UML Project 4

GenericItemType
(+)abstract boolean isLess(GenericItemType)
(+)abstract Boolean isEqual(GenericItemType)
(+)abstract Boolean isGreater(GenericItemType)

IntegerDataType --- 1: 1 (inherits) -→ GenericItemType
(-)int privateValue
(+)constructors
(+)boolean isLess(GenericItemType) //overrides
(+)boolean isEqual(GenericItemType)
(+)Boolean isGreater(GenericItemType)
(+)accessors (get(), toString())
(+)manipulators

StringDataType --- 1 : 1 (inherits) → GenericItemType
(-)private String privateString
(+)constructors
(+)Boolean isLess(GenericItemType) //overrides
(+)Boolean isEqual(GenericItemType)
(+)Boolean isGreater(GenericItemType
(+)accessors(get(), toString))
(+)manipulators

GenericContainer --- 1:1(uses) → GenericItemType[]
(-) GenericItemType[] collection
(-)private short sizeLIMIT,inDEX,entriesCount
(-)private final int MAXSIZE = 30;
(+) constructors
(+)public void init()
(+)public void add(GenericItemTypeit)
(+)public void sort()
(+)public int BinSearch(GenericItemType[] table, int start, int finish, GenericItemType searchKey)
(+)public GenericItemType Iterator_getNext()
(+)public Boolean Iterator_hasNext()
(+)public void Iterator_Initialize()
(+)accessors(GenericItemType[] getC(), short count())

AppDriver --- 1:2(contains) → GenericContainer

```
Main
{
GenericContainer gC = new GenericContainer();

    gC.add(new IntegerDataItem(13));
    gC.add(new IntegerDataItem(-30));
    gC.add(new IntegerDataItem(100));
    gC.add(new IntegerDataItem(70));
    gC.add(new IntegerDataItem(45));
    gC.sort();
    System.out.printf("     Sorted Integer Collection\n");
    gC.Iterator_Initialize();
    while (gC.Iterator_hasNext())  {
       IntegerDataItem nextOne = (IntegerDataItem
)(gC.Iterator_getNext());
       System.out.printf("  %5d", nextOne.get());
       if (!(gC.Iterator_hasNext())) System.out.printf("\n\n");
    }
    GenericContainer sgC= new GenericContainer();
    sgC.add(new StringDataItem("johnson"));
    sgC.add(new StringDataItem("dixon"));
    sgC.add(new StringDataItem("adams"));
    sgC.add(new StringDataItem("Baker"));
    sgC.add(new StringDataItem("Lee"));
    sgC.add(new StringDataItem("Camille"));
    sgC.sort();
    System.out.printf("     Sorted string Collection\n\n");
    sgC.Iterator_Initialize();
    while (sgC.Iterator_hasNext())  {
       StringDataItem nextOne = (StringDataItem)
(sgC.Iterator_getNext());
       System.out.printf("  %s", nextOne.get());
       if (!(sgC.Iterator_hasNext())) System.out.printf("\n");
    }
      System.out.println("");
      System.out.println("The position of dixon in the array is: "
      +sgC.BinSearch(sgC.getC(), 0,sgC.count(), new
      StringDataItem("dixon")));
      System.out.println("The position of 13 in the array is:
      "+gC.BinSearch(gC.getC(),0, gC.count(),new IntegerDataItem(13)));

}
```