Claim Drafting

Overview

- Claim types in computing arts context
  - System/device claims
  - Method claims
  - Computer readable media claims
- Claiming to hit the target
  - Joint infringement issues
  - End-user claims and indirect infringement generally
- Subject matter issues:
  - We will mostly defer possible subject matter issues for the time being

Patent Claims: Example

1. A computer-implemented method, comprising:
   receiving an indication of an array of numbers;
   partitioning the array into a first and a second portion; and
   sorting the first and second portions.

2. The method of claim 1 wherein partitioning the array includes determining a pivot element of the array, wherein numbers in the first portion are less than or equal to the pivot element and numbers in the second portion are greater than the pivot element.

3. The method of claim 1, further comprising randomly selecting a pivot element.

Patent Claims

- The claims define the metes and bounds of your invention
- The claims place the public on notice of what constitutes an infringing act, product, etc.

- Drafting these is typically the domain of the patent attorney
  - BUT: That doesn't mean that you shouldn't have at least some involvement in drafting them
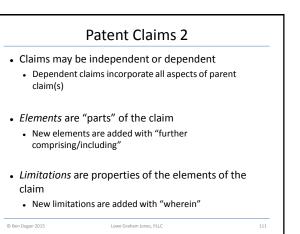
Patent Claims 1

- Each claim is one sentence, of the form:
  [Preamble], [transition]: [body].
- [Preamble] directs the claim to one of the statutory categories: a process (method), an apparatus (system, device), an article of manufacture (a computer-readable medium)
- [Transition] defines an "open" or "closed" claim
  - Open: "comprising/including"
  - Closed: "consisting"
- [Body] defines one or more elements of the claim

Patent Claims 2

- Claims may be independent or dependent
  - Dependent claims incorporate all aspects of parent claim(s)

- *Elements* are "parts" of the claim
  - New elements are added with "further comprising/including"

- *Limitations* are properties of the elements of the claim
  - New limitations are added with "wherein"

Examples

1. A computer comprising a memory and a processor.
2. The computer of claim 1, further comprising a display.
3. The computer of claim 1, wherein the memory is a RAM.

Which of the above claims "read on" the following?
 – An embedded system having a microcontroller and only a ROM
 – A typical desktop computer
 – A car including a navigation system

© Ben Dugan 2015   Lowe Graham Jones, PLLC   112
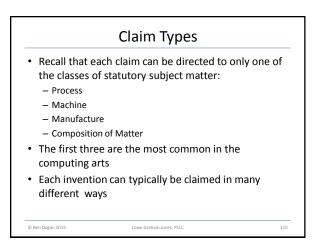
Patent Claims 3

- Claims must particularly point out and distinctly claim the subject matter of the invention (35 USC 112, second para.)
- Claims must be <u>definite</u>, because their purpose is to place the public on notice of the metes and bounds of the invention
- Common indefiniteness problems:
  – Antecedent basis issues
  – Weasel words: about, substantially, similar, essentially
  – Trademarks used in claims

© Ben Dugan 2015   Lowe Graham Jones, PLLC   113

Indefiniteness Examples

- Lack of antecedent basis – like an undefined variable in the programming context:
  1. An apparatus comprising a processor and a memory, wherein <u>the display</u> is blue.

- Approximations are not always indefinite, but typically will raise questions… e.g.,
  1. An apparatus comprising a processor and a memory that is <u>about 2GB in capacity</u>.

© Ben Dugan 2015   Lowe Graham Jones, PLLC   114

Claim Types

- Recall that each claim can be directed to only one of the classes of statutory subject matter:
  – Process
  – Machine
  – Manufacture
  – Composition of Matter
- The first three are the most common in the computing arts
- Each invention can typically be claimed in many different ways

© Ben Dugan 2015   Lowe Graham Jones, PLLC   115
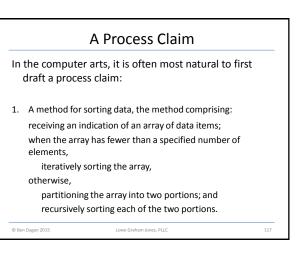
Example Technology

- Suppose you invent a new technique for sorting data: "swiftsort"
- In doing so, you implement the following:
  – A library/module that implements swiftsort
  – An executable that uses the library
  – A client/server system for performing sorting operations
  – A cool UI for animating swiftsort

© Ben Dugan 2015   Lowe Graham Jones, PLLC   116

A Process Claim

In the computer arts, it is often most natural to first draft a process claim:

1. A method for sorting data, the method comprising:
   receiving an indication of an array of data items;
   when the array has fewer than a specified number of elements,
      iteratively sorting the array,
   otherwise,
      partitioning the array into two portions; and
      recursively sorting each of the two portions.

© Ben Dugan 2015   Lowe Graham Jones, PLLC   117

Drafting Issues

- Point of novelty
  - What is the point of novelty in the above claim?
  - What is window dressing?
- Infringer
  - Who infringes the above claim?
  - Can it be reworded to read on a different party?
- Subject matter issues
  - We'll discuss these later, but computer-related inventions are prone to subject matter problems

A Machine Claim

1. A device for sorting data, comprising:

a data processor configured to:

    receive an indication of an array of data items;

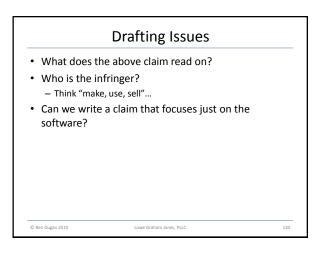   when the array has fewer than a specified number of elements,

        iteratively sort the array,

    otherwise,

        partition the array into two portions; and

        recursively sort each of the two portions.

