**Gujarat technological University**

**B. V. M. Engineering College**

**CP & IT Department**

150704- Object Oriented Programming with Java

**Assignment-2**

**Submission Date: 13-10-2011**

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|  | **Give the answers of following:** |
| 1. | Give the differences between throw and throws. |
| 2. | Give the differences between abstract class and interface with examples. |
| 3. | Write the differences between checked exception and unchecked exception. |
| 4. | Write the various methods for obtaining new (Child) thread. |
| 5. | Differentiate Multitasking and Multithreading process. |
| 6. | Explain life cycle of Thread. |
| 7. | Give the differences between sleep() and wait() methods of thread with example |
| 8. | Explain inter thread communication in Multithreading with example. |
| 9. | What is deadlock? How it’s resolve in Java? **OR** Explain keyword Synchronized with example. |
| 10. | Define generics in Java. Write a program to demonstrate generic interface and generic method. Also write a program to demonstrate generic class and generic constructor. |
| 11. | Explain File constructor, any two methods of class File and method seek. |
| 12. | Explain the Byte Streams and Character Streams with suitable examples. |
| 13. | Give the differences between String and StringBuffer class with examples. |
| 14. | Explain various character extraction methods of String class with example. |
| 15. | How the read and write operations are performed on a file using byte streams? Explain with suitable example. |
| 16. | Explain Vector and ArrayList classes. |
| 17. | Give the differences between Applet and Application program. |
| 18. | Explain life cycle of Applet. |
| 19. | What is the order of method invocation in an Applet? |
| 20. | Explain repaint (), update (), getDocumentBase() and getCodeBase() methods of Applet with suitable examples. |
| 21. | How to pass parameters to applet tag using HTML? Explain with examples. |
| 22. | Explain Event delegation model of JAVA2. |
| 23. | What is an adapter class? Give its advantages. |
| 24. | What is anonymous class in applet? |
| 25. | Explain various Layout managers of Java with examples. |
| 26. | Explain importance of class URL and URL Connection. |
| 27. | What is a Java Beans? Explain advantages of Java Beans. |
| 28. | Explain various types of dialog boxes. Also explain File Dialog with suitable example. |
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|  | **Write a programs for followings:** |
| 1. | Write a program for creating a multithreaded program with following conditions:   1. length of stack is 15 elements 2. Thread named StackInsert pushes integer data on the stack, if the stack is full it notifies the other thread. 3. Thread named StackDelete pops integer data from the stack, if the stack is empty it notifies the other thread. |
| 2. | Write a program for creating an applet which is having   1. three checkboxes named: Red, Green, Blue 2. one button named: Fill   when fill button is clicked it paints a specified region (Rectangle) with the color combination according to the selection of checkboxes. |
| 3. | Write a multithread program to fulfill following requirements.   1. A **CourierQueue** which can accommodate maximum ten courier packets. This queue is accessible by two threads. 2. First thread named **Packet** puts the packet of different weights on the CourierQueue. If the queue is full then only the packet thread waits. 3. Second thread named **Charges** gets the packet from the CourierQueue, calculates the charges of the received packet and prepares a label which can be put on the packet. (for e.g. 10gm packet-20Rs, 20gm packet-30Rs, etc…). If the queue is empty then only the charges thread waits. 4. Show proper interthread communication. |
| 4. | Write a program for exception handling for the following:  Take student id from command line argument. The student id must be of six characters only, where first two characters indicate year of entering the college, next two specifies the disciplines and last two gives the serial number.  If the year of entry is exceeding the current year then program throws custom exception: **NotValidYearException**  If the discipline is not either CP or IT, it throws **NotValidDisciplineException**  If the serial number is not between 00 to 99 it throws **ArithmaticException.** |
| 5. | Write a program for client-server application where client sends the name of the file and one character to the server. After getting the data from the client, server finds the total number of occurrence of that character in the given file and sends the character count back to the client. |
| 6. | Write a program to which lists all the file having extension ‘.txt’ in the specified directory. Use **FiilenameFilter** interface only. |
| 7. | Write an applet program to demonstrate the progress bar using Thread. |
| 8. | Write a program to create a frame which contains   1. A menu bar, having menu –**Reservation** and menu items – **By Air, By Rail, By Road** 2. Two labels – **Sources** and **Destination** 3. Two text boxes to get the source and destination stations. 4. Button – **Route Availability** to check the availability of the route from source to destination by the way specified.(air, rail or road) 5. Button – **Seat Availability** to check the total numbers of seats available of route and specified way. |
| 9. | Write a Java program to find number of characters and number of digits excluding special characters, blank spaces, tabs in file |
| 10. | Write a Java program to display the sub directories’ names of the given directory and then that sub directories’ files and subdirectories. |
| 11. | Create an applet to move a circle in the specified direction. Get the direction details through applet parameter. For e.g. left to right. |
| 12. | Write a java program for producing GUI in a Frame with following specifications:   1. Grid Layout of size 4 x 2 2. Two text fields for accepting two operands (integer or float) 3. 4 buttons for doing tasks: **add, sub, clear** all and **quit** 4. The result of **add** and **sub** should be placed in only one text filed 5. Use windowAdapter class for giving exit capability from frame. |
| 13. | Create an applet where one circle moves along a path, when it touches the border of the applet, it changes its direction. |