SC-303
Mid-Term Report

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Authors

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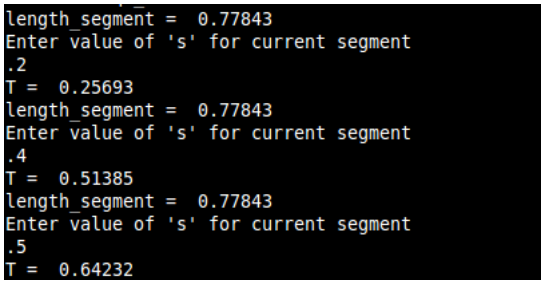
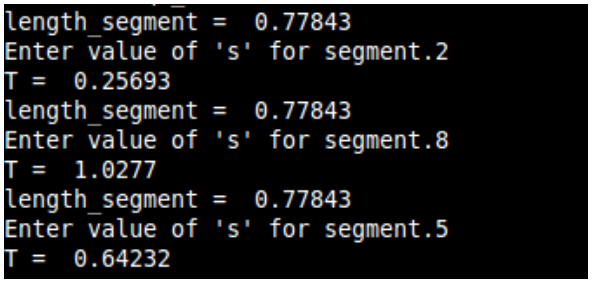
1 Problem 1

1.1 Part a

Given n points in 3-D space, where n $\geq$ 4 in order to generate a cubic B-spline segment. And, arc length of each segment, such that arc length $\in$ [0,length of segment].
Now, given thse inputs we have to find value of t(time), such that the speed is unit value.
Output:



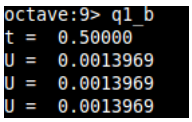


We can see that, in second image where arc length is greater than L, the vallue of t becomes greater than 1, which is wrong.

1.2 Part b

Given n points in 3-D space, where n $\geq$ 4 in order to generate a cubic B-spline segment. Secondly, speed as a function of time and a particular value of t at which we are supposed to find relation between t & u.
Now, given these inputs we have to find value of t(time), such that the given by user as an input.

Output:

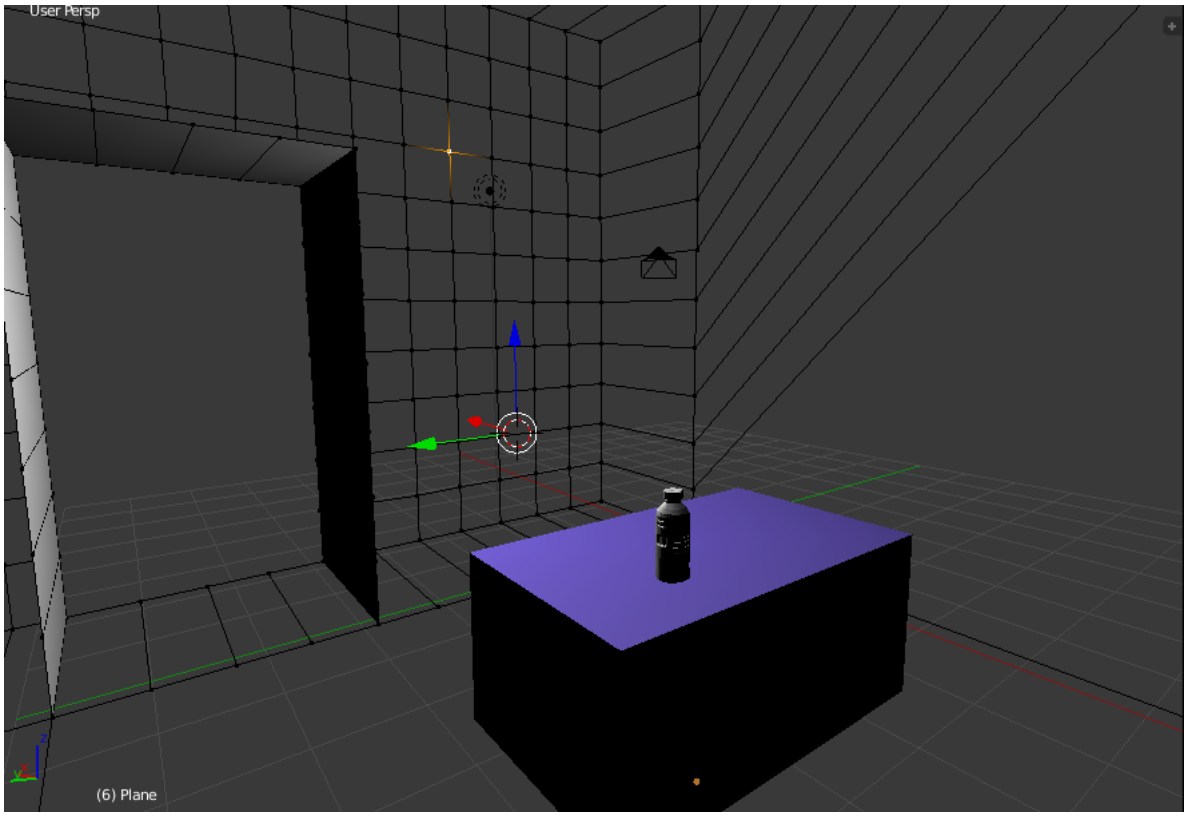


2 Problem 2

The main question asked through this problem is to maintain the idea of real-world, as in real-world human is not supposed to just pass through walls. **Approach**

1. First using Blender we have create a 3-D model of a room with a table and a bottle(geometric object) on the table. Then we exported it as .obj file containing all information about objects.

2. The main objective of this problem is to allow user to walk through the room with the help of keyboard and rotate it's view using arrow keys.


User Persp
(6) Plane