```
    1: // Copyright 2022 Matthew Lorette Anaya, matthew_loretteanaya@student.uml
.edu
    2:
    3: #ifndef _USERS_MATTHEWLORETTEANAYA_DOCUMENTS_UML_COMP_IV_PS4B_CIRCULARBUF
FER_HPP_
    4: #define _USERS_MATTHEWLORETTEANAYA_DOCUMENTS_UML_COMP_IV_PS4B_CIRCULARBUF
FER_HPP_
    5:
    6: #include <stdint.h>
    7: #include <iostream>
    8: #include <string>
    9: #include <sstream>
   10: #include <exception>
   11: #include <stdexcept>
   12: #include <vector>
   13:
   14: class CircularBuffer {
   15:  public:
   16: // create an empty circular buffer, with given max capacity
   17:   explicit CircularBuffer(int capacity);
   18:   int size();
   19:   bool isEmpty();
   20:   bool isFull();
   21:   void enqueue(int16_t x);
   22:   int16_t dequeue();
   23:   int16_t peek();
   24:   void output();
   25:
   26:  private:
   27:   std::vector<int16_t> buff;
   28:   int first;
   29:   int last;
   30:   int cap;
   31:   int s;
   32: };
   33:
   34: #endif  // _USERS_MATTHEWLORETTEANAYA_DOCUMENTS_UML_COMP_IV_PS4B_CIRCULAR
BUFFER_HPP_
```