

# Examples how to move towards Zero Defects

Niels Malotaux:

"In my experience the 'zero defects' attitude results in 50% less defects almost overnight."

**Niels Malotaux** 

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www.malotaux.nl/conferences (look for video with the title)

# Do we deliver Zero Defect software?

- Software development process PRS 1st phase The software The development of software code is code is complete mature for the market started up Ist phase is developing phase · 2nd phase is de-bugging phase
- How many defects are acceptable?
- Do the requirements specify a certain number of defects?
- Do you check that the required number has been produced?

#### In your projects

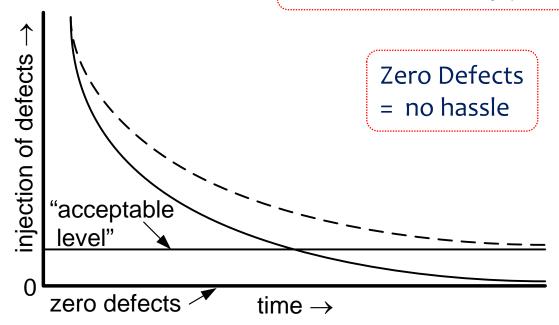
- How much time is spent putting defects in?
- How much time is spent trying to find and fix them?
- How much time is spent on defect prevention?

#### What is a defect?

A defect is the cause of a problem experienced by any of the stakeholders while relying on our results

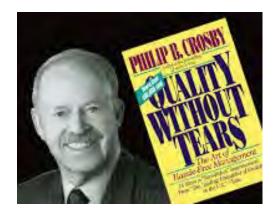
#### What is Zero Defects

- Zero Defects is an asymptote
- We aren't perfect,
   but the customer shouldn't find out
- What we deliver simply works
- Know what simply works means!



- When Philip Crosby started with Zero Defects in 1961, errors dropped by 40% almost immediately
- AQL > Zero means that the organization has settled on a level of incompetence
- Causing a hassle other people have to live with

# Crosby (1926-2001) - Absolutes of Quality



- Conformance to requirements
- Obtained through prevention
- Performance standard is zero defects
- Measured by the price of non-conformance (PONC)

Philip Crosby, 1970

#### Ultimate Goal of a What We Do



Delivering the Right Result at the Right Time, wasting as little time as possible (= efficiently)

#### Providing the customer with

- what he needs
- at the time he needs it
- to be satisfied
- to be more successful than he was without it

#### Constrained by (win - win)

- what the customer can afford
- what we mutually beneficially and satisfactorily can deliver
- in a reasonable period of time

## Prevention: Root Cause Analysis

- Is Root Cause Analysis routinely performed every time?
- What is the Root Cause of a defect ?
- Cause:
  - The error that caused the defect
- Root Cause:
  - What caused us to make the error that caused the defect

 Without proper Root Cause Analysis, we're doomed to repeat the same errors

## We're QA: What has this to do with us?

• What is the goal of QA in a software development project?

Who is our customer?

# Who is the (main) customer of Testing and QA?

#### Deming:

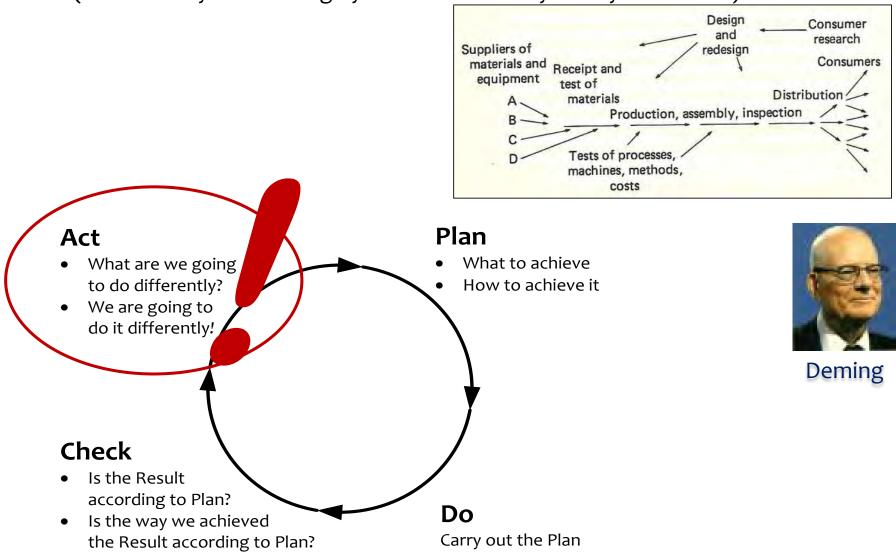
- Quality comes not from testing, but from improvement of the development process
- Testing does not improve quality, nor guarantee quality
- It's too late
- The quality, good or bad, is already in the product
- You cannot test quality into a product
- Who is the main customer of Testing and QA?
- What do we have to deliver to these customers?
   What are they waiting for?
- Testers and QA are consultants to development



Deming (1900-1993)

# The essential ingredient: the PDCA Cycle

(Shewhart Cycle - Deming Cycle - Plan-Do-Study-Act Cycle - Kaizen)



