Challenges in Implementing XP

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Challenges

1. Adopting XP
2. Iterative development
3. Estimation
4. Pair programming
5. Acceptance tests
6. Test-driven development
7. Incremental design

Challenge #1. How to start adopting XP?

- Select a few practices at a time.
- Look at the key problems being faced by your team, and identify which XP practices address them well.
- In general, small releases and small iterations, test-driven development, incremental design, and pair programming provide significant pay-offs.
- May need to coach the team about some of the XP practices.
- May need to secure buy-in from various other stakeholders for some of the practices.

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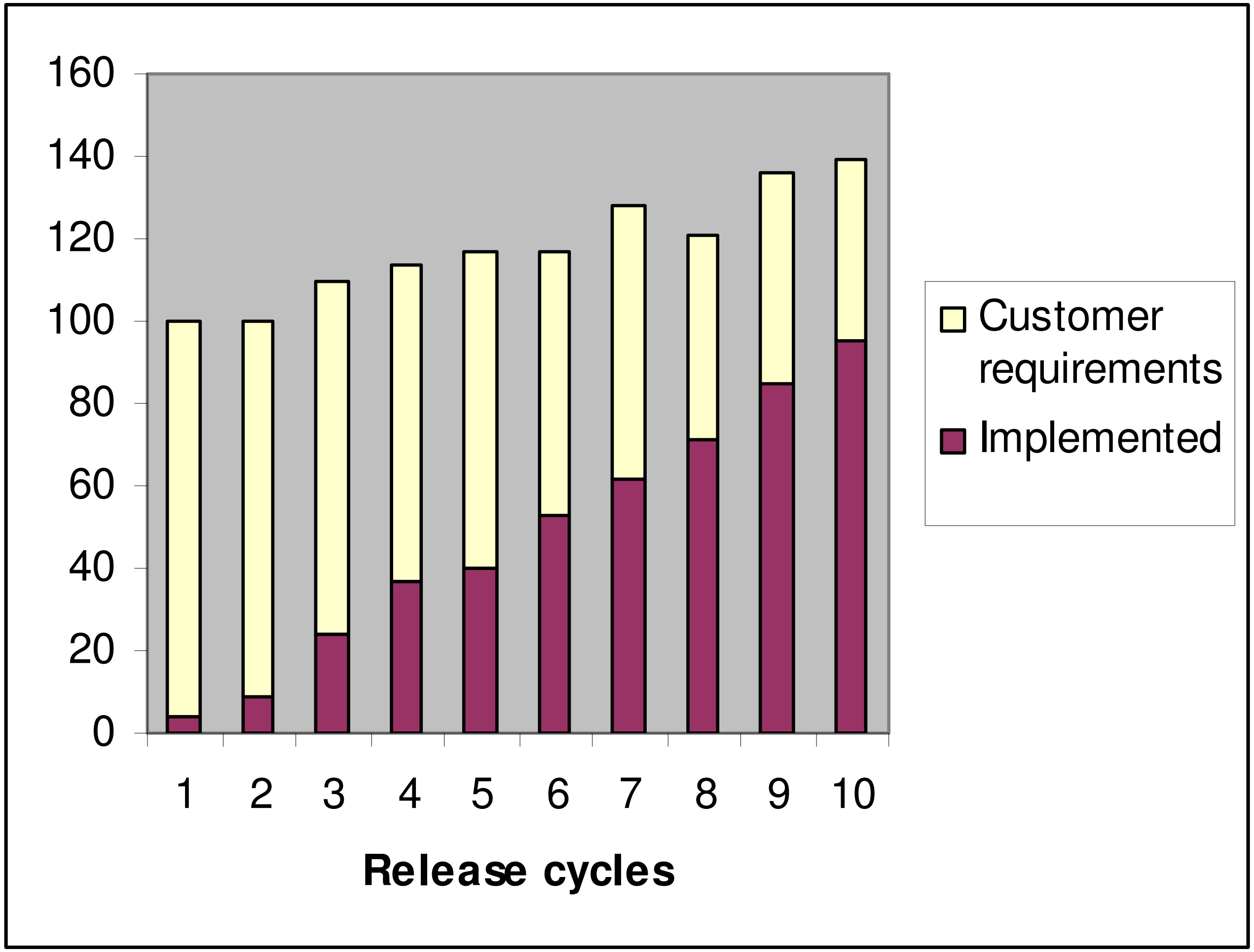
Challenge #2. Iterative Development

Evolve a system through a series of small release cycles.



