Poker Player

Due: May 13, 2024

Write a complete program to simulate a simple poker player. Your program must recieve five cards from standard input, determine how many to discard (from 0 to 3, inclusive) and which cards to discard, and then output to standard output, on a single line, the number of cards to be discarded and which cards will be discarded. You must make sure your output is on a single line and is terminated with '\n'. You also must ensure that you output your line within one second of receiving your hand or your program will time out!

As discussed in class, each card is encoded as an integer in the range [0, 51], and is 4 * VAL + SUIT, where VAL is an integer in the range [0,12] corresponding to {2, 3, …, J, Q, K, A}, and SUIT is an integer in the range [0,3], corresponding to {Clubs, DIamonds, Hearts, Spades}.

Your program may be in C++, Java, or Python. Here is an example in C++ of a (very bad) poker player:

```cpp
#include <random>
#include <iostream>
#include <vector>

using namespace std;

typedef vector<int> VI;
typedef vector<bool> VB;

std::random_device seed;
std::mt19937 gen(seed());

std::uniform_int_distribution<int> u(0, 3);
std::uniform_int_distribution<int> u1(0, 4);

int main() {
    VI hand(5);
    for (int i = 0; i < 5; ++i)
        cin >> hand[i];

    int nd = u(gen);
    VB chosen(5, false);
    for (int i = 0; i < nd;) {
        int j = u1(gen);
        if (!chosen[j]) {
            chosen[j] = true;
            ++i;
        }
    }
    cout << nd;
    for (int i = 0; i < 5; ++i)
        if (chosen[i])
            cout << ' ' << hand[i];
    cout << '\n';
    return 0;
}
```