

Project1.html

set browser page title to "Project 1: Self Portrait"

link relationship to W3 style sheet

create light grey panel

display heading "Programming for Design (11055)"

display sub-heading "Project 1 – *Self Portrait*"

display paragraph "Keir Herbert (u3211239)"

end panel

create light grey container for control panel

create dark grey container for title bar

display in bold "Controls"

end container

create container for text labels

display paragraph "red"

display paragraph "green"

display paragraph "blue"

display paragraph "shape size"

display paragraph "frame rate"

display paragraph at position relative to top (20px) "geometry"

end container

end container

point to p5.js script source

point to coordinates.js script source

point to getScaleFactor.js script source

point to createTriangle.js script source

point to selfPortrait.js script source

selfPortrait.js

```
function setup
  constant matrix = 200
  var scaleFactor = getScaleFactor
  create a canvas size = matrix * scaleFactor
  position canvas 150, 75
  shape outline stroke = off
  create redSlider
    range = 0 to 255
    initial = 63
    width = 140px
    position = 8, 255
  create greenSlider
    range = 0 to 255
    initial = 81
    width = 140px
    position = 8, 292
  create blueSlider
    range = 0 to 255
    initial = 181
    width = 140px
    position = 8, 329
  create heightSlider
    range = 2 to 48
    initial = 12
    width = 140px
    position = 8, 366
  create diameterSlider
    range = 2 to 48
    initial = 8
    width = 140px
    position = 8, 366
  create framerateSlider
    range = 1 to 24
    initial = 5
    width = 140px
    position = 8, 403
  create shapeSelector
    option 0 = triangular
    option 1 = circular
    width = 95px
    position = 24, 440
    default = 0
end function setup

function windowResized (event driven when window moved or resized)
  var scaleFactor = getScaleFactor
  resize canvas (matrix * scaleFactor), (matrix * scaleFactor)
end function windowResized

function draw
  clear screen
  set framerate = framerateSlider value
```

set fill = **redSlider** value, **greenSlider** value, **blueSlider** value

let **row** = 0

do while **row** < length of **coordinates** array

var **x** = **coordinates**(**row**, 0) * **scaleFactor**

var **y** = **coordinates**(**row**, 1) * **scaleFactor**

row = **row** + 1

switch case based on **shapeSelector** value

case 0

hide circle **diameterSlider**

show triangle **heightSlider**

var **height** = random number between **heightSlider** value and 2 (inclusive)

call **createTriangle**(**x**, **y**, **height**)

break out of switch

case 1

hide triangle **heightSlider**

show circle **diameterSlider**

var **diameter** = random number between **diameterSlider** value and 2 (inclusive)

plot circle(**x**, **y**, **diameter**)

break out of switch

loop

end function **draw**

getScaleFactor.js

function **getScaleFactor**

if screen.Height < 720 then

return value of 2

if screen.Height < 900 then

return value of 3

if screen.Height <= 1080 then

return value of 4

if screen.Height < 1440 then

return value of 5

else

return value of 6

end function **getScaleFactor**

createTriangle.js

function **createTriangle**

receive values and assign to variables **x**, **y**, **height**

var **segment** = height / 3

var **xPoint1** = **x**

var **yPoint1** = **y** - **segment** * 2

var **xPoint2** = **x** + **segment** * 2

var **yPoint2** = **y** + **segment**

var **xPoint3** = **x** - **segment** * 2

var **yPoint3** = **yPoint2**

draw triangle(**xPoint1**, **yPoint1**, **xPoint2**, **yPoint2**, **xPoint3**, **yPoint3**)

end function **createTriangle**

coordinates.js

var **coordinates** as pseudo-multidimensional array

populate with data line-by-line