Stacks and Queues Practical

Question 4

Write the pseudo code for an algorithm which implements a Queue using two stacks. Provide implementations for the enqueue() and dequeue() methods.

```
Create stack1
Create stack2

void enqueue
      push elements into stack1
end enqueue

E dequeue
      If stack1 is empty OR stack2 is empty
            return null;
      end if

      while (stack1 is not empty)
            E temp = stack1.pop
            push temp into stack2.
      end while

   return stack2.pop()
end dequeue
```

Question 5

Write the pseudo code for an algorithm which reverses the elements on a Stack using two additional Stacks (no other data structures are allowed).

```
Create stackToReverse
Create stack1
Create stack2

void reverse
      if stackToReverse is empty OR stackToReverse size == 1
            return stackToReverse
      end if

      while stackToReverse is not empty
            E temp = stackToReverse.pop
            push temp into stack1
      end while
```

```
      while stack1 is not empty
            E temp = stack1.pop
            push temp into stack2
      end while

      while stack2 is not empty
            E temp = stack2.pop
            push temp into stackToReverse
      end while

end reverse
```