**Southern New Hampshire University**

**CS 405: 4-2 Unit Testing**

**Justin Vallia**

**November 18, 2021**

**Unit Test Names**:

1. HaveMaxSizeGreater
2. HaveCapacityGreater
3. VerifyResizingIncreases
4. VerifyResizingDecreases
5. VerifyResizingDecreasesToZero
6. ClearErasesCollection
7. EraseClearsCollection
8. ReserveIncreasesCapacityNotSize
9. OutOfRangeExceptionVerify
10. PopReducedSize
11. NegativeTestForClearAndAt

**Unit Testing**:   
We implemented test cases utilizing, ASSERT,EXPECT and FAIL. Specifically using ASSERT to compare or for greater than or less than operations whereas we used EXPECT and FAIL in negative tests.   
  
  
**Negative Unit Tests**:

For negative testing we used exceptions for out of bounds, one when the collection was not initiated and secondly when we declared collection, added entries, cleared entries and then tried to get the first element using at. **Steps:**1. First step was to understand the Vector library and functions provided in STL.  
2. Second step was to name all test cases one by one, by understanding the TODO.   
3. Third step involved was to understand what to use in each test case ASSERT or EXPECT.  
4. Next step was to replicate the exact requirement asked in TODO.  
5. Negative tests were rather tricky, so needed extra care, as I had to understand try/catch mechanism and use exception in a proper way.