Drafting Issues

- What does the above claim read on?
- Who is the infringer?
  - Think "make, use, sell"...
- Can we write a claim that focuses just on the software?

A "Machine" claim

1. A module configured to:

receive an indication of an array of data items;

when the array has fewer than a specified number of elements, iteratively sort the array,
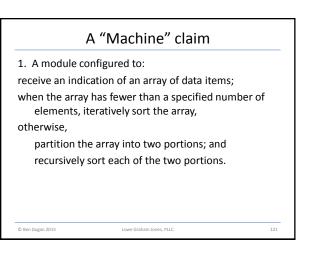
otherwise,

    partition the array into two portions; and

    recursively sort each of the two portions.

Software Per Se

- The patent office and courts (likely) won't allow the above claim, because it is too abstract.
- Software per se' is not patent-eligible subject matter
- Need to get more structure in there...

An Article of Manufacture

1. A computer-readable medium including contents that are configured to cause a computing system to sort data by performing a method comprising:

receiving an indication of an array of data items;

when the array has fewer than a specified number of elements, iteratively sorting the array,
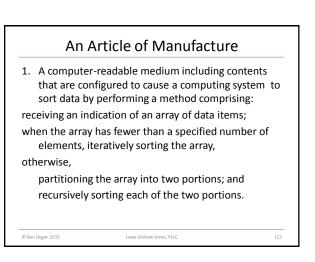
otherwise,

    partitioning the array into two portions; and
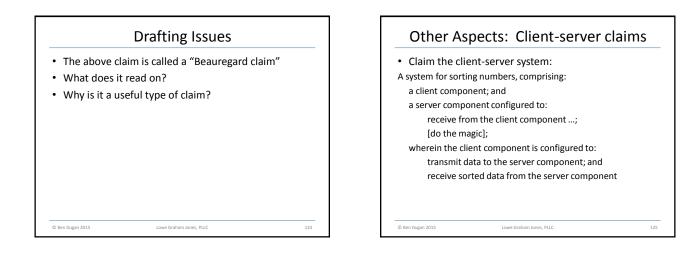
    recursively sorting each of the two portions.

Drafting Issues

- The above claim is called a "Beauregard claim"
- What does it read on?
- Why is it a useful type of claim?

Other Aspects: Client-server claims

- Claim the client-server system:

A system for sorting numbers, comprising:
   a client component; and
   a server component configured to:
      receive from the client component …;
      [do the magic];
   wherein the client component is configured to:
      transmit data to the server component; and
      receive sorted data from the server component

Drafting Issues

- How useful is the above claim?
- What does it read on?
  - Can we claim the client and server separately?
- Does it have an abstractness issue?
- If so, how do we fix it?

Better C/S claims

1. A system comprising:
   a memory; and
   a server module stored on the memory and configured to: …

2. A system comprising:
   a memory; and
   a client module stored on the memory and configured to: …

Other Aspects: UI Claims

- UI's can be protected in at least three ways:
  - Utility patent for the function
  - Design patent for the ornamental design
  - Copyright protection for the non-functional elements

UI Claim

A method for animating execution of a sorting process, the method comprising:
   for each of multiple times, presenting a bar graph that depicts the values of each of the data items in the array at the time.

- *This claim has some problems, what are they?*
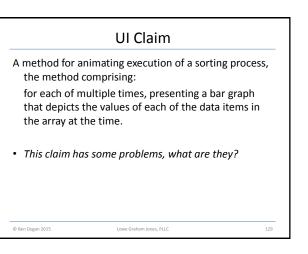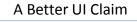
4

A Better UI Claim

A method for animating execution of a sorting process applied to an array of data items each having a corresponding value, the method comprising:

for each of multiple times, presenting a bar graph that depicts the values of each of the data items in the array at the time.

Q: Is this claim too broad?
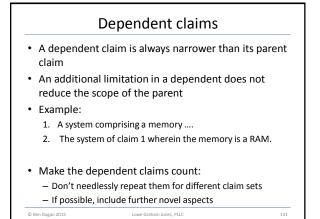
© Ben Dugan 2015   Lowe Graham Jones, PLLC   130

Dependent claims

- A dependent claim is always narrower than its parent claim
- An additional limitation in a dependent does not reduce the scope of the parent
- Example:
  1. A system comprising a memory ….
  2. The system of claim 1 wherein the memory is a RAM.

- Make the dependent claims count:
  - Don't needlessly repeat them for different claim sets
  - If possible, include further novel aspects

© Ben Dugan 2015   Lowe Graham Jones, PLLC   131

Claim Differentiation

- Because the dependent is always narrower than its parent, the scope of the parent must always be strictly greater than its child

- Thus, in:
  1. A system comprising a memory ….
  2. The system of claim 1 wherein the memory is a RAM.

- The term "memory" in claim 1 must include RAMs as well as other kinds of memory

© Ben Dugan 2015   Lowe Graham Jones, PLLC   132

Practice Pointers

- Start by drafting the method claim – what are the two or three steps/operations that are novel?
- Once you have your method claim, creating an apparatus/system and CRM claim is usually a mechanical transformation

- Use your dependent claims to do two things:
  - Claim differentiation
  - Additional points of novelty

© Ben Dugan 2015   Lowe Graham Jones, PLLC   133

Practice Pointers

- For the application fee, the office will examine up to 20 claims total with a maximum of 3 independent claims (the "3 and 20 rule")
- You can pay more to have more claims examined
- But, the claims must be drawn to a single invention, or else the office will "restrict" your claims
  - Often draft a single disclosure (a "shared spec") and file multiple times for different claim aspects:
    - Client
    - Server
    - UI, etc.

© Ben Dugan 2015   Lowe Graham Jones, PLLC   134