format of input = element of XML per line of file, with each line of input starting with the element's type followed by attribute names and values, all separated by commas

Always start with tabletop and its attributes on first line of file

Elements Attributes that can be provided on same line

tabletop xspan(required),yspan(required)

include file (required)

block id,location(required),rotation,color,mass,xspan,yspan,zspan

cylinder id,location(required),rotation,color,mass,radius,yspan

sphere id,location(required),rotation,color,mass,radius

box id,location(required,rotation,color,mass,xspan,yspan,zspan,thickness

custom id,location(required,rotation,color,mass,file(required),scale

composite id,location(required),rotation,mass,childelements(required)

instance instance\_name,var,name,value,var,name,value,var,name,value...

\*-----------------------------------------------------------------------------\*

Examples of input for each element

- tabletop :

tabletop,xspan,20,yspan,12

- include :

include,tabletop/def-room.xml

- block :

block,id,RedBlock,xspan,1,yspan,1,zspan,1,location,1.9994404,-3.0177548,0.50036395,rotation,-0.04983028,-0.06965088,-15.614626,color,red,mass,1

(this is all on one line)

- cylinder :

cylinder,radius,1,yspan,1,location,0,0.5,0.5

- sphere :

sphere,id,BigOlSphere,radius,1,location,0,0,0.5,color,red,mass,1,rotation,0.5,0.5,0.5

- box :

box,id,BoxerBriefs,location,0,0,0.5,color,black,mass,5,thickness,56,xspan,1,yspan,1,zspan,1

- custom :

custom,id,teapot,color,green,scale,0.05,location,0,0,0,rotation,-90,0,-90,file,tablesetup/stl/Teapot.stl

(this is all on one line)

- composite :

composite,id,comp,location,0,0,3,rotation,0,0,0,mass,0.1,composite,id,comp2,location,1,1,1,rotation,2,2,2,mass,0.5,custom,color,green,scale,0.05,location,0,0,0,rotation,-90,0,0,file,tablesetup/stl/Teapot.stl,block,xspan,2,yspan,2,zspan,2,location,0,0,-1,rotation,0,0,0,color,red

(this is all on one line)

- instance :

instance,room,var,rotation,0,0,0,var,location,0,0,0,var,color,black

- all together :

tabletop,xspan,20,yspan,12

block,id,RedBlock,xspan,1,yspan,1,zspan,1,location,1.9994404,-3.0177548,0.50036395,rotation,-0.04983028,-0.06965088,-15.614626,color,red,mass,1

cylinder,radius,1,yspan,1,location,0,0.5,0.5

sphere,id,BigOlSphere,radius,1,location,0,0,0.5,color,red,mass,1,rotation,0.5,0.5,0.5

box,id,BoxerBriefs,location,0,0,0.5,color,black,mass,5,thickness,56,xspan,1,yspan,1,zspan,1

custom,id,teapot,color,green,scale,0.05,location,0,0,0,rotation,-90,0,-90,file,tablesetup/stl/Teapot.stl

composite,id,comp,location,0,0,3,rotation,0,0,0,mass,0.1,composite,id,comp2,location,1,1,1,rotation,2,2,2,mass,0.5,custom,color,green,scale,0.05,location,0,0,0,rotation,-90,0,0,file,tablesetup/stl/Teapot.stl,block,xspan,2,yspan,2,zspan,2,location,0,0,-1,rotation,0,0,0,color,red

\*-----------------------------------------------------------\*

- do not need newline character at end of final element

- Attributes can be in any order but must have the attribute name followed by attribute value

- for location and rotation attributes, pass 3 values separated by commas not a 3-tuple

- for composite elements, all child elements should be on same line with attributes immediately following each child element's types

- After initial tabletop element, elements can be in any order line-by-line

- text file with element inputs is passed in via command line

- generated xml file is outputted to current directory and called 'generated\_xml.xml'