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COT 5405 – Homework 2

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1.

Iteration	Visited nodes	Node List
1	1, INF, INF, INF, INF	
2	1, 5, INF, INF, INF	(1,5)
3	1, 5, 4, INF, INF	(1,5), (5,4)
4	1, 5, 4, 2, INF	(1,5), (5,4), (4,2)
5	1, 5, 4, 2, 3	(1,5), (5,4), (4,2), (1,3)

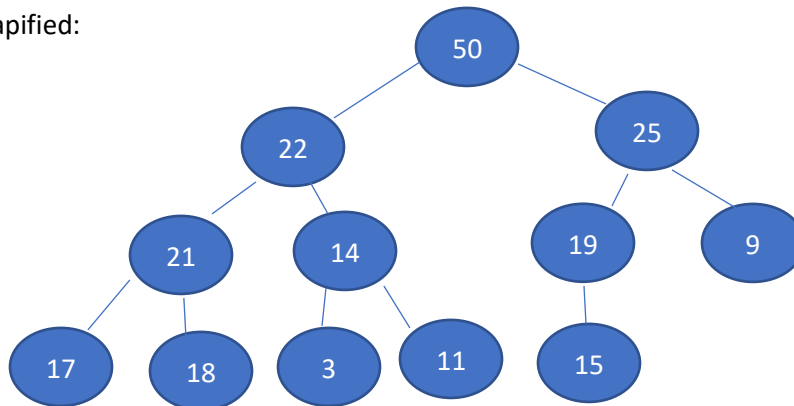
2. a=01, e=10, o=11, u=000, y=001

3.

Iteration	edges
1	(1,2)
2	(1,2), (2,3)
3	(1,2), (2,3), (4,5)
4	(1,2), (2,3), (4,5), (6,7)
5	(1,2), (2,3), (4,5), (6,7), (4,7)
6	(1,2), (2,3), (4,5), (6,7), (4,7), (1,4)

Iteration 4 is the 3-cluster of maximum spacing with the maximum spacing being 4. I used k-1 after all edges were found

4. Heapified:



Sorting:

Heapified	0	1	2	3	4	5	6	7	8	9	10	11
X	50	22	25	21	14	19	9	17	18	3	11	15
	<u>15</u>	<u>22</u>	25	21	14	19	9	17	18	3	11	50
	22	<u>15</u>	<u>25</u>	21	14	19	9	17	18	3	11	
	22	25	<u>15</u>	21	14	<u>19</u>	9	17	18	3	11	
	<u>22</u>	<u>25</u>	19	21	14	15	9	17	18	3	11	
X	25	22	19	21	14	15	9	17	18	3	11	
	<u>11</u>	<u>22</u>	19	21	14	15	9	17	18	3	25	
	22	<u>11</u>	19	<u>21</u>	14	15	9	17	18	3		
	22	21	19	<u>11</u>	14	15	9	<u>17</u>	18	3		
	22	21	19	<u>17</u>	14	15	9	11	<u>18</u>	3		
X	22	21	19	18	14	15	9	11	17	3		
	<u>3</u>	<u>21</u>	19	18	14	15	9	11	17	22		
	21	<u>3</u>	<u>19</u>	18	14	15	9	11	17			
	21	19	<u>3</u>	18	14	<u>15</u>	9	11	17			
X	21	19	15	18	14	3	9	11	17			
	<u>17</u>	<u>19</u>	15	18	14	3	9	11	21			
	19	<u>17</u>	15	<u>18</u>	14	3	9	11				
X	19	18	15	17	14	3	9	11				
	<u>11</u>	<u>18</u>	15	17	14	3	9	19				
	18	<u>11</u>	15	<u>17</u>	14	3	9					
X	18	17	15	11	14	3	9					
	<u>9</u>	<u>17</u>	15	11	14	3	18					
	17	<u>9</u>	15	<u>11</u>	14	3						
	17	<u>11</u>	15	9	<u>14</u>	3						
X	17	14	15	9	11	3						
	<u>3</u>	<u>14</u>	15	9	11	17						
	14	<u>3</u>	15	<u>9</u>	11							
	<u>14</u>	9	<u>15</u>	3	11							
	15	<u>9</u>	14	3	<u>11</u>							
X	15	11	14	3	9							
	<u>9</u>	<u>11</u>	14	3	15							
	<u>11</u>	9	<u>14</u>	3								
X	14	9	11	3								
	<u>3</u>	<u>9</u>	11	14								
	<u>9</u>	3	<u>11</u>									
X	11	3	9									
X	9	3	11									
X	3	9										
X	3											

Sorted Array:

3, 9, 11, 15, 17, 18, 19, 21, 22, 25, 50