Iterative development

- Do companies really do iterative development?
- How small a release cycle should be?
- Can all the development models use iterative development? What about fixed price contracts?
- Are all customers willing to accept small release cycles?
- What about too much scope change?
- What about the impact on estimation / contract negotiation with customers? Coming up soon.
- Too much time spent in integration testing for each release cycle?
- Mindset change for project managers and developers.
- How to decide the scope for a release cycle / iteration?

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Challenge #3. Estimation

- Do we estimate all stories at the beginning?
- How do we quote for a project to a customer?
- How accurate are the estimates?
- Are all developers equally good at estimation?
- Does the person estimating a story necessarily implement it?
- Are these estimates better than any gut-feel guesswork?
- What if the plans slip?
- Expose estimation process to the client? And let them know how messy it is?

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Challenge #4. Pair Programming

- Top management buy-in is difficult. Will it not double the effort and cost?
- Resistance from developers. How can I code with another person?
- Can’t I think alone?
- What if two developers cannot get along well with each other?
- Should all pairs break-up and re-align at the same time?
- Who decides the pairing?
- How much time to spend in pair programming?

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Pair Programming

- *When people say that Pair Programming reduces productivity, I answer "that would be true if the most time consuming part of programming was typing".*
  - Martin Fowler

Challenge #5. Acceptance Tests

- Why not write specifications documents?
- Will the customers agree to write the acceptance tests?
- Will they really run the acceptance tests?
- What format? What contents?

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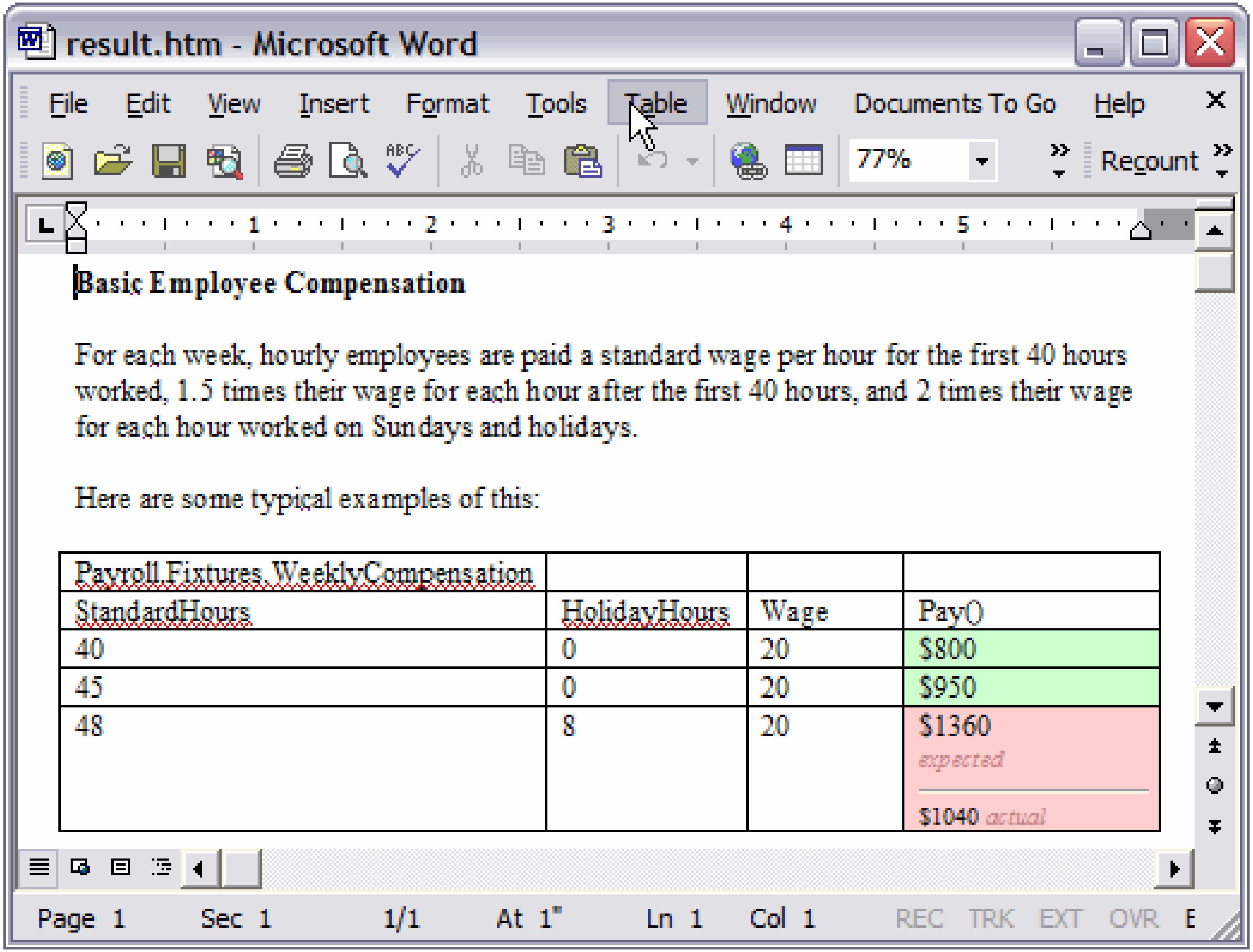
Example: Interest Calculation

