Study Hint Folder

1) Study given codes in “Task01” and complete it

Run the program and play with it for a while. Once you understand how the program is working, start with the next paragraph.

Once sorting example for number (mark) and another for string (ID) was done for you. Learn from that and write codes for sorting by section and name in respective methods.

2) For Task1, Generate javadoc like shown in the doc folder inside the Hint folder.

Help:
http://www.drjava.org/docs/user/ch10.html
http://www.oracle.com/technetwork/java/javase/documentation/index-137868.html#format

3) Complete the given Task03.java file using Scanner

Use the last constructor from
https://docs.oracle.com/javase/8/docs/api/java/util/Scanner.html

4) Complete the given Task03.java file using StringTokenizer.

Hint:
http://www.kodejava.org/examples/15.html
https://docs.oracle.com/javase/8/docs/api/index.html?java/util/StringTokenizer.html
http://www.java-samples.com/showtutorial.php?tutorialid=236

5) Complete Task03 using String.split()

Hint:
http://www.rgagnon.com/javadetails/java-0438.html
http://www.devdaily.com/java/edu/pj/pj010006

Task 6) Happy Number

Source: http://online-judge.uva.es/p/v105/10591.html

Let the sum of the square of the digits of a positive integer S_0 be represented by S_1. In a similar way, let the sum of the squares of the digits of S_1 be represented by S_2 and so on. If $S_i = 1$ for some $i \geq 1$, then the original integer S_0 is said to be Happy number. A number, which is not happy, is called Unhappy number. For example 7 is a Happy number since 7 -> 49 -> 97 -> 130 -> 10 -> 1 and 4 is an Unhappy number since 4 -> 16 -> 37 -> 58 -> 89 -> 145 -> 42 -> 20 -> 4.

Input

The input consists of several test cases, the number of which you are given in the first line of the input. Each test case consists of one line containing a single positive integer **N** smaller than 10^9.

Output

For each test case, you must print one of the following messages:

```
Case #p: N is a Happy number.
Case #p: N is an Unhappy number.
```

Here **p** stands for the case number (starting from 1). You should print the first message if the number **N** is a happy number. Otherwise, print the second line.

Sample Input	Output for Sample Input
3 7 4 13	Case #1: 7 is a Happy number. Case #2: 4 is an Unhappy number. Case #3: 13 is a Happy number.

Problemsetter: Mohammed Shamsul Alam
International Islamic University Chittagong (IIUC)
Special thanks to Muhammad Abul Hasan

More Information:

- http://en.wikipedia.org/wiki/Happy_number
- http://mathworld.wolfram.com/HappyNumber.html

Command Line

Task 7

Learn the usage of following commands. [Take help from http://www.computerhope.com/msdos.htm or google]

Command	Summary	Highlights
cmd	New command line / console in Windows Vista/7	• Command prompt using both a. Dr. Java (in interaction pane) b. Console (cmd) • 8.3 File naming system • Handing paths with spaces using double quotes • Write a java program that take 3 numbers from the user and prints their sum. Run your program using both c. Dr. Java d. Console
command	Old / Traditional command line / console in Windows XP and older systems.	
cd	Change Directory / Folder. Another similar command is **chdir**.	
c**:**	To go to C drive. Similarly, typing **d:** and pressing enter (↵) will take you to D drive.	
md	Make/Create a Directory / Folder. Another similar command is **mkdir**.	
set	To view / change value of **environment variables** (?)	
dir	Show list of files and folders	
javac	To compile a java program and create class file	
java	To run a java program (class file)	

Task 8

Complete the following program. You must use loop and **arrayName.length** for all current and future tasks in all labs. For example, following array name is "a", so you should write a.length instead of 3 to stop the loop.

Program	Expected Output

class Lab10Task02{
  public static void main(String[] args){
  int a[]={10, 20, 30};
  // write your code here
  }
}
	10
	20
	30

Task 9

Modify your solution of Task 2 and complete the following program.

Program	Expected Output

class Lab10Task03{
  public static void main(String[] args){
  String a[]={"40", "50", "60"};
  // write your code here
  }
}
	40
	50
	60