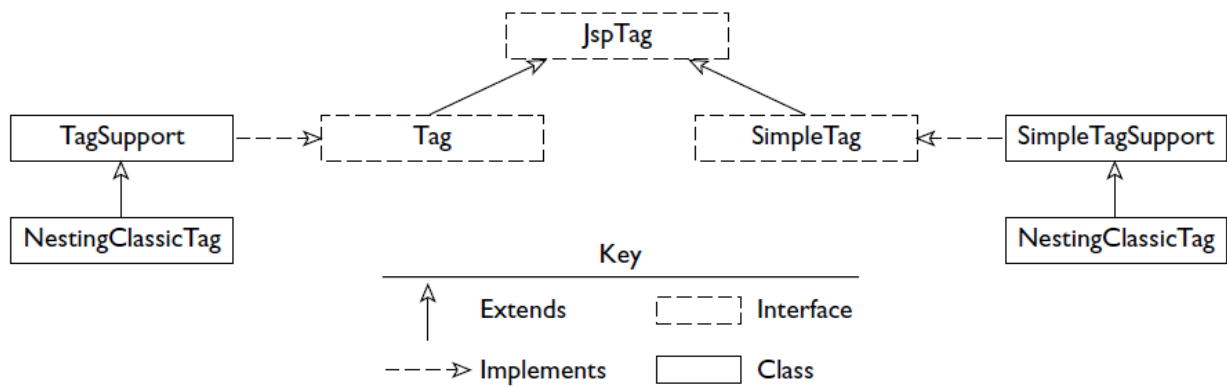**Tag Hierarchies**

1. Describe the use of **findAncestorByClass**() method of **TagSupport** and **SimpleTagSupport**?

   a. **TagSupport** has a static method called findAncestorWithClass(). To this method, you pass in the Tag instance to start from (usually this) and the Class whose type should match a tag handler instance in the hierarchy.

   b. **TagSupport**.findAncestorByClass() returns a Tag reference—this could be a TagAdapter.

   c. **SimpleTagSupport** also has a static findAncestorByClass() method, which receives a JspTag to start from (not a Tag), and returns a JspTag reference of the ancestor.

   d. When using **SimpleTagSupport**.findAncestorByClass() methods, where TagAdapters are encountered, the class comparison is to TagAdapter.getAdaptee() (not directly to the class of the TagAdapter instance).

2. Describe the use of getParent() of Tag and SimpleTag?

   a. Tag has a getParent() method, implemented in TagSupport. The getParent() retrieves the immediate parent of a tag—if there is one. The getParent() returns a Tag reference, which can be cast to something more appropriate if specific methods are needed. As Tag.getParent() can accommodate only Tags, any simple tag higher in the hierarchy is "cloaked" by the JSP container in an instance of TagAdapter.

   b. SimpleTag also has a getParent() method, implemented in SimpleTagSupport. getParent() in SimpleTag also returns its immediate parent, if there is one. However, SimpleTag.getParent() returns a JspTag, so it can accommodate both simple or classic tag parents.

3. What is a TagAdapter?

   a. The TagAdapter class is a wrapper implementing tag which is used to contain a SimpleTag. It is returned from getParent() when a SimpleTag becomes the parent of a Tag.

   b. TagAdapter.getAdaptee() returns the simple tag wrappered by the TagAdapter instance (as a JspTag reference—which you can cast as needed).

  c. All of the service methods of the TagAdapter throw UnsupportedOperationException.

4. How can you get the SimpleTag from the TagAdapter?

  a. TagAdapter.getAdaptee() returns the simple tag wrappered by the TagAdapter instance (as a JspTag reference—which you can cast as needed).

5. Show the Tag hierarchy diagram?

  a. Tag hierarchy can be shown as:

6. Tags define unidirectional relationships. Explain

  a. A tag can communicate with its parent or an ancestor, but knows nothing about its children.