn",ax*j-20,ay*i));
                }else{
                    body.appendChild(useIt("#_ptrn",ax*j,ay*i));
                }
            }
        }
}


function doCircle(cx, cy, r, myID, colour){
        var c = document.createElementNS(NS,"circle");
        c.setAttributeNS(null,"id",myID)
        c.setAttributeNS(null,"cx",cx);
        c.setAttributeNS(null,"cy",cy);
        c.setAttributeNS(null,"r",r)
        c.style.fill=colour;
        c.style.opacity=1;
        return c;
}

function doRect(h,w, myID,colour){
        var r = document.createElementNS(NS,"rect");
        r.setAttributeNS(null,"id",myID);
        r.setAttributeNS(null,"height",h);
        r.setAttributeNS(null,"width",w);
        r.style.fill=colour
        r.style.opacity=1;
```

```javascript
        return r;
}

function doTri(colour,myID){
        var t = document.createElementNS(NS,"polygon");
        t.setAttributeNS(null,"id",myID);
        var mypoints = [0,40, 40,40, 20,0];
        t.setAttributeNS(null,"points", mypoints );
        t.style.fill=colour;
        t.style.opacity=1;
        t.style.width=1;

        return t;
}

function doTri2(colour,myID){
        var t2 = document.createElementNS(NS,"polygon");
        t2.setAttributeNS(null,"id",myID);
        var mypoints = [0,40, 40,40, 20,10];
        t2.setAttributeNS(null,"points", mypoints );
        t2.style.fill=colour;
        t2.style.opacity=1;
        t2.style.width=1;

        return t2;
}

function useIt(shape, x, y){
        var use = document.createElementNS(NS,"use");

        use.setAttributeNS(null,"x",x);
        use.setAttributeNS(null,"y",y);
        use.setAttributeNS(xrf,"href",shape);
        return use;
}
```

/** CSS DOCUMENT **/
```css
body{
        background-color:#F0F0F0 ;
        min-width:1000px;
}
 .header {
   color: @color;
   background-color: @title-color;
   font-family: @font-family;
   margin-bottom: 5px;
   font-size: 20px;
   text-align: center;
   border: 0px solid #D5D5D5;
   border-radius: 2px;
```

```css
      height: 50px;
    }

.parent{
        white-space: nowrap;
        overflow-x: scroll;
        min-width: 1000px;
}

.left {
        background-color: #989898 ;
    float: left;
}
.right {
    float: right;
    background-color: #D8D8D8 ;
}
.sidecontent {
    width: 49%;
    border: 0px solid #D5D5D5;
    display: inline-block;
    padding: 5px;
    vertical-align: top;
    height: 600px;
    overflow-y: auto;
    border-radius: 5px;
    min-width: 500px;
    white-space: normal;
}

.footer{
        color: #990000;
    padding: 5px;
    font-family: monospace;
    font-size: 12px;
    text-align: center;
    border: 0px solid #D5D5D5;
    border-radius: 20px;
}

#svg {
        background-color: #FFFF00;
}

#js {
        background-color: #FF0000;
}
```