Sample Final Columbia University Shlomo Hershkop Fall 2005 1007 – Intro Object Oriented Programming – Java

007 – Intro Object Oriented Programming – Java		
1. Define the following terms:		
a. StringBuffer		
b. Container		
c. SWT		
d. ZipInputStream		
e. interface		
 Suppose a text file contains the following lines of text, in this format: This is a test it is only a test. 		
		a. When the file is saved, you notice it takes 34 bytes. Why that many?
b. When you use a zip stream to write to disk, you might notice it actually grows in sizewhy would such a thing happen?		

3.	In Java, I can define a class B that has a method M, and another class D that is derived from class B which also has a method M. Further, I can have a variable v that is a reference to type B, which may refer to an instance of B or to an instance of D.		
	a.	If variable v is used to call method M, which method M will be called?	
	b.	If the constructor of class B takes an argument (int,int), show how to define a constructor in class D that passes a value (say the value 321,4) to the base class constructor	
4.		be each of the following four applet event handlers. Indicate the conditions which each is called and what each is typically responsible for doing:	
	a.	void init()	
	b.	void paint(Graphics g)	
	c.	boolean action(Event e, Object o)	
	d.	void stop()	

- 5.
- a. Give two advantages of generics.
- b. Why is the following illegal?if (myList instanceof ArrayList<Integer>) {...}
- 6. Describe how to create graphical user interface (GUI) in Java that will allow the user to enter a mail message. The interface should allow the user to specify the To:, Cc: and Subject: fields of the mail message, the body of the message and should have a means for the user to initiate the following actions: send the message, save the message to a file, add an attachment, and abort the operation (note: you don't need to consider the interfaces to implement these actions). The interface should be laid out in reasonable way and how to use the interface should be readily apparent.

Only show how to create the user interface - nothing needs to be done when fields are entered, buttons pushed, etc. Assume your code is embedded in the constructor of the following class:

7. (Extra Credit) Threads in Java allow several things to be done in parallel. This introduces some unique problems that do not occur in non-threaded (or single-threaded) code. Describe one of these problems, and indicate what facilities exist in the Java language to solve the problem.