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)));

}