Please make sure that you test your code before you submit it to us. For correct answers we will also be grading the code efficiency. Even if you can't answer a question, we would like to know your approach on how you would solve the problem.

MySQL

1) Write a query to rank order the following table in MySQL by votes, display the rank as one of the columns.
   CREATE TABLE votes (name CHAR(10), votes INT);
   INSERT INTO votes VALUES
   ('Smith',10), ('Jones',15), ('White',20), ('Black',40), ('Green',50), ('Brown',20);

2) Write a function to capitalize the first letter of a word in a given string; Example: initcap(UNITED states Of AmERIca) = United States Of America

3) Write a procedure in MySQL to split a column into rows using a delimiter.
   CREATE TABLE sometbl (ID INT, NAME VARCHAR(50));
   INSERT INTO sometbl VALUES (1, 'Smith'), (2, 'Julio|Jones|Falcons'), (3, 'White|Snow'), (4, 'Paint|It|Red'), (5, 'Green|Lantern'), (6, 'Brown|bag');
   For (2), example rows would look like >> "3, white", "3, Snow" …

4) I have a table for bugs from a bug tracking software; let's call the table "bugs". The table has four columns (id, open_date, close_date, severity). On any given day a bug is open if the open_date is on or before that day and close_date is after that day. For example, a bug is open on "2012-01-01", if it's created on or before "2012-01-01" and closed on or after "2012-01-02". I want a SQL to show number of bugs open for a range of dates.

JAVA

1) Write an efficient algorithm to check if a string is a palindrome. A string is a palindrome if the string matches the reverse of string.
   Example: 1221 is a palindrome but not 1121.

2) Write an efficient algorithm to find K-complementary pairs in a given array of integers. Given Array A, pair (i, j) is K- complementary if K = A[i] + A[j];

3) Given a large file that does not fit in memory (say 10GB), find the top 100000 most frequent phrases. The file has 50 phrases per line separated by a pipe (|). Assume that the phrases do not contain pipe.
   Example line may look like: Foobar Candy | Olympics 2012 | PGA | CNET | Microsoft Bing ….
   The above line has 5 phrases in visible region.