SW Implementation Steps

• All projects cross the following milestones.
• If a project doesn’t explicitly deal with any of the following steps, it does so implicitly with less efficiency and effect. (i.e. ignoring these steps doesn’t make them go away).
• Different methodologies emphasize different steps, but all are addressed.

Pre-Project Planning

1. A problem or business opportunity presents itself
2. Technical feasibility
3. Business Justification/ Business Plan

Failures, why?

• Internet pizza delivery
• Coil shavers
• Flowbee

...more? something in the news?
Customer Involvement


What does “Problem Space” refer to?

What does “Solution Space” refer to?

“Systems” Engineering

5. Solicitation of Solutions
6. Analysis
7. Hardware/Software Allocation
8. Software-to-Environment Interface Specification

$85/hr

Information Engineering

9. Information Flow/ Data Flow Diagram- computers merely put the correct information in the right form at the right place at the right time

“all systems should be describable purely in terms of the information that it passes around”

$75/hr
SW Planning

10. Software Requirement Specification - solution - space description
11. Acceptance Test Plan - when to celebrate
12. Requirements Review
13. Budget - why is this always done first?

$65/hr.

Structured Solution - Architecture

14. Design of Main Control Structures
15. Architectural Design (Topology) - Structure Chart and Supervision

$125/hr

Structured Planning

16. Top Level Data Structure Design / Data Dictionary I
17. Preliminary Design Review
18. Schedule

$85/hr.
Structured Design
19. Main Module (or Application Class) Partitioning
20. Main Module Interface Specification
21. Sub Module (or Classes & Objects) Partitioning (first guess at modules)
22. Sub Module Detailed Design
23. Data Dictionary II

$65/hr

Object Oriented - Design
14. Identify Objects
15. Detail the Objects: Inputs, Outputs, Services required, Services Rendered, States, Persistence
16. Identify protected Data
17. Identify Global/Semi-Global Data
18. Identify Public, Private Functions

$85/hr.

Object Oriented - Architecture
19. Identify Performance/Concurrency Concerns
20. Classify Objects: differences, similarities, similar to standard (prototype)
21. Abstract the classes

$125/hr.
Object Oriented Design

22. Derive the objects
23. Specification of Contracts

$75/hr.

Permission to Code

24. Detailed Design Review
25. Acceptance Test Procedure
26. Configuration Management begun

$65/hr.

Programming

27. Code
28. Coding Walkthroughs
29. Logical Test

$50/hr.
Return of Systems Engineering

30. SW Integration
31. System Integration (HW/SW)
32. Acceptance Test
33. Test Review

$85/hr.

Interface to the User

34. User Documentation
35. Delivery/Installation
36. Training

$100/hr.

Post-Project

37. Maintenance
38. Enhancement
39. Archiving
40. Post Project Review