The Software Crisis - My Part in it

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Software Engineering - "And what do you do then?"

- The reality of software engineering
    - My experience of the Software Crisis
- Practical examples of course subjects
    - Lifecycles, planning, quality etc..
- Questions

The Software Crisis -
"It's like this, Boss..."

The Hardware Engineer's Tools

   Catalogue of components

   CAD system for placement & routing

   Simulation for validation & testing

   Proven manufacturing method

The Software Engineer's Tools

   A stack of manuals

   A text editor

Lifecycle Models - "What are you going to do?"

The Waterfall Model
- Relatively easy to plan & track
- Test, test & test again

Rapid Application Development
- Application or interface?
- Don't oversell RAD

Boehm's Spiral
- Most realistic, most difficult to operate!

Specification Documents - "No, no I meant..."

Bridging the gaps

- Between customers, end users and developers

Range of methods

- Formal - e.g. Z
- Informal - "Like this, only better."

Don't jump into solutions

- The best specification writers have no imagination!

Scheduling & Estimating - "You want it when?"

Realistic *planning is difficult*

Plan to an appropriate level of detail

Use the best tools you can

Don't let it take over your life!

Quality –
"Ahhh, that'll do."

Lots of definitions...
- "What the customer says it is"
- "Conformance to requirements"

ISO 9000
- Certifies process **NOT** product
- Not always appropriate

Defects -
"It's a known bug I'm afraid."

Walkthroughs & Reviews
Mind that ego!

Testing
Tedious but necessary

Fault tolerance

Teamworking - "Oh, sorry, didn't I tell you?"

A little Visual Basic is a dangerous thing

SW Engineering Disciplines
- Vital for effective teamwork
- You'll never work alone

Summary - The Software Engineer's Lot...

The Bad News:

- The Software Crisis is real
- Marginal improvements all the time
- But - there is no magic bullet

The Good News:

- It's a great industry to work in & there's work to keep us all employed for years