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***. After giving a new db name, 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 entry in command window 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***



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

* To create an object (like metaball) - in
* 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 the coordinates for the body and the last one is for the 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.



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.***

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