A2 Preliminary Tests - additional information

Most of the tests have self-explanatory output, but I thought that test group 9 - testing of setAttribute - needed some clarification.

In all of these cases, the test harness does the following:
- it uses your createSVG to create an SVG struct from one of the test files. You will see an error if your createSVG returns null.
- The function setAttribute is then used to modify this SVG struct and either create a new attribute or update an existing one. In all cases, only valid attribute values are used.
- The modified SVG struct is passed to your validateSVG, which is expected to return true. You will see an error if your validateSVG returns false.
- The number of attributes in the updated SVG struct is verified (e.g. to make sure you didn't just insert "height" into otherAttributes of a Rectangle)
- Updated SVG struct is further verified to make sure the correct value was updated:
  - For float fields of Rectangle/Circle, the harness verifies the value of the applicable field; floats are tested for equality with the tolerance of 0.0001.
  - For Attributes in the otherAttribute list, it verifies that the Attribute in the list at the appropriate location (elemIndex for existing attributes, end of the list for new ones) has the correct string value.

So if you are getting errors from sub-tests in Test 9, they can be caused by
- your createSVG failing to open a valid svg file
- your validateSVG failing to validate the SVG struct that was modified by your setAttribute
- an incorrect number of attributes after insertion/update
- an incorrect value in the updated attribute

The tests themselves are:

9.1: Adding a valid new attribute viewBox to an SVG struct (into otherAttributes). The struct is created by your createSVG from rects.svg

9.2: Adding a new valid attribute fill to a Rectangle (into otherAttributes). The struct is created by your createSVG from rects.svg

9.3: Updating an existing attribute of a Rectangle ("fill", in otherAttributes). The struct is created by your createSVG from rects.svg

9.4: Updating an existing attribute of an SVG struct ("width", in otherAttributes). The struct is created by your createSVG from rects.svg

9.5: Updating an existing attribute of a Rectangle ("height", a field of the Rectangle struct). The struct is created by your createSVG from rects.svg

9.6: Updating an existing attribute of a Circle ("r", a field of the Circle struct). The struct is created by your createSVG from Emoji_grinning.svg

9.7: Updating an existing attribute of a Path ("d", a field of the Path struct). The struct is created by your createSVG from Emoji_grinning.svg and the 3rd path element (i.e. elemIndex=2) is being modified. The new value for the path data is shorter than the original path data, so that the new path data fits into the existing Attribute->value[] with no need for memory re-allocation.