**CS 515 Exercise D04: Binary heaps**

\_\_\_\_\_ /50

**Names: Ryan J. Skelly\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Wildcats ID’s : 988977861\_\_\_\_\_\_\_\_**

**Lecture Section: 02**

**[20 pts.]** Build a binary min heap given the following values. Use Floyd’s algorithm.

**12, 5, 11, 3, 10, 6, 9, 4, 8, 1, 7, 2**

**12**

**12**

***5 11 5 11***

3 10 6 9 3 1 2 9

4 8 1 7 2 4 8 10 7 6

12 1

1 2 3 2

3 5 6 9 4 5 6 9

4 8 10 7 11 12 8 10 7 11

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 3 | 2 | 4 | 5 | 6 | 9 | 12 | 8 | 10 | 7 | 11 |

*More on the back…*

**[30 pts.]** Build a binary max heap given the following values. Use Floyd’s algorithm.

**1, 5, 11, 3, 10, 6, 9, 4, 8, 12, 7, 2**

1

1 5 11

5 11

8 12 6 4

3 10 6 4 4 3 10 7 2

4 8 12 7 2

1 12

12 11

10 11

8 10 6 4

8 7 6 9

4 3 5 7 2 4 3 5 1 2

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 12 | 10 | 11 | 8 | 7 | 6 | 9 | 4 | 3 | 5 | 1 | 2 |