

## Java Assignment Problems

### 1. Write Function to Check if 2 Strings are Anagram of each other.

```
public static boolean checkAnagram(String string1, String string2)
{
    string1 = string1.toLowerCase();
    string2 = string2.toLowerCase();
    char[] s1 = string1.toCharArray();
    char[] s2 = string2.toCharArray();
    int n1 = s1.length;
    int n2 = s2.length;
    if (n1 != n2)
    {
        return false;
    }
    Arrays.sort(s1);
    Arrays.sort(s2);
    for (int i = 0; i < n1; i++)
    {
        if (s1[i] != s2[i])
            return false;
    }
    return true;
}
```

### 2. Print below start pattern

```
*      *
 *     *
  *
 *   *
*      *
```

```
import java.util.*;
public class Pattern
{
    public static void main(String []args)
    {
        for(int i=1;i<=5;i++)
        {
            for(int j=1;j<=5;j++)
```

```

        {
            if(j==i || j==5-i+1)
                System.out.print("*");
            System.out.print(" ");
        }
        System.out.println("");
    }
}

```

**3. You have a 100-story building and n eggs. When you drop an egg from any floor of the building, the egg will either break or survive the fall. If the egg survives, then the egg will survive on lower floors. If the egg breaks, then the egg will break on higher floors. You'd like to find the minimum floor that will break an egg. What is the fewest number of drops in which you are guaranteed to find the right floor?**

As we have n eggs we can apply the Binary Search algorithm by which we can make an array of floors 1 to 100 then dividing checking the first egg at middle i.e.  $(1+100)/2=51$ . If the egg breaks at floor 51 then we have to check the array from 1 to 50 and if egg does not break at 51 then we have to check the array 51 to 100. Assuming the egg breaks at 51 then we will find the next middle floor by using the same algo in the array 1 to 50 i.e.  $(1+50)/2=25.5$ . Now checking at the 25th floor and repeating the algorithm. So, considering the n number of eggs and 100 floors we will have to travel 7 floors to find a definite floor.

E.g. if we have 1 egg and 100 floors then in the worst case we have to traverse all 100 floors to find the right floor.

If we have 2 eggs and 100 floors considering the divide and conquer approach considering the first egg breaks at xth floor then we will try (x-1) floors

If egg does not break then we need to jump

$$x + (x-1) + (x-2) + \dots + 1 = 100$$

$$x(x+1)/2 = 100$$

$$x = 13.651$$

Then x is approx 14 trials in the worst case.

## **Content Writing**

Sports are an essential part of a person's life. In my opinion everyone should play sports so as to keep his/her body fit and by playing sports a person grows both physically and mentally. By playing sports the mind of a person evolves and it gives a person the ability to make decisions which can be either choosing the right path for winning the game or the decisions that we make in life. Playing sports teaches us many lessons like winning and losing are integral parts of any game. Likewise, success and failure are also integral parts of life but important is that we should give our 100 percent effort without worrying about the outcome.

I like to play many sports like cricket, badminton, volleyball, basketball, etc. but among all I love cricket the most. I love to play and watch cricket. I have played cricket till the university level but did not get a chance to pursue it professionally. In cricket my favourite player is MS Dhoni not just because he was the two times world cup winning captain of the Indian team or he was the best captain India has ever had but among all he is a very strong headed person. He is the person who believes in the present and not worrying about the future. He likes to believe that if we invest our hard work in the present then the future will be fruitful and that is one of the main reasons he is my favourite player. Another quality of him is that he is a great thinker and takes very planned decisions. He likes to be a step ahead of the opposition and controlling the game his way in which I think he is the master.