System date: September 30, 2005
Interest rate: 4% p.a.

Sr.no.	Customer details	Transactions list (between 01-APR-2005 and 30-SEP-2005)	Interest amount
1	Code: 001 Name: Amar	Opening balance: 1000 Closing balance: 1000	20
2	Code: 002 Name: Binod	Opening balance: 1000 Deposit on 01-APR-2005: 2000 Withdrawal on 04-APR-2005: 500 Withdrawal on 12-APR-2005: 500 … … Closing balance: 500	45.29
3	Code: 003 Name: Chandra	Opening balance: 1000 Deposit on 01-APR-2005: 1000 Deposit on 01-MAY-2005: 1000 Deposit on 01-JUN-2005: 1000 … … Closing balance: 9000	52.25
etc.	etc.	etc.	etc.

Framework for Integrated Testing



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Basic Employee Compensation

For each week, hourly employees are paid a standard wage per hour for the first 40 hours worked, 1.5 times their wage for each hour after the first 40 hours, and 2 times their wage for each hour worked on Sundays and holidays.

Here are some typical examples of this:

Payroll.Fixtures.WeeklyCompensation			
StandardHours	HolidayHours	Wage	Pay()
40	0	20	$800
45	0	20	$950
48	8	20	$1360 *expected* $1040 *actual*

Source: http://fit.c2.com

Challenge #6. Test-Driven Development

- Programmers don’t like testing, or writing test code.
- How much test code to write?
- Will the development effort double because of these?
- Under time pressure, teams start cutting corners, and stop writing tests.
- Should the tests be maintained?

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Challenge #7. Incremental Design

- Big mindset change. Resistance from project managers and developers.
- Wouldn’t incomplete design result in lot of rework, poor quality of work?
- What if I know all the requirements? Should I still do minimal design?
- When is the design complete?
- Can we design a boat and refactor it to make a ship?
- What’s wrong in anticipating what will be needed tomorrow and implement it today?

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Incremental Design

According to Standish Group report:

7% of features and functions are always used, 12% are often used, 16% are sometimes used, 19% are rarely used, 45% are never used.

