What is source code, what is object code, and why care?

What is horizontal software?
- Licensing issues
- Warranty issues

What is vertical software?

When should you purchase software and when should you have it custom developed?
What is source code, what is object code, and why care?

**Source Code:** the program in the language used by the programmer.

```
For I = 1 to 10
    Sum = Sum + Age(I)
Next I
```

**Object Code:** the program after it is converted to machine language.

```
0111001001010
1100100100111
1111000110111
```

Translation Process

![Diagram of translation process](image)

**Buyer/Seller Issues**

**Java and Java Virtual Machine (JVM)**
What is horizontal software?

**Licensing issues**

**Warranty issues**

General purpose (not industry or business function specific)

Types
- Spreadsheets
- DBMS
- WP

License - right to use (not ownership). Generally object code.

(see example license agreements)

Warranties
- Expressed - see license
- Implied (UCC)
  - Merchantability (does what one expects)
  - Fitness for a particular purpose (rely on vendor’s recommendation and expertise)
What is vertical software?

Single market or business function focus

Types
- Insurance sales system
- Dentist office patient records system
- Accounts payable system

Negotiations possible
- Both licensed and sold
- Sometimes object, sometimes source code

High variance in quality
- Good contract necessary
- References important
When should you purchase software and when should you have it custom developed?

Advantages of purchasing

- **Cost**
  
  PeachTree Complete ($229 or lower)

- **Reduces delays (off the shelf)**
  
  Still have training and conversion

- **Quality**
  
  May be high
  Can “test drive” it

- **Resource issues**
  
  Can free up technical staff to focus on nonstandard, strategic systems
Disadvantages of purchasing

- Feature do not match requirements

- With poor fit, options are
  - Modify package (source/object code issues)
  - Live with problems
  - Modify the way company operates

- Options relating to modifying package
  - contract with original vendor
  - contract with a 3rd party
  - modify in-house

- Dependence on vendor

- Empirical research results (Peter Keen)
  - total life cycle cost of purchasing is 7 times the original estimate
  - total life cycle cost of custom system development underestimated by a factor of 4.