**Assignment**

* You must submit solutions for **both** the problems
* You can use **any** programming language of your choice
* Kindly note that we are **not** expecting a UI. Rather, we are expecting a simple, console based application and interested in your source code.
* Submission must include how to build/run the solution/tests
* Though a working solution is important, the main evaluation criterion is **how well the code is written**.
* You are encouraged to use external libraries or tools for building/testing purposes
* There is no hard time limit but it is preferable to receive solutions **within a day** from today
* **No cheating!** You must not copy solutions from somewhere else. You must not share your solutions with others
* **No distribution!** You must not publish the problem statements nor your solutions to the public forums/repositories
* Submit your solutions as a zip attachment in the reply

**SUPERHERO**

The time is set in a dystopian future when crime is a global issue. Crime Zero Inc. sets up a SMS service where you type in 0 <space> <code> to call for a super hero for rescue. You are assigned the job of developing a system that reads the SMS and translates the code into possible names of super heroes so that Crime Zero Inc. can send a distress signal to alarm your savior.

The program should map the standard telephone keypad numbers to corresponding letters with the given set of superhero names. See APPENDIX for the list of names.

For example,

4855 generates the following combination of words: [gvlj, htkl, itlj, hulk, gtjj, hvlk, …]

Out of the 81 combinations, only hulk is a valid name. This is arrived by mapping numbers to letters in the following manner:

4 – h

8 – u

5 – l

5 – k

Write a program that asks for a list of sms messages and decodes the name of the correct superhero based on the given list of names.

Program Input

0 228626

0 4855

0 78737626

0 8467

Program Output

BATMAN

HULK

SUPERMAN

THOR

APPENDIX

List of superhero names:

SUPERMAN THOR ROBIN IRONMAN GHOSTRIDER CAPTAINAMERICA FLASH WOLVERINE BATMAN HULK BLADE PHANTOM SPIDERMAN BLACKWIDOW HELLBOY PUNISHER

**HOTEL ROOM RESERVATION**

A hotel chain operating in Miami wishes to offer room reservation services over the internet. They have three hotels in Miami: Lakewood, Bridgewood and Ridgewood. Each hotel has separate weekday and weekend(Saturday and Sunday) rates. There are special rates for rewards customer as a part of loyalty program. Each hotel has a rating assigned to it.

**Lakewood** with a rating of 3 has weekday rates as 110$ for regular customer and 80$ for rewards customer. The weekend rates are 90 for regular customer and 80 for a rewards customer.

**Bridgewood** with a rating of 4 has weekday rates as 160$ for regular customer and 110$ for rewards customer. The weekend rates are 60 for regular customer and 50 for a rewards customer.

**Ridgewood** with a rating of 5 has weekday rates as 220$ for regular customer and 100$ for rewards customer. The weekend rates are 150 for regular customer and 40 for a rewards customer.

**Can you write a program to help an online customer find the cheapest hotel?**

The input to the program will be a range of dates for a regular or rewards customer. The output should be the cheapest available hotel. In case of a tie, the hotel with highest rating should be returned. The additional level of complexity can be introduced by adding blackout dates, may be in part 2 of the problem.

INPUT FORMAT: <customer\_type>: <date1>, <date2>, <date3>, ... OUTPUT FORMAT: <name\_of\_the\_cheapest\_hotel>

INPUT 1: Regular: 16Mar2009(mon), 17Mar2009(tues), 18Mar2009(wed) OUTPUT 1: Lakewood

INPUT 2: Regular: 20Mar2009(fri), 21Mar2009(sat), 22Mar2009(sun) OUTPUT 2: Bridgewood

INPUT 3: Rewards: 26Mar2009(thur), 27Mar2009(fri), 28Mar2009(sat) OUTPUT 3: Ridgewood