

Java Assignment (BCA/BE Computer)

Chapter 1: Fundamentals

1. Write short note on Java and its features.
2. Write a program to find largest number in four command line arguments. Use if condition and conditional operator to accomplish the task. Do not use && or || operator.
3. Write a program to find net bill amount for electricity consumed:
 - a. If consumed unit is less or equal to 80, cost will be 300
 - b. If consumed unit is greater than 80 and less than 200, rate for all units above 80 will be NRs. 7.5.
 - c. If the consumed unit is greater than 300 than, rate is NRs. 12.
4. Write a program to find triangles as shown below:

a.

1

2 2

3 3 3

4 4 4 4

5 5 5 5 5

b.

1

2 3

4 5 6

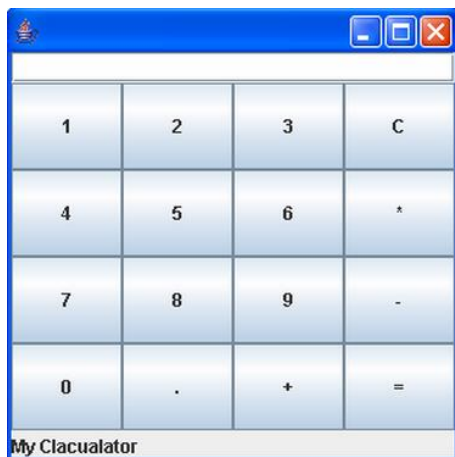
7 8 9 10

5. Write a program to find Largest number in an array. The size of the array should be passed as command line argument. And the program should be dynamic to work with any length. Take help of **Random** class to generate random number (should be integer) and assign to each index of an array.
6. Write a program to demonstrate factuality of Vector class.
7. Scenario: you are require to develop a software for a bank, design and write program to demonstrate different components and its association with the help of Class hierarchy.
8. How do you create Package in java? What are the different ways to implement package. Illustrate with example.
9. Why Interface is used introduced in Java? Explain with example.

10. Write a program to handle an exception which should be occurred when the value of `balance_account < 0`. Create a custom exception class and use it.
11. Write a program in Java to print random numbers. One thread should print values in rand of 100 and next thread should print the number in 1000. You should write 2 different program one using Thread class and next using Runnable interface.
12. Write a program to find Fibonacci series using loop
13. Write a program to demonstrate different Collection classes.
14. Write a program to find the average of marks you obtained in your 10+2 class.
15. Write a program with class Rectangle with the data fields width, length, area and colour. The length, width and area are of double type and colour is of string type .The methods are `set_length()` , `set_width()` , `set_colour()`, and `find_area()` . Create two object of Rectangle and compare their area and colour. If area and color both are the same for the objects then display Matching Rectangles, otherwise display Non-matching Rectangle.
16. Write a program to create a Player class. Inherit the classes Cricket _Player, Football _Player and Hockey_ Player from Player class
17. Write a class Worker and derive classes DailyWorker and SalariedWorker from it. Every worker has a name and a salary rate. Write method `wages_per_week(int hours)` to compute the week pay of every worker. A Daily Worker is paid on the basis of the number of days s/he works. The Salaried Worker gets paid the wage for 40 hours a week no matter what the actual hours are. Test this program to calculate the pay of workers.
18. Write a program which implements interface Student which has two methods `Display_Grade` and `Attendance` for PG_Students and BCA_Students
19. Write a program in java for generating 2 threads, one for printing even numbers and the other for printing odd numbers.
20. Write a Java program to demonstrate thread synchronization.

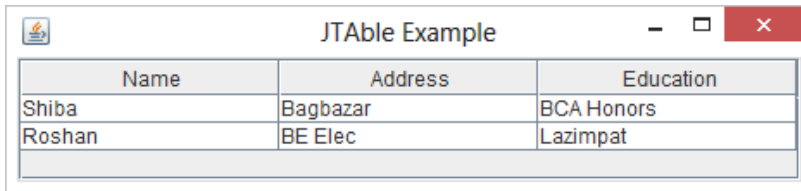
Chapter 2 Applet, 3 GUI and 4 JDBC

1. Write a program to generate simple calculator as shown below. Also add functionality to each button.



2. Write a program to display Date in an Applet (using Label). Now you are require to split Year, month, day, hours, minutes and second and show separately in different labels when a button called split is pressed.

