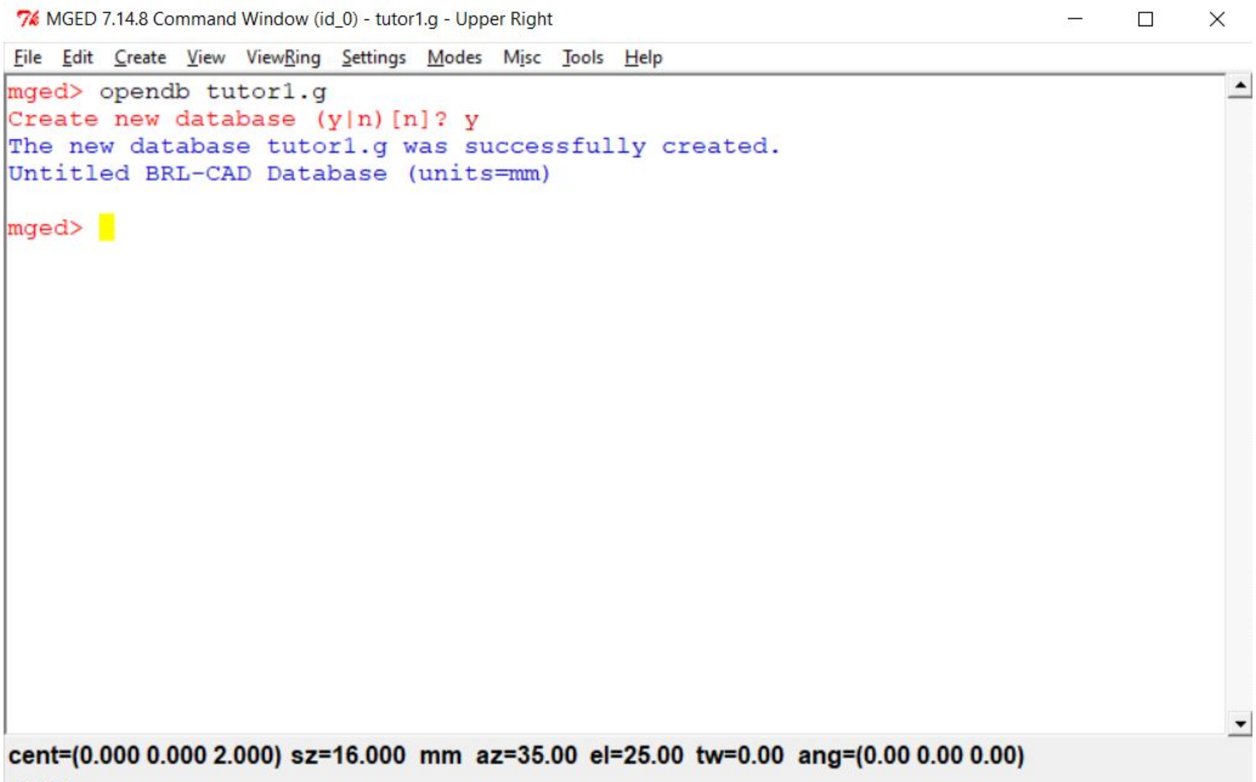
Metaball is one of the primitive types in BRL-CAD and in this tutorial, I will show how to create and inspect a two-point metaball. I would like to create a snowman figure using metaball. This tutorial assumes that you had installed BRL-CAD apps - MGED and Archer.

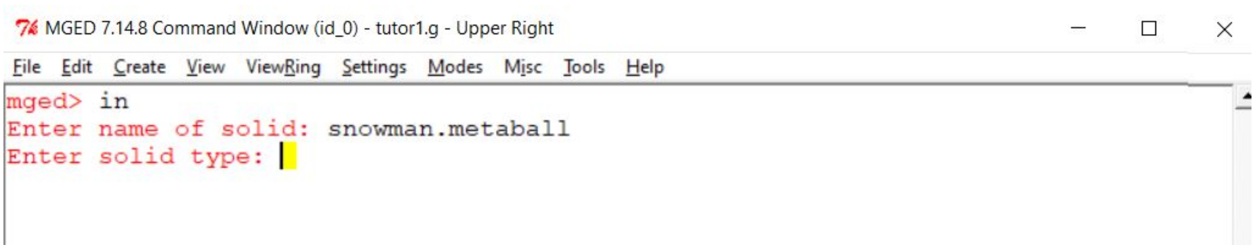
Step 1: Open MGED by clicking on ***MGED***. This will open three windows .
Step 2: In MGED Command window, create a database by entering ***opendb*** your db name. I had created with a new db called ***tutor1.g***. When you give a new db name, then you need to confirm that name by typing ***y*** and enter. Default value is ***n***.



