The first step in our interview process involves an at-home coding task.  We'd like to get a feel for the style of code you write, so we've developed this exercise to help out.  It is designed to take between 20 minutes and 4 hours but you can spend however much time you'd like.  Our goal is not to get a lot of code written, but get a good idea of your coding style.  With that in mind, please feel free to use whatever computer language you'd like, just let us know what it is so we can try to run your program and test it out.

We want to create the beginning of a little game we are calling Dice on a Yacht.  This game is played with 5 8-sided dice.  For this beginning, we need a function that, given an array of the 5 dice scores and a category indicator, will return the score that you would get for that category.  We also want a function that can iterate through all the categories and find the one with the highest potential score.

Here is some pseudo code that we might use to call your program:

enum Category {Ones, Twos, Threes, Fours, Fives, Sixes, Sevens, Eights, ThreeOfAKind, FourOfAKind, FullHouse, SmallStraight, LargeStraight, AllDifferent, Chance, AllSame};

getScore(Twos, [1,2,3,2,2]);  // should return 6

getSuggestion([1,1,1,1,1]);  // should return AllSame

For the purposes of this exercise, we ask that you do the following scoring categories at a minimum:

• Any two of the following: Ones, Twos, Threes, Fours, Fives, Sixes, Sevens, Eights

• SmallStraight

• AllDifferent

• AllSame

Here is how to score each of the categories:

Ones, Twos, Threes, Fours, Fives, Sixes, Sevens, Eights: Sum of all dice that match the title of the category.  For example {4,4,4,4,5} scores 16 for fours.

ThreeOfAKind: Sum of all dice as long as there are at least three dice that are the same, otherwise zero. For example {1,1,1,2,8} scores 13.

FourOfAKind: Sum of all dice as long as there are at least four dice that are the same, otherwise zero. For example {1,1,1,1,8} scores 12.

FullHouse: If there are three of one kind and two of another score 25, otherwise score zero. For example {1,1,1,8,8} scores 25.

SmallStraight: If there are four dice in sequence score 30, otherwise zero. For example {1,2,3,4,7} scores 30.

LargeStraight: If all five dice fall in sequence score 40, otherwise zero.  For example {3,4,5,6,7} scores 40.

AllDifferent: If all five dice have unique values score 40, otherwise zero.  For example {1,2,4,6,8} scores 40.

Chance: Sum of all dice. For example {1,2,1,8,8} scores 20.

AllSame: If all five dice have the same value score 50, otherwise zero.  For example {1,1,1,1,1} scores 50.