Days between dates

a “fencepost” algorithm

From 19 December, 2011 to 15 March (2012)

Fenceposts

Fenceposts in three parts
Fencepost with loop

```c
if (first fencepost needed) {
    ...
}
while (full sections of fence) {
    ...
}
if (last fencepost needed) {
    ...
}
```

- Sometimes this part is a calculation, sometimes it is an "if", sometimes it is not needed. Always initializes.
- The loop part is often accumulating something that was initialized in the first part. "Zero times" should work as well as any other number.
- Typically a calculation with whatever is "left over" from the loop.

Algorithm design steps

Sketch approach for simple examples

Work out simple examples by hand

Consider potential special cases

Same day? Earlier in same month? Later in same month?

Some special cases “fall out”; some have to be handled specially

Duration as fenceposts

- From beginning date to end of first month
- From beginning of last month to end day

Handling a special case

Some will “fall out” nicely.

“End is earlier in the same month as start” should work this way.

Others need special handling

“End is later in same month” is simple, but makes the fencepost algorithm complex. Handle it separately.

```c
if (special case) {
    ...
    handle special case; return answer;
}
other cases
```