Once db is created, you get confirmation that a new database is created.
If you want to use existing db then enter opendb existing db name.

Step 3: Within the db (***tutor1.g***), I will create a snowman figure using metaball. To create a snowman figure, there are two options - interactive passing of all values or enter them at once.

To pass each of the values interactively, please type ***in*** and enter. Then MGED will ask for each of the required values.



This is a partial example of interactive in command and you can enter the rest of values.

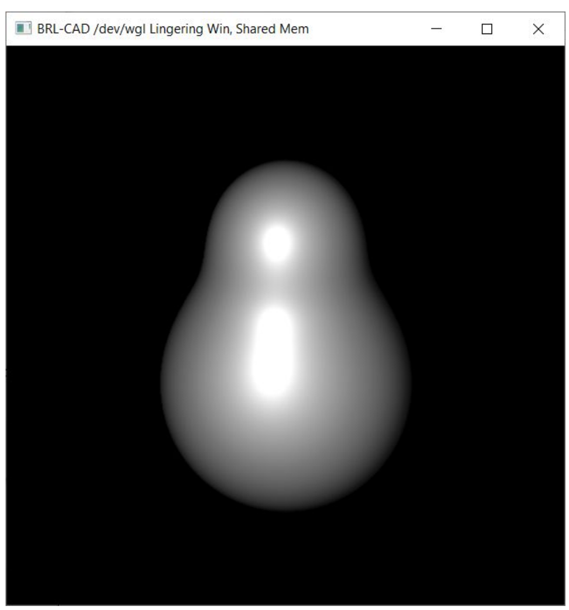
Alternatively you can enter all required values at one like this : ***in snowman.metaball metaball 1 3 2 0 0 0 6 0 0 5 3***

```
mged> in snowman.metaball metaball 1 3 2 0 0 0 6 0 0 5 3
mged> rt
```

It is long command with lot of digits, so I will explain what each one means (in the same order as given above):

- in - To create an object (like metaball)
- Name of solid - snowman.metaball
- Solid Type - metaball
- Render Method: 1
- Threshold: 3
- Number of points - 2 , since I wanted snowman with two objects (head and body)
- X, Y, Z, Field Strength: 0 0 0 6. First three are coordinates for body and the last one is for size. So I had asked first point to be generated at the origin (0,0,0) with field strength (or radius) of 6.
- X, Y, Z, Field Strength: 0 0 5 3. First three are coordinates for head and the last one is for size. As you can see, Z coordinate is different for second object created and it is because I wanted the second object to be head to be placed certain height over first one! Since radius of first ball is 6, I am placing it at 5 to get the necessary height. Last value passed is the field strength of the second ball.

Step 5: Please enter ***rt*** to raytrace the objects and snowman, created in earlier step, is generated as follows:



Step 6: To understand what we have created, let us inspect the ***tutor1.g***. To check the contents of db, please type ***ls*** in Command Window.

```
mged> ls
snowman.metaball
```

It lists snowman.metaball object that I had just created.

To check the properties of the metaball that I had created, please type ***l snowman.metaball.***

```
mged> l snowman.metaball
snowman.metaball:  Metaball with 2 points and a threshold of 3 (Isopotential ren
dering)
        1: 6 field strength at (0, 0, 0)
        2: 3 field strength at (0, 0, 5)
```

It lists all the details of snowman.metaball object, like the metaball is of Isopotential rendering with 2 points, field strengths of each points, and coordinates of each of the points.