In this assignment you will create a program that illustrates how hard it is to be dealt a 5-card poker hand that contains four cards with the same rank (a four of a kind). In your program I would like you to represent a card using a structure called Card that contains the rank and suit of the card. The rank should be represented as an integer from 1 to 13. The suit should be an enumeration called Suit that can have one of four values: (hearts, clubs, diamonds, spades).

To solve this problem you will need to be able to continually generate hands until you create one that has a four of a kind. Remember, a deck of cards has only one copy of each card. As a result, **it should not be possible to have the same card appear more than once in any given hand.** Once you generate a four of a kind you should print the hand, as well as the number of attempts it took to generate it. Your output should look similar to this:

Hand:

5 of hearts

5 of clubs

King of hearts

5 of diamonds

5 of spades

It took 2453 to get four of a kind!

In order to create a random hand of cards, you need to know how to create a random number in C++. The simple program below shows you how to create a random number from 0 to 3:

#include <ctime>

#include <cstdlib>

int main()

{

srand(time(NULL)); // just do this once at the top of your file

int num = rand()%4; // change 4 to change the range

}

This program will take a bit more code than some of the other assignments. As a result, I would recommend decomposing your code into functions. For example, you might find the following functions helpful:

// returns a random rank (1 to 13)

int randRank()

// returns a random suit

Suit randSuit()

// returns true if c is in hand

bool inHand(Card c, Card[] hand, int size) // return tru

// prints the cards in hand

void printHand(Card hand[]) // prints the cards in a hand

// returns true if the hand is a four of a kind

bool fourOfAKind(Card hand[]);

Please submit your file to the appropriate Canvas dropbox when you are done.