# Some Examples

We're not perfect, but the customer shouldn't find out

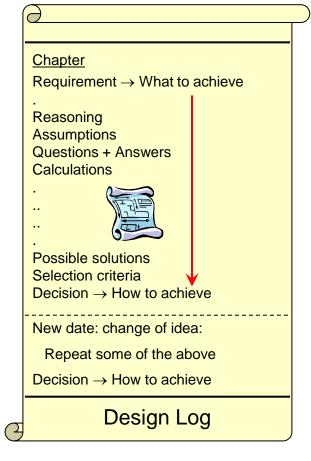
# Design techniques

# Cleanroom

- Design
- Review
- Code
- Review

Iterate as needed

- **Test** (no questions, no issues)
- If issue in test: no Band-Aid: start all over again: Review: What's wrong with the design?
- Reconstruct the design (if the design description is lacking)
- What happens if you ask "Can I see the DesignLog?"



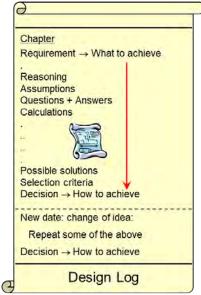
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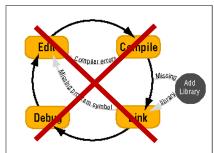
#### James:

Niels, this is Louise Louise, this is Niels, who taught me about DesignLogging Tell what happened

#### Louise:

- We had only 7 days to finish some software
- We were working hard, coding, testing, coding, testing
- James said we should stop coding and go back to the design
- "We don't have time!" "We've only 7 days!"
- James insisted
- We designed, found the problem, corrected it, cleaned up the mess
- Done in less than 7 days
- Thank you!



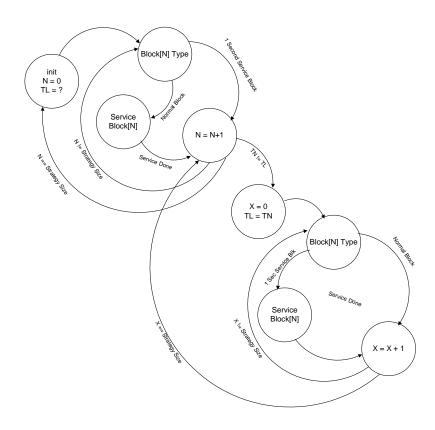


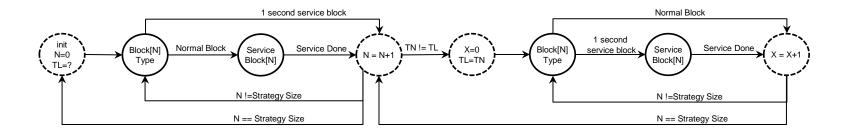
#### What James told me afterwards

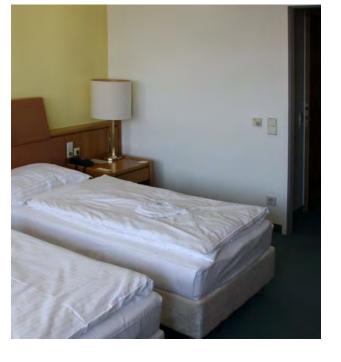
- I gave the design to two colleagues for review
- Louise corrected some minor issues
- It went into a 'final' review, with another colleague
- Based in his expertise, the solution was completely reworked
- Actually, two features were delivered and deployed
  - One that was design and code reviewed had no issues after deployment
  - Other one, was the source of quite some defects
- In summary, this success has proved instrumental in buy-in for DesignLogs which are now embedded in the development process

# There are many ways to represent a design

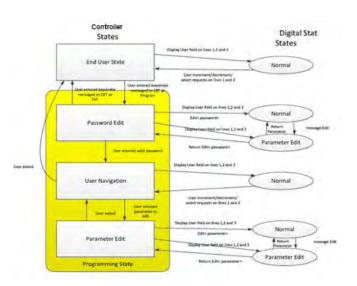
- Only few are useful
- Don't waste reviewer's time

