## Q1

Playing cards are organized into 4 suits: clubs, diamonds, hearts and spades.
Define a function `print_suit` that, given an integer between 1 and 4, prints the name of the corresponding suit of cards, using the ordering listed. E.g., `print_suit(2)` prints `diamonds`.

## Q2

Define a structure type `FractionT` to represent fractions like 1/2 and 3/5.

## Q3

Write a program that inputs a series of integers and passes them one at a time to function isEven, which uses the modulus operator to determine whether an integer is even. The function should take an integer argument and return true if the integer is even and false otherwise.

# Duplicates and Stats

The purpose of this program is to create, read, sort, and fill a vector from a large file of integers, and count the total number of integers in the file. No duplicate values should be stored.

You will also

- Check for duplicates; keep count of each duplicated number and how many times it was repeated.
- Find highest and lowest numbers
- Write your results to an output file.

Obtain the data file called Integers.txt file from D2L. It contains a large number of integer values.

Write a program that opens the data file, reads the integers, sorts, find duplicates, and counts the values and returns that value. The program opens a data file that is named with .txt extension and writes the following information to the output file:

- total number of values,
- low value,
- high value and
- the values that are repeated and number they were repeated

- sorted non-duplicated values

After control returns to main, write a goodbye message to the screen.

**Here is a sample of what your screen output might look like:**

```
Duplicates and Stats Software

Name of the file to read: integers.txt

Now reading integers.txt

Finished analyzing the file, results are found in output.txt

Goodbye.
```

**The results in your Output.txt output file might look like this:**

```
Duplicates and Stats – File: Output.txt
Total values in data file:  14924
Low value: 13
High value:  39527
==============================
Duplicated values:
195     occurred    23 times
1025    occurred     2 times
5547    occurred    43 times
12589   occurred     3 times
15286   occurred     3 times
25630   occurred   134 times
==============================
Non-Repeated Values:
2625
4262
9760
10611
15326
15369
18619
22925
23075
25440
26442
29056
31888
32362
35421
36114
37383
41118
41284
50703
51203
52251
52391
53391
55428
55748
56566
62097
64324
66059
70429
71774
75828
```