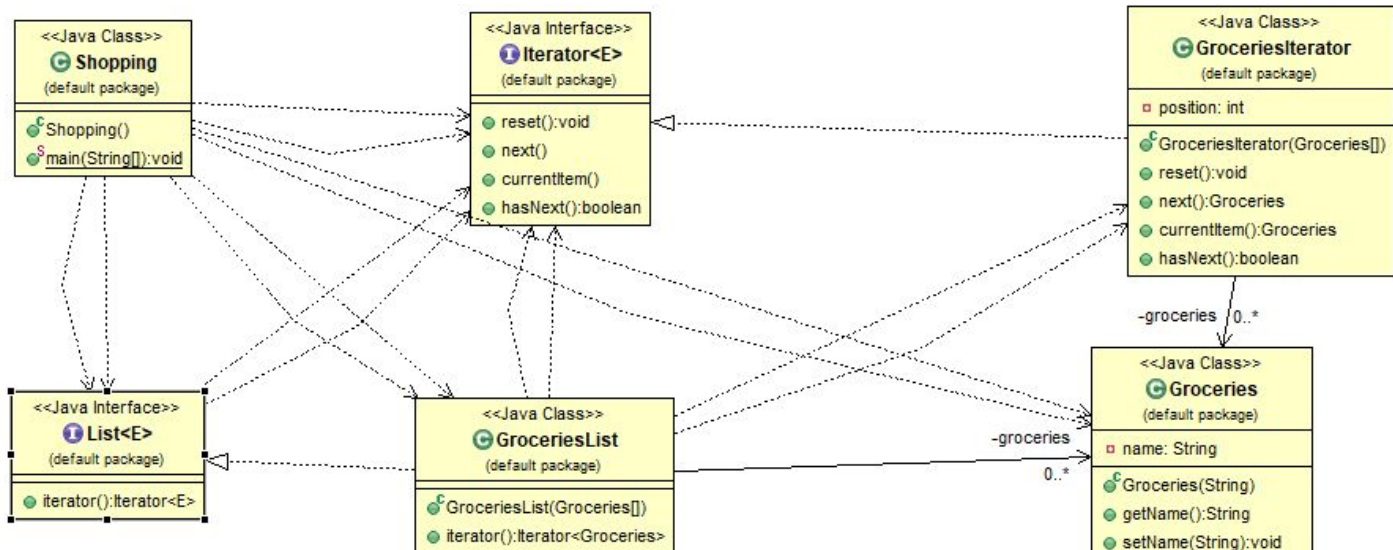


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UML Diagram:



Iterator Interface and 1 implement:

```
public interface Iterator<E> {  
    void reset();  
  
    E next();  
  
    E currentItem();  
    boolean hasNext(); }  
  
-----
```

```
public class GroceriesIterator implements Iterator<Groceries> {  
  
    private Groceries[] groceries;  
    private int position;  
  
    public GroceriesIterator(Groceries[] topics)  
    {  
        this.groceries = topics;  
        position = 0;  
    }  
  
    @Override  
    public void reset() {  
        position = 0;  
    }  
  
    @Override  
    public Groceries next() {  
        return groceries[position++];  
    }  
  
    @Override  
    public Groceries currentItem() {  
        return groceries[position];  
    }  
  
    @Override  
    public boolean hasNext() {  
        if(position >= groceries.length)  
            return false;  
        return true;  
    }  
}
```

```
}  
}
```

List Interface and 1 implement:

```
public interface List<E> {  
    Iterator<E> iterator();  
}
```

```
public class GroceriesList implements List<Groceries> {  
    private Groceries[] groceries;  
  
    public GroceriesList(Groceries[] topics)  
    {  
        this.groceries = topics;  
    }  
  
    @Override  
    public Iterator<Groceries> iterator() {  
        return new GroceriesIterator(groceries);  
    }  
}
```

Groceries Class:

```
public class Groceries {  
    private String name;  
  
    public Groceries(String name) {  
        super();  
        this.name = name;  
    }  
  
    public String getName() {  
        return name;  
    }  
  
    public void setName(String name) {  
        this.name = name;  
    }  
}
```

```
}
```

Test And Compile Shopping Class :

```
public class Shopping
{
    public static void main(String[] args)
    {
        Groceries[] groceries = new Groceries[5];
        groceries[0] = new Groceries("fruit");
        groceries[1] = new Groceries("vegetables");
        groceries[2] = new Groceries("beverages");
        groceries[3] = new Groceries("fish");
        groceries[4] = new Groceries("hygiene");

        List<Groceries> list = new GroceriesList(groceries);

        Iterator<Groceries> iterator = list.iterator();

        while(iterator.hasNext()) {
            Groceries currentTopic = iterator.next();
            System.out.println(currentTopic.getName());
        }
    }
}
```

Working Code:

The screenshot shows the Eclipse IDE interface. The top menu bar includes File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, and Help. The toolbar contains various icons for file operations and development tools. The left sidebar shows the Project Explorer with a tree view containing 'Algo and Design [Java master]', 'FX [Java master]', and 'Object-Oriented Design [Java master]'. The main editor window displays the source code for 'Shopping.java'. The code defines a 'Shopping' class with a 'main' method that initializes an array of 'Groceries' objects, creates a 'GroceriesList' object, and iterates through it to print the names of the groceries. The bottom pane shows the 'Problems' view, which is currently empty. The 'Run and Debug' view shows the output of the program, which is a list of groceries: fruit, vegetables, beverages, fish, and hygiene. The status bar at the bottom indicates the current file is 'Shopping.java', the editor is in 'Write' mode, and the cursor is at line 17, column 36.

```
1 public class Shopping
2 {
3     public static void main(String[] args)
4     {
5         Groceries[] groceries = new Groceries[5];
6         groceries[0] = new Groceries("fruit");
7         groceries[1] = new Groceries("vegetables");
8         groceries[2] = new Groceries("beverages");
9         groceries[3] = new Groceries("fish");
10        groceries[4] = new Groceries("hygiene");
11
12        List<Groceries> list = new GroceriesList(groceries);
13
14        Iterator<Groceries> iterator = list.iterator();
15
16        while(iterator.hasNext()) {
17            Groceries currentTopic = iterator.next();
18            System.out.println(currentTopic.getName());
19        }
20    }
21 }
22
23
```

<terminated> Shopping [Java Application] D:\Java\bin\javaw.exe (Oct 17, 2020, 4:37:16 PM – 4:37:18 PM)

fruit
vegetables
beverages
fish
hygiene