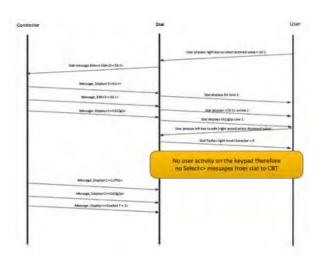




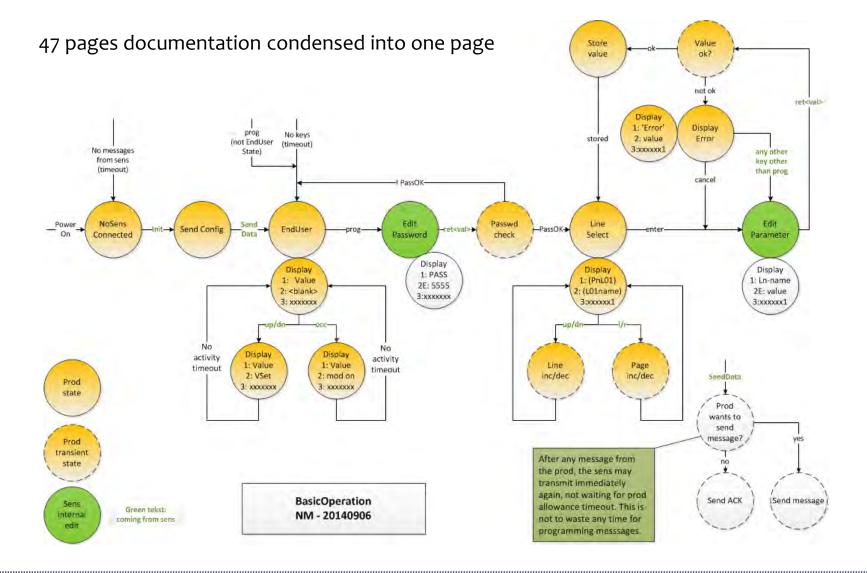


# Useful design?

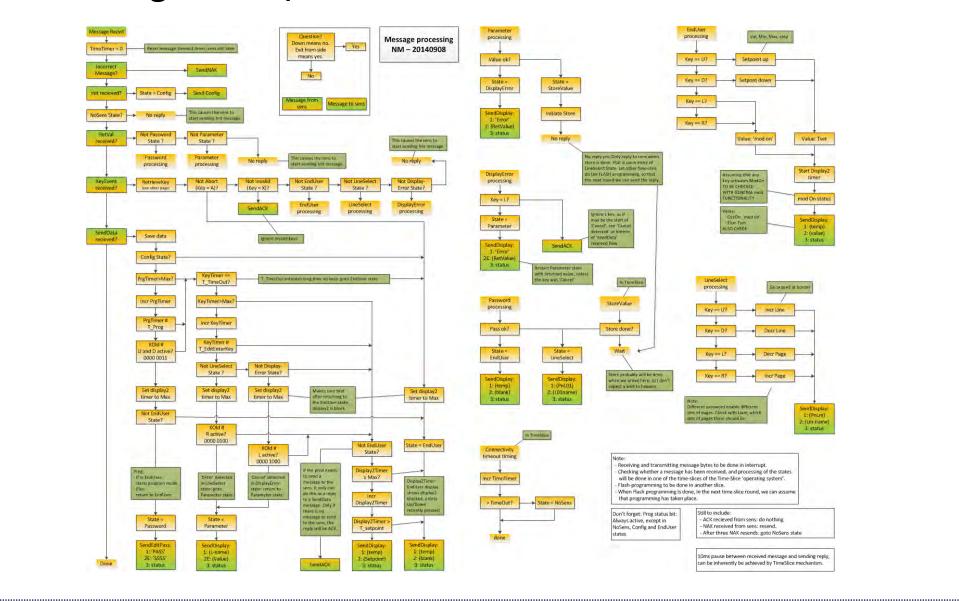




# Choose the appropriate design

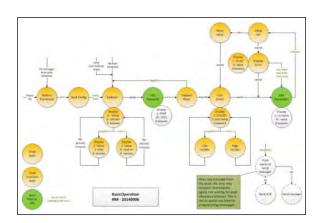


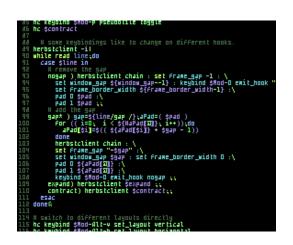
# Design example

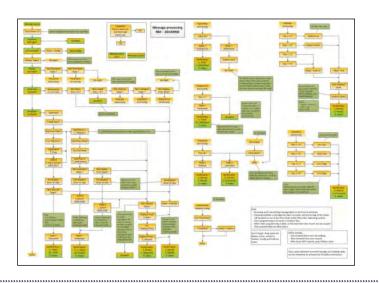


# What is better than reviewing code?

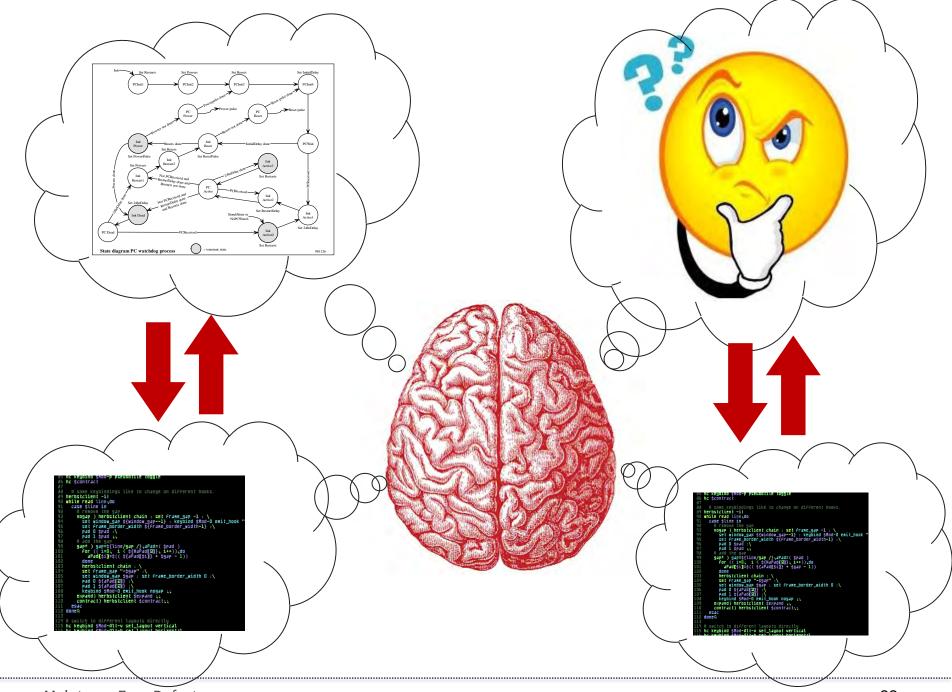
- Do you ever review software?
- What do you review?
- What is better than reviewing code?
  - May I review the design first?