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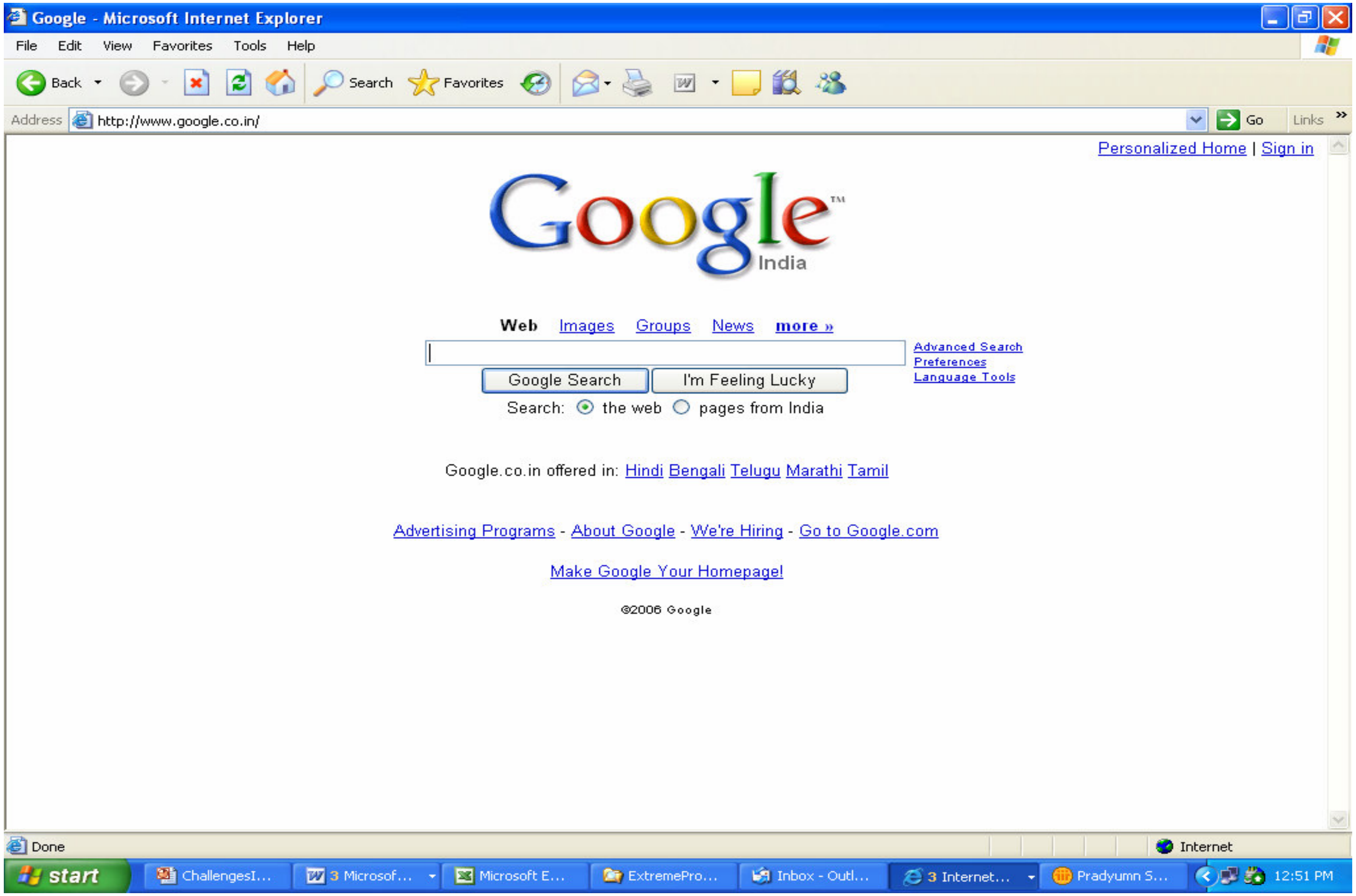

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Thank You!

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