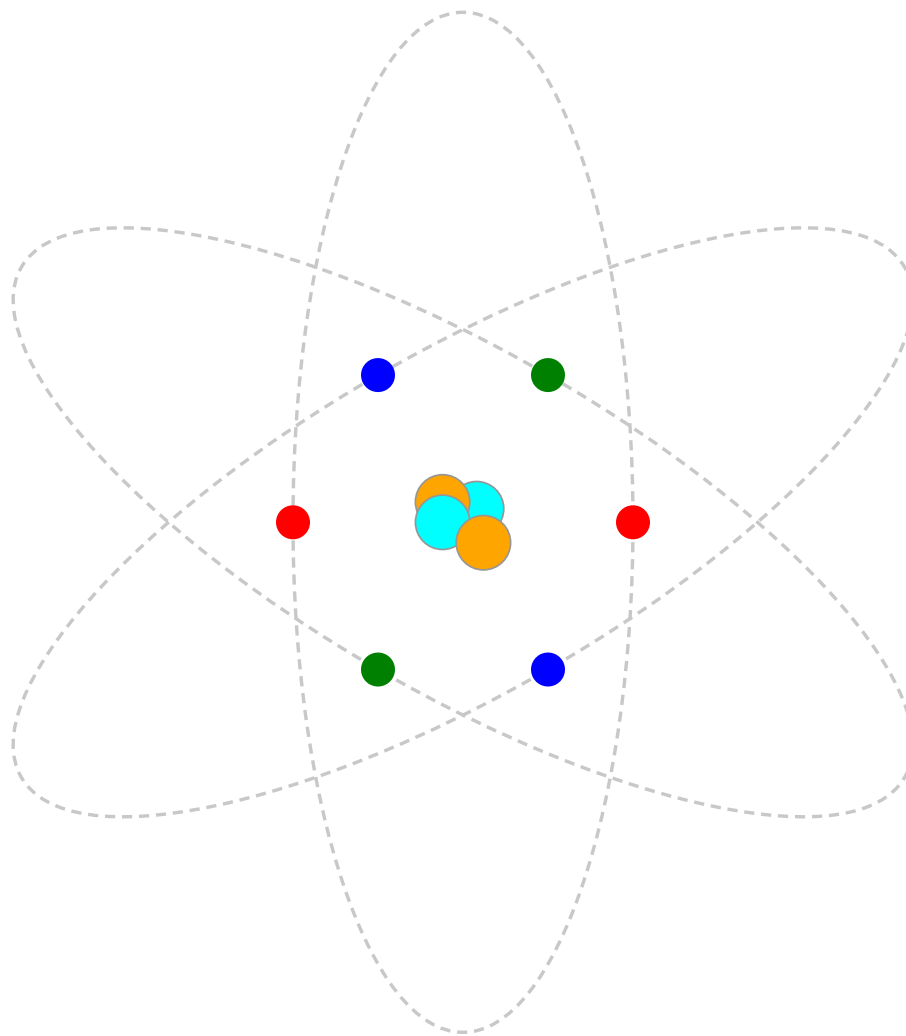# Atom

Coding an Atom with animation in SVG

In a text editor, create an <svg> element with a viewBox from (0,0) to (400,400) and save the file as atom.svg and open the file in a browser. In the editor, add the SVG elements (per instructions below).

1: Create an SVG image with a viewBox="0 0 400 400"

2: Create a group element with a rotate transformation: rotate 0 degrees about (200,200)

3: Create a path element as a child of the group with id="p1" style="fill:none;stroke:rgb(200,200,200);stroke-dasharray:3,2;" d="M150,200A50,150,0,0,1,250,200A50,150,0,0,1,150,200z"

   Note: the path starts at (150,200), then draws an elliptical arc (A) with x-radius of 50, y-radius of 150, flags of 0,0,1 and ends at (250,200), then draws another arc (A) from that point with the same x & y radius and flags and ends at (150,200) which is the starting point of the path. A z command is included at the end to make sure the path is completely closed.

4: Create a circle element as a child of the group; radius: 5, style: fill:red
   Note: the element will have child elements.

5: Create an animateMotion element as a child element of the circle with attributes: dur="1s" repeatCount="indefinite" The element will have a child element.

6: Create a mpath element as a child of the animateMotion element with attribute: xlink:href="#p1"

7: Copy the grouping and paste it after the group, then delete the path element and change the rotation angle to 180 degrees

8: Copy both groupings and paste it after the 2 groupings, then change:
   group rotate transformation angles to 60 and 240
   Both groups: circle style to fill:blue
   Both groups: animateMotion duration to 1.1s

9: Paste the copied groups again after the step 8 groups, then change:
   group rotate transformation angles to 120 and 300
   Both groups: circle style to fill:green
   Both groups: animateMotion duration to 1.2s

10: Create a group element after the last grouping with attributes:
    id="nucleus" style="stroke:rgb(150,150,150);stroke-width:0.5px;"

11:     Create 4 circle elements as child elements of the last grouping
       Circle center: (204,196), radius: 8, style: fill:cyan
       Circle center: (194,194), radius: 8, style: fill:orange
       Circle center: (194,200), radius: 8, style: fill:cyan
       Circle center: (206,206), radius: 8, style: fill:orange