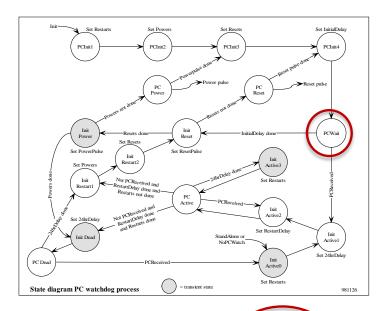


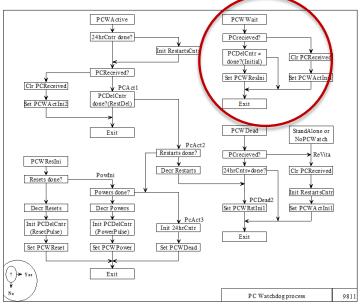




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| SPILE_Paton="0.bbb" Slack_layout="vertical" Slack_frame=1 Here ends the section for users H Here ends the section for users H  | bd done<br>69 Ahc keybind \$Mod-w chain : add web : use web : spawn firefox : \<br>70 H keybind \$Mod-w use web : keybind \$Mod-Shift-w move web   | 55 allas duerou -nº<br>56 allas grepeigrep -color=auto<br>56 allas Erfind L -namer<br>56 allas whe'white'   | 2 envaronment 3 set nocampatible backspace=indent_eol_start history=50 nowrap mou 4 set ruler showed incsearch lor expandab tabstop=2 shiftwidth=2 5 set nu cursortine widenou wildmode=list-longeet_full 6 let g-SuperTabDeFaultCompletionType = "context" 2 public processing the processing transfer of the processing tran | 30   | include "us (<br>name[Group<br>key.type[gro   |
|  | 71   | 58 alias wh="while"<br>59 alias ast="autosus toggle"<br>60 alias mt="s mount"   | d iletype plugin indent on   | 1 42 M use 'Find' to get the entire contense of \$HOME recursi   |   |
| he() { herbstelient \$0,}; hec() { he chain \$0,}; chn() { cwds="\$cwds , \$ <br>set_wars() { MMH some wars need to be set more than once.   | 72 h clygoling Smod-r remove , keybind \$Mod-space cycle_layout 1<br>74 h keybind \$Mod-u split vertical 0.5<br>75 hc keybind \$Mod-o split horisontal 0.5   | 60 alias mnt='s mount'<br>62 alias tma='tmux attach -d' Hopens a window with the last tmux ses  | 9 tet gFn=Ubuntu\ Mono\ 10 go=<br>  10<br>  11 if has("gui cupnigo")   colorscheme molokai   | 43 search() {<br>  44<br>  45   B really long subshell supplies the Gile list and bids   | key (TLDE) (<br>key (AEO1) (<br>key (AEO2) (  |
| dumps( *(hc dump) )     out the content of hc dump into an array   |  | 63 alias M3g="M3A -cookie google.com"<br>64 alias png="ping google.com"   | ii (F has("gui_running")   colorscheme molokai<br>  le   lise   colorscheme cterm<br>  la   noif   | 195 H really long subshell supplies the File list and hide<br>196 H Files. In SHIME, hide hidden Files by deFautl unles:<br>197 H selects 'unhide.'  | key (AEOS) C<br>key (AEOS) C  |
| H values based directly on the dump<br>Rico={dump[1]HA.} I hake the division of primary frame an int<br>Orientation={dump[1]KX:4} H Frames split horizontal or vertical  | 10 po spil nur processty<br>7 nh k kyylind \$400-911-\$i split horizontal 0.\$i<br>70 hk kyylind \$400-\$int-\$i split vertical 0.\$i  | the state of the s  | 14  autocad stuff<br>  15  tugroup viarcEx   | 48   Menu=\$(IFS="   | keg (AEO7) C<br>keg (AEO8) C<br>keg (AEO9) C  |
| Frame=5(oump[1]HH*:) H Frame with active client  EmptyO=5(dump[3]=1) H empty frames =')'; same for following 2 vars  Frotul=5(dump[4]Hdumo[3]11-1]HH\$:)-Frotul=5(Frotul-1-1)  | au cone dl he keybind \$Mod-space cycle_layout 1 dP he keybind \$Mod-space cycle_layout -1   | br allas ta" ransmission-remote -3"<br>60 alias tl="transmission-remote -1"<br>50 alias ho"beekstalian)"  | 16 autocad Buffead /tap/pentadacty*.txt  | 50   | kog (AE10) t<br>kog (AE11) t<br>kog (AE12) t  |
| EmptyAll=5(dump[]]H*:);EmptyAll:5(EmptyAll:1:1)<br>H use absolute values from dump to determine values relative to stack/  | de hc keybind åRod-space cycle lagout -1<br>43 hc keybind åRod-s Floating toggle<br>44 hc keybind åRod-F fullscreen toggle   |   | autocmd buffead /tmp/uzbl_edit* source /home/ninjaaron/.vim/pen<br>autocmd buffeadPost *   | 53   | key (ADD1) t<br>key (ADD2) t  |
| Heydres based directly on the dose  Relians(quarplies), B may the division of primary frame an int  Drienteldones(dose()) 200, B may the division of primary frame an int  Drienteldones(dose()) 200, B may the division of primary frame and the di | d5 hc keybind \$Mod-p pseudotile toggle  | 71 alias ok="diatheke -b 05MHB -k"  | to the control of the | 1 55 echo "hide"<br>1 56 else  | key (ADO3) t<br>key (ADO4) t<br>key (ADO5) t  |
| Else Stack="\$15tack_Frame:=1}" Fi Fi FSFrame = "O" ] SS emptyInact=SEmpty1  | 87<br>88 H some keybindings like to change on different hooks.<br>89 herbskclient -11  | 74 alias nh="sudo nethogs ethl"<br>75 gap() { herbstclient emit_hook "gap \$\$7';}  | 1 25   | 155  | key (ADOE) t<br>key (ADO7) t<br>key (ADO8) t  |
