

**The first step in our interview process involves an at-home coding task. This exercise is designed to take between 20 minutes and 2 hours. Our goal is not to get a lot of code written, but to get a good idea of your coding style. C++ is the required language for this challenge. Please include the instructions of how to run your program and related tests.**

We would like you to create a little game (UI/Graphics are not required). We are calling it Dice on a Yacht. This game is played with five eight-sided dice. The implementation should include a function that, given an array of the five dice values and a category indicator, will return the score that you would get for that category. It should also include a function that could iterate through all the categories and find the one with the highest score.

For the purposes of this exercise, we ask you to cover the following scoring categories:

- At least 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 if 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 if 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.