- Write a program to draw circle and a rectangle in an applet. The parameter for both circle and rectangle should be passed from HTML.
- Write a program to query database and display all data using JTable in a window as shown below. The data should be filtered such as name starts with S or R:



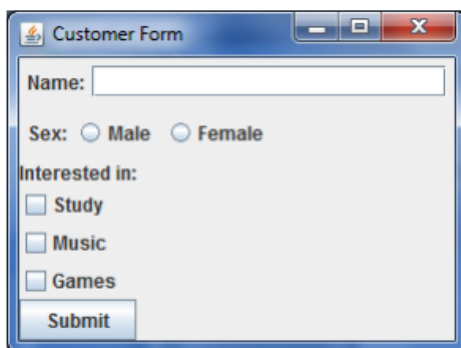
Name	Address	Education
Shiba	Bagbazar	BCA Honors
Roshan	BE Elec	Lazimpat

- Add a text field called 'Search by Name' in above window and also add a button call Search. When you type S and press Search button should list all records where name start with S. Similarly when user type S, R and press Search button, all the records where name starts with S or R should be displayed in the table.
- Write a program to list all data in table above (in q. 4) and populate it in tree, Education should be the root Item, address should be sub item and name of student should be placed based on address in each address.

For example

```
BCA
  Bagbazar
    Shiba
    Ram
  BE
    Bagbazar
    Hari
    Kalanki
    Sita
    Gita
```

- Write a program to generate following GUI and also add functionality so that when submit button is clicked, data should be saved to file along with saved Date time. Each fields should be separated by comma.



Customer Form

Name:

Sex: Male Female

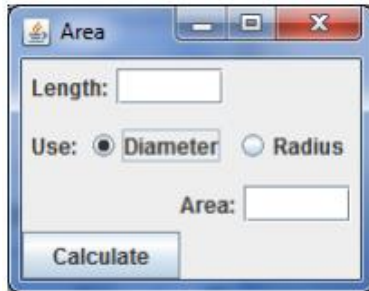
Interested in:

Study

Music

Games

- Write a Swing program which will calculate Area of circle for the length of Diameter or Radius as selected by user. And Display it in Area.



Chapter 5 Servlet and JSP

1. Write a program in JSP which will display "Welcome to JSP".
2. Write a program in Servlet which will display "Welcome to Servlet"
3. Write a program in servlet where user passes his/her name to Servlet via HTML form and Servlet need to search details in database and display it in HTML format.

Chapter 6: Database

1. Write a program which will select all records from table emp in which department is "account" and salary is greater than 10000. (do your own assumption for table fields and data). (use Statement and PreparedStatement).
2. Write a sample program using Java that should do following:
 - a. Create a table named emp(id int, name varchar(20), address varchar(30))
 - b. Insert 4 sets of records
 - c. Update the address of the first record which you have inserted
 - d. Delete the last second record which you have inserted.

Chapter 7: TCP/IP

1. Write a TCP/IP program to demonstrate echo server
2. Write a TCP or UDP program where if use input date in console of client, server returns its data as return parameter to client. Then client will display it console.
3. Write TCP or UDP simple chat program.
4. Please go through all BCA/BE Past question for other examples.

Chapter 8: RMI

1. A computer with IP address 10.2.0.1 contains method called areaCircle (double length). Write complete programs for both server and client so that client computer can call method in the server 10.2.0.1. When the client machine calls areaCircle method, it should display area of circle in client machine's console.
2. A computer with IP address 10.20.0.100 contain method called area (double height, double width). Write complete programs for both server and client so that client computer can call method in the server 192.168.0.100. When the client machine calls area method, it should display area of rectangle in client machine's console.
3. A computer with IP address 10.10.10.10 contains method concat (String txt1, String txt2). Write a complete program for both server and client so that client computer can call method, it should

merge two texts passed as parameters to method concat and display resultingString to client machine's console.

4. A computer with IP address 10.10.10.10 contains method fname_n_address (String name). Write a complete program for both server and client so that client computer can call the method and display the record of the name which is passed as parameter. The record is stored in database (use same database as of Q. 4).

Chapter Java Beans (For BE Computer only)

1. What do you understand by Java bean? Discuss with suitable example.
2. Swing is a good example of Java Bean. Discuss with example how Swing can be considered as Java Bean.
3. See other question from pass exam papers.