| if [[ \$drientation = "horizontal" && \$stack = "1" ]]; then stackD=r; masterD=l; emptyStack="\$Emptyl"; emptyMaster="\$EmptyO"  | 89 herbstolient -il<br>90 while read line;do<br>91 case stine in   | 77<br>78 M Find processes that watch a regex  | 26 maps and commands and so Forth<br>  27 mapslear   mapslear!   | 1 61   |   |
| figure = "U" } 60 merujnatisten hat 11 merujnatisten to 1 ff desiratisten = "Universität to "U" ]]. The state of "U" ]]. The state of "U" ]] the state of "U" ]] the state of "U" ]]. The state of "U" ]], the state of "U" ]]  |  | 79 psg() { ps auxigrep "\$2"igrep -v grep; }<br>80<br>81 = 40 4   | 2d   IMMPAND PA POONTOGGLE ASCIIDOC<br>  29 toremap <c-w: merdtreatoggle<cr=""><br/>  30 TOMMAND DiffOrig wert new   Set bt=nofile   r ++edit H   Od_   di<br/>  31</c-w:>   | 62   else<br>  63   Find . sed '/-\$/d'  | key (AD11) t<br>key (AD12) t<br>key (BKSL) t  |
| stackD=1; masterD=r; emptyStack="SEmptyO"; emptyMasterD=r*SEmpty1"   stackD=1; masterD=r; emptyStack="SEmptyO"; emptyMaster="\$Empty1"   elif [[ SUrientation = "vertical" && Stack = "O" ]]; then   | n medove herosicilent chain : set frame_app -1 : \ 30  | 61 e() { 62     [[ -n \$0 ]]  |  | . 65   FE)<br>  66   sel=\$(echo "\$meno" \$DMENU -p "search tPND:")   |   |
| stackD=u; masterD=d; emptyStack="\$EmptyD"; emptyMaster="\$Emptyl"   Fi  | 96 Pad 0 SPAG :\<br>97 Pad 1 SPAG :\<br>98 H and the Sap   | 84   Recho -n "sudo [Y/n]?" % read sudo % [[ \${sudo:-y} = y ]] % sudo \$EDITOR -c "syntax off" \$0    \$EDITOR \$0   | 1 32 "syntax toggting<br>134 Function! Toggting<br>135 if exists("9:syntax.on")   syntax off<br>136 else   syntax enable   endif   | 66 sel=\$(echo "\$menu" \$DMEMU -p "search \$PWO:")<br>  67 case \$sel in<br>  68 "" )   | kpy (ACO1) t<br>kpy (ACO2) t<br>kpy (ACO3) t<br>kpy (ACO3) t<br>kpy (ACO5) t<br>kpy (ACO5) t  |
| [ \$Frame = \$stack ]600<br>act=\$stack 000 inact=\$master0    { act=\$master0; inact=\$stack0; }  <br>}; set_wars N do all that stupP I just said   | 99   | db }<br>d7  | 35   | 69   | key (ACOA) t  |
| HHH Functions called by the luser   11   | 01   | åå H `cd' gets you where you're going!<br>å9 cd() {<br>90   |  | 71   | key (ACOT) t<br>key (ACOT) t<br>key (ACOT) t  |
| auto() { HAH swap out of the current frame into the other. II  if [ -n "\$Emptyd]l" ], then H Emptydll is null if 1 frame with clie tsll   | 04 set Frame_gap "-\$gap" :\<br>05 set window_gap \$gap : set Frame_border_width 0 :\  | 91 builtin cd -/"\$1" 2> /dev/null    {<br>92    [[ \$PWO != '/' ]]   | 40   | I rs Search ss   | key (8601) (<br>key (8602) (<br>key (8603) (  |
| cnn smlft -e \$inact H move client to inact frame.      <br>  [ "\$emptyInact" != ')'  | done herbstelient chain: herbstelient chain: herbstelient chain: triangle godger striangle  | of Secs you where you're going of the secs of the sec   | 240 hebres mode tegete  320 unction; regeteinbres et rightieft keymapthebres  321 unction; regeteinbres et cet rightieft keymapthebres  322 unction; regeteinbres et cetteinbres  323 create bindings for insert and normal mode tegether.  324 unction; bushing(key_comean) command  325 normapthebres  326 unction; also uncommand  327 unction; also uncommand  328 unction; also uncommand  328 unction; also uncommand  329 unction; also uncommand  330 unction; also uncommand  340 unction; also uncommand  350 u | 76   | key (ABO3) C<br>key (ABO4) C<br>key (ABO5) C  |
| else H one Frame? split it. move client to new Frame, set stack lay util hc split \$split direction \$split_ratio; set_vars  | 09 expand) herbstclient \$expand;<br>10 contract) herbstclient \$contract;   | 96 clist  | 1 45 exe "noremap (Leader>".a:key a:command<br>1 46 exe "inoremap (Leader>".a:key "no".a:command   | 1 79 }   | keg (ABO7) C<br>keg (ABO4) C<br>keg (ABO7) C  |
| HAM Functions catted by the largest frame into the other.  [1] I me "Startight" 1, then if are just is null if I frame with cite to the many of the control  | ll esac<br>l2 done&  | 98 Found=( \$(Find -L < -type d -name "\$1") )<br>99 cdlist   | 1 44 Promans   | 41 H browse files one directory at a time, the only way ou!<br>  42 H into browse(). However, when \$sel is a file, browse()<br>  43 H off to open(). This is a result of how the program or!  | h key (SPCE) t  |
