```cpp
 1: // Copyright 2022 Anson Cheang
 2: #ifndef _HOME_IIFORCE_BADNAME_COMP4_PS4B_CIRCULARBUFFER_H_
 3: #define _HOME_IIFORCE_BADNAME_COMP4_PS4B_CIRCULARBUFFER_H_
 4:
 5: #include <stdint.h>
 6: #include <cstdlib>
 7: #include <deque>
 8:
 9: class CircularBuffer {
10:  public:
11: CircularBuffer(size_t capacity);  // create an empty ring buffer,
12: // with given max capacity
13: size_t size();  // return number of items currently in the buffer
14: bool isEmpty();  // is the buffer empty (size equals zero)?
15: bool isFull();  // is the buffer full (size equals capacity)?
16: void enqueue(int16_t x);  // add item x to the end
17: int16_t dequeue();  // delete and return item from the front
18: int16_t peek();  // return (but do not delete) item from the front
19: unsigned int getCap();
20:
21:  private:
22: std::deque<int16_t> list;
23: size_t currentSize;
24: unsigned int maxCapacity;
25: };
26:
27: #endif  // _HOME_IIFORCE_BADNAME_COMP4_PS4B_CIRCULARBUFFER_H_
```