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Microsoft Windows [Version 10. 0. 17134. 345]
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Pront=> 1 3 5 <=Rear

Queue 1:

Front=> 1 3 5 <=Rear

Queue 3:

Front=> 13 15 17 <=Rear

C:\Borland\BCC55\Bin>
```

## โค้ดที่เขียนใน notepad

```
1. #include <stdio.h>
2. #include <stdlib.h>
3. typedef struct node
4. {
5. void* dataPtr;
6. struct node* next;
7. } QUEUE NODE;
8. typedef struct
9. {
10. QUEUE_NODE* front;
11. QUEUE NODE* rear;
12. int count;
13. } QUEUE;
14. QUEUE* createQueue (void);
15. bool enqueue (QUEUE* queue, void* itemPtr);
16. void printQueue (QUEUE* stack);
17. int main (void)
```

```
18. {
19. QUEUE* queue1;
20. QUEUE* queue2;
21. QUEUE* queue3;
22. int* numPtr;
23. int** itemPtr;
24. queue1 = createQueue();
25. queue2 = createQueue();
26. queue3 = createQueue();
27. int i=1;
28. numPtr = (int*)malloc(sizeof(i));
29. *numPtr = i;
30. enqueue(queue1, numPtr);
31. i=3;
32. numPtr = (int*)malloc(sizeof(i));
33. *numPtr = i;
34. enqueue(queue1, numPtr);
35. i=5;
36. numPtr = (int*)malloc(sizeof(i));
37. *numPtr = i;
38. enqueue(queue1, numPtr);
39. i=7;
40. numPtr = (int*)malloc(sizeof(i));
41. *numPtr = i;
42. enqueue(queue2, numPtr);
43. i=9:
44. numPtr = (int*)malloc(sizeof(i));
45. *numPtr = i;
46. enqueue(queue2, numPtr);
```

```
47. i=11;
48. numPtr = (int*)malloc(sizeof(i));
49. *numPtr = i;
50. enqueue(queue2, numPtr);
51. i=13;
52. numPtr = (int*)malloc(sizeof(i));
53. *numPtr = i;
54. enqueue(queue3, numPtr);
55. i=15;
56. numPtr = (int*)malloc(sizeof(i));
57. *numPtr = i;
58. enqueue(queue3, numPtr);
59. i=17;
60. numPtr = (int*)malloc(sizeof(i));
61. *numPtr = i;
62. enqueue(queue3, numPtr);
63. printf ("Queue 1:\n");
64. printQueue (queue1);
65. printf ("Queue 2:\n");
66. printQueue (queue2);
67. printf ("Queue 3:\n");
68. printQueue (queue3);
69. return 0;
70.}
71. QUEUE* createQueue (void)
72. {
73. QUEUE* queue;
74. queue = (QUEUE*) malloc (sizeof (QUEUE));
75. if (queue)
```

```
76. {
77. queue->front = NULL;
78. queue->rear = NULL;
79. queue->count = 0;
80.}
81. return queue;
82. }
83. bool enqueue (QUEUE* queue, void* itemPtr)
84. {
85. QUEUE_NODE* newPtr = (QUEUE_NODE*)malloc(sizeof(QUEUE_NODE));
86. newPtr->dataPtr = itemPtr;
87. newPtr->next = NULL;
88. if (queue->count == 0)
89. queue->front = newPtr;
90. else
91. queue->rear->next = newPtr;
92. (queue->count)++;
93. queue->rear = newPtr;
94. return true;
95.}
96. QUEUE* destroyQueue (QUEUE* queue)
97. {
98. QUEUE_NODE* deletePtr;
99. if (queue)
100.
          {
101.
         while (queue->front != NULL)
102.
          {
103.
          free (queue->front->dataPtr);
104.
          deletePtr = queue->front;
```

```
105.
          queue->front = queue->front->next;
106.
          free (deletePtr);
107.
          }
         free (queue);
108.
109.
          }
110.
          return NULL;
111.
          }
          void printQueue(QUEUE* queue)
112.
113.
          {
          QUEUE_NODE* node = queue->front;
114.
          printf ("Front=>");
115.
116.
          while (node)
117.
          {
          printf ("%3d", *(int*)node->dataPtr);
118.
119.
          node = node->next;
120.
          printf(" <=Rear\n");</pre>
121.
122.
          return;
123.
          }
```