| i salate = u 1 000 cmm Focus =e \$Auster0   11<br>Fi, hoc "\$cads"   11  | 13<br>14 H switch to different layouts directly  | 01 }  | 49   let mapleader=";"<br>  50   | i ga a tine tuondut moont cumudind to do oriectia to obsult i  | include "lev  |
| <pre>stack_spawn() { MMH spawn applications in the stack. [ "\$EmptyAll" = ")" ] &amp;&amp; \$D    H just spawn if no other clients exist.  </pre>   | 16 nc keyoino smoo-wit-n set_layout norizontal (1<br>17 hc keybind \$Mod-Alt-m set_layout max (1   | 1 EU  | Set retings size by (Lesderby coll Tagalesphaw()CED<br>= Call bullshing 'i, 'call Eaglelebrew()Cer' )  32 call bullshing 'r, 'awag' y  33 call bullshing 'r, 'awag' y  34 let settings = [[r^2, 'r, 'awag' y  55 For [ kg, setting ] in settings   | 0  |   |
| if [ -z "\$EmptyAll" ]; then \$D, auto, else ho focus -e \$stackD, \$D,   <br>   | ld hc keybind \$Mod-Alt-g set_layout grid   <br>19 H "Master Window" type stuff  | OS cdlist() { Ob if [ \${Hfound} -gt 1 ]; then  | 54 let settings = [['fi', 'foldmethod=indent'], ['tw', 'tw=72'], ['W<br>  55 for [ key, setting ] in settings  | 86   | 1 [!!!!   |
| master_spain() { MAR Spain applications in the master.   | an ne keguino \$800-semicoton spawn \$conf/swap auto     1<br>  al he kegbino \$800-slash spawn \$conf/swap close  | 05  | i se — exe "call vualbino("".key."", ":set" setting."(cr>*)"   endfor  <br>  57 " saving and quitting<br>  58 for key in ["W", "g", "x"]   | 90   | 3 [1]<br>4 [1]<br>Bea[1]  |
| if [-2 "(Expigit"], then Sh, auto, else he Facus -e stack), Sh, il<br>saler span() (   | 24 RESIZESTEP=0.01   | 09 done<br>10 echo -n "which? "<br>11 read sel  | 56 for key in ['W', 'q', 'x']<br>  56 for key in ['W', 'q', 'x']<br>  56 exe "call bualbind("".key."', ':".key." <cr>')"   endfor<br/>  50 " faletypes</cr>  | 93   | Mem[       <br>Swp[   |
| while [ "\$emptyMaster" != ")" ]; do hoc , Focus -e \$masterD , shift -e \$stackD , Focus -e \$masterD; etil   | 25 hc keybind \$Mod-Control-h resize left +\$RESIZESTEP<br>26 hc keybind \$Mod-Control-j resize down +\$RESIZESTEP   | 12 builtin cd "\${Found[\$sel]}"<br>13 else   | Bi for [ key, 6t ] in [[far, fasciidocr], [fer, feythonr], [fsr, fsh<br>  BB   |  | Playlist (8 it  |
| 12   | 27 hc keybind \$Mod-Control-k resize up +\$RESIZESTEP<br>24 hc keybind \$Mod-Control-l resize right +\$RESIZESTEP  | 14 builtin cd "\$Found"<br>15 Fi  | 63 "Window management   164 for key in [ "h" "j" "k" "l" "h" "j" "k" "l" "l" "k" "j" "k" "l" ]   165 exe "call Dualbind( "" key "' , "h" key "' )"   endfor  | 97   | Time Artist<br>4:36 Christ  |
| <pre>close() { HHH close client. Fill master if empty, remove stack if empty, he close.set_vars</pre>  | 30 H mouse<br>31 hc mouseunbindall   | lb }<br>17<br>18 H resets the size of the framebuffer for the tty   | 66 " get ya some output from shell commands<br>  67 noorewap <leader>sh :!sh<cr></cr></leader>   | 1 99 open%<br>1100 esac<br>1101 }  | Playing: Chris  |
| [ \$emptyMaster = ')' ] && hoc , focus -e \$stackD , shift -e \$master &&l<br>  [ \$emptyStack = ')' ] && hoc , focus -e \$stackD , remove    1  | 30 A Mouse<br>31 hc Mouseunbind311<br>32 hc Mousebind \$Mod-button1 move<br>33 hc Mousebind \$Mod-button2 mon<br>34 hc Mousebind \$Mod-button2 resize  | 19 fbg() {<br>20  [ -z "\$\$" ] ‱ fbset -g 1600 900 1600 900 32    fbset -g "\$\$" "\$<br>21 }  | 166 "get ya soma output From shell commands<br>167 nomerany (Laader)sh .!sh/CRD<br>168 vnoremay (Laader)sh davo(Esc)p: !sh/CRDdd;'vPjdd'v<br>169 nomemay (Laader)sp : !python/CRD<br>10 vnoremay (Laader)sp :!python/CRD   | 1103 "<br>1103 M the search() is the default behavior, but I also have<br>1104 M aliased to 'brws', so when invoced that way, it runs t  |   |
| PR-wit H do resulting and svit   |  |   |  | F104 m attased to 'brws', so when invoced that way, it runs t<br>F105 if [[ \$0 = *brws ]];<br>F106 then sels-Mephon' S& browce  |   |
| 11   | The Pepping Short-backSpace Cycle_nonitor  | 23 H opens a twox session with an optional command<br>24 tw() { twox new-session "\$1" ;}<br>5  | 12 ympremp (Leader)c ""#<br>13 impremp (Leader)c (""P<br>13 impremp (Leader)c (""P<br>15 impremp (Leader)p "p<br>16 defonction Dualbland   | 130 M w aliased to 'brws', so when invoced that way, it runs t<br>1105 if [f g = *brws ]];<br>1306 then sel="\$PWO" ⋘ browse<br>1307 else search<br>1308 fi  |   |
