



Program Design

- Up to now, we have given you the function prototypes to implement
- Your turn!!!!
- Time to break up a problem into well-defined functions

The Problem

- Write a program that deals 4 random bridge hands
- Sounds simple enough!!!
- Huh????
- Where to begin??
- Never played bridge!!!
- Have played poker and war 😊 😊
- Might as well create a design that can play all card games with a deck and hands

How to design

- Need to break up the problem into smaller problems
- Like what?
- What do we need to create to play cards in the abstract?
- How do these abstract concepts help us create an actual C++ program for card playing?

Break up into groups

1. Break up into groups of 2 or 3
2. On a single sheet of paper:
 - a. Discuss all of the abstract terms you will need for a game of cards (e.g. Card)
 - b. Figure out how you will represent all of your abstract terms in C++
 - c. Write ALL of the function prototypes that will be needed to create and print four bridge hands
 - d. Using your function prototypes, see if you can deal a hand of cards and print the hand

A Hint

- We have learned a great deal of C++ and know a fair amount of mathematics
- Ummmm????
- Consider the integers 1, 2, 3, ... 52
- card's suit $((\text{card} - 1) / 13)$
- card's denomination $(\text{card} \% 13)$
- ASCII Extended Control Characters
 - Heart is '\3' Diamond is '\4' Club is '\5' Spade is '\6'