**Q. No. 1: (10 points) Concept Application**: **(Binary Search Tree)**

1. Fill in the below tables to trace **code 2 (**get the initial values of parameters from **code 3)**

***note:*** *to fill in the table follow the example in the appendix*

|  |  |  |
| --- | --- | --- |
| Input: start= 0 end=6 | Input: start=0 end=2 | Input: start=0 end=0 |
| Compute:  Mid=3  Root= 4 | Compute:  Mid= 1  Root= 2 | Compute:  Mid=0  Root=1 |
| Left of 4= (0,2) s:1 | Left of 2= (0,0) s2 | Left of 1= (0,-1) s:3 |
| Right of 4=(4,6) s:8 | Right of 2=2,2) s:5 | Right of 1=(1,0) s:4 |

|  |  |  |
| --- | --- | --- |
| Input: start=2 end=2 | Input: start=4 end=6 | Input: start=4 end=4 |
| Compute:  Mid= 2  Root= 3 | Compute:  Mid= 5  Root= 6 | Compute:  Mid=4  Root=5 |
| Left of 3= (2,1) s:6 | Left of 6= (4,4) s:9 | Left of 6= (4,3) s:10 |
| Right of 3=(3,2) s:7 | Right of 6=(6,6) s:12 | Right of 6=(5,4) s:11 |

|  |
| --- |
| Input: start=6 end=6 |
| Compute:  Mid= 6  Root=7 |
| Left of 7= (6,5) s:13 |
| Right of 7=(7,6) s:14 |

1. Draw the BST (the tree) that results from executing **code 2**

1. BST has better performance and why?

* The BST of code2 because its depth smaller

1. (optional) What is the name of the resulting BST?

* Complete BST