| 11   | 39 hc kegbind \$Moo-Shift-Tab cycle_all -1<br>40 hc keybind \$Mod-c cycle  | 25<br>26 HH Tooks up a word using the local dictionaries<br>27 Hd() { dict "\$*"Vimpager; clear ;}<br>28 HH Tooks up a word using remote dictionaries<br>29 Hdr() { dict -h dict.org "\$*"Vimpager; clear; }  | 75 indrewap <leader>p ^Op<br/>  76 delfunction Dualbind</leader>   |  | ######################################  |
| 11   | M1 hc keybind \$Mod-h focus left<br>M2 hc keybind \$Mod-j focus down   | 28 MM tooks up a word using remote dictionaries<br>29 Mdr() { dict -h dict.org "\$*" vimpager; clear; }   |  |  | ##<br>###   |
| 11   | 43 nc keybind \$800-k Focus up<br>44 hc keybind \$800-l Focus right<br>45 hc keybind \$800-i jumpto urgent   |   |  |  | . 44444   |
| 11   | 46 hc keybind \$Mod-Shift-h shift left<br>47 hc keybind \$Mod-Shift-j shift down   |   |  |  | ******  |
| 11   | 48 hc keybind \$Aod-Shift-k shift up<br>49 hc keybind \$Aod-Shift-l shift right  |   |  |  | ни н  |
| :/dotfiles/config-herbstluftwm/swap 92,38 LL s   | 50 hc keybind \$Mod-m toggle focus_follows_mouse<br>rc/dotfiles/config-herbstluftwm/autostart 2,0-1 Top  |   |  |  | " → 0   |
|  |  |   |  |  |   |







```
MONTW
             WaitPC
                           ; Select next phase
      MOWWE
             PCPhase
                           ; (See EndPCX)
             EndPCX
      Goto
                           ; Exit PC
.
; Phase Restart init1 PCW
PCRIn1
      Call
              EEtoPCP
                           : Init powers counter
       MovLW
              RIn2PC
                           ; Select next phase
             PCPhase
       MovWF
                           ; (See EndPCX)
       Goto
             EndPCX
                           ; Exit PC
; Phase Restart init2 PCW
PCRIn2 Call
              EEtoPCR
                           ; Init resets counter
             ReInPC
                           ; Select next phase
; (See EndPCX)
       MOVIW
       MovWF
              PCPhase
       Goto
; Phase Active init 1 PCW
PCAIn1
      Call
              Pre24h
                           ; Init 24h counter
       MovLW
              AIn2PC
                           ; Select next phase
       MovWF
              PC Phage
                           : (See EndPCX)
                           ; Exit PC
       Goto
             EndPCX
                         ; Phase Wait
       BTFSS
              PCStat, PCRecvd
                           : PC received?
       Goto
              PCWait1
                            Branch if not
       BCF
              PCStat, PCRecvd
                            Acknowledge PC received
       MovLW
              AIn1PC
                           ; Select next phase
       MovWF
              PCPhase
                           ; (See EndPCX)
       Goto
             EndPCX
                           : Exit PC
                           ; Check delay counter (initial del
PCWait1
      MovF
              PCDCntr,f
       SkpZ
                           ; Skip if counter done (=zero)
       Goto
              EndPC
                           ; Exit PC if not yet done
                           ; Select next phase
       MOVIW
              ReInPC
       MovWF
                           ; (See EndPCX)
              EndPCX
                           ; Exit PC
; Phase Reset PCW
PCRes
              PCStat, ResPls
                           ; Reset pulse on
       MovF
              PCDCntr,f
                           ; Check delay counter (reset pulse)
       SkpZ
                           ; Skip if counter done (=zero)
       Goto
              EndPC
                           ; Exit PC if not yet done
              PCStat, ResPls
                           ; Reset pulse off
       MovLW
             Ini4PC
                           ; Select next phase
       MOVWE
              PCPhase
                           ; (See EndPCX)
             EndPCX
      Goto
                           ; Exit PC
; Phase Power PCW
```

