Name: _____ Date:_____

Student #: _____

# COMP3021: Java Programming In-class Exercise

The following is a non-generic implementation of the class Queue, which uses the non-generic version of the java.util.Vector , which is also a container type. Your task is to rewrite the Queue class using generics:

```
class Queue {
      Vector v = new Vector();
      public void enqueue(Object o) {
            v.add(o);
   }

      public Object dequeue() {
            if(v.size()==0) return null;
            Object o = v.get(v.size()-1);
            v.remove(o);
            return o;
      }

   public void intake(Queue temp) {
        Object o = temp.dequeue();
        while(o!=null){
              enqueue(o);
              o = temp.dequeue();
        }
    }

   public void toVector(Vector temp){
         for(Object o:v)
               temp.add(o);
   }
}
```

Solution:

```
class Queue<E> {
      Vector<E> v = new Vector<E>();
      public void enqueue(E o) {
            v.add(o);
   }

      public E dequeue() {
            if(v.size()==0) return null;
            E o = v.get(v.size()-1);
            v.remove(o);
            return o;
      }

   public void intake(Queue<E> temp) {
        E o = temp.dequeue();
        while(o!=null){
              v.add(o);
              o = temp.dequeue();
        }
    }

   public void toVector(Vector<E> temp){
         for(E o:v)
               temp.add(o);
   }
}
```