# Case: Scrum Sprint Planning

- What is the measure of success for the coming sprint?
- "What a strange question!
   We're Agile, so we deliver working software. Don't you know?"
- Note: Users are not waiting for software: they just need improved performance of what they're doing
- How about a requirement for 'Demo': No Questions No Issues
- How's that possible !!?

They actually succeeded!

#### Demo??

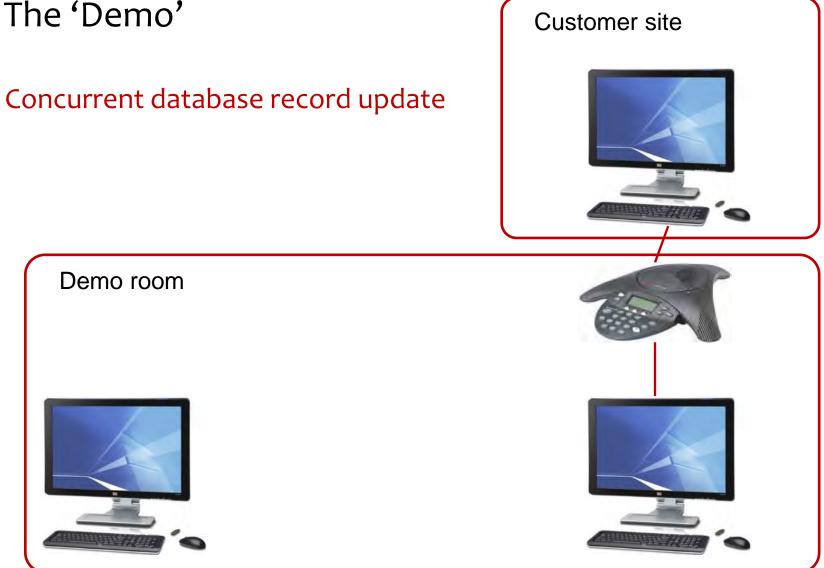


- Give the delivery to the stakeholders
- Zip your mouth
- Keep your hands handcuffed on your back
- and o-b-s-e-r-v-e what happens
- Seeing what the stakeholders actually do provides real feedback
- Then we can 'talk business' with the stakeholders
- Is this what you do?





### The 'Demo'



# Delivery Strategy Suggestions (Requirements)

- What we deliver will be used by the appropriate users immediately, within one week not making them less efficient than before
- If a delivery isn't used immediately, we analyse and close the gap so that it will start being used (otherwise we don't get feedback)
- The proof of the pudding is when it's eaten and found tasty, by them, not by us
- The users determine success and whether they want to pay (we don't have to tell them, but it should be our attitude)

# Case: How much legwork is being done in your project?

- Requirements/specifications were trashed out with product management
- Technical analysis was done and
- Detail design for the first delivery



#### At the first delivery:

James: How is the delivery? (quality versus expectation)

Adrian: It's exactly as expected,
 which is absolutely unprecedented for a first delivery;
 the initial legwork has really paid off

# Some techniques shown

- Design
- Drawings
- DesignLog
- Review
- No Questions No Issues

A Zero Defects attitude makes an immediate difference

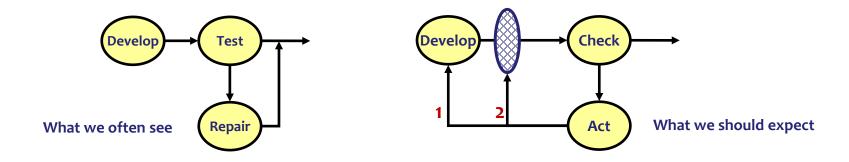
## Basic approach

Design the requirement
Review
Design implementation
Review
Implement (code?)
Review

• Test doesn't find issues (because they're not there)

## What's in it for QA?

- Did we see much testing in the previous?
- Testing shouldn't find anything (because there should be no issues)
- Did you ever find similar issues as you found before?
  - First time: Developers 'fault'
  - Second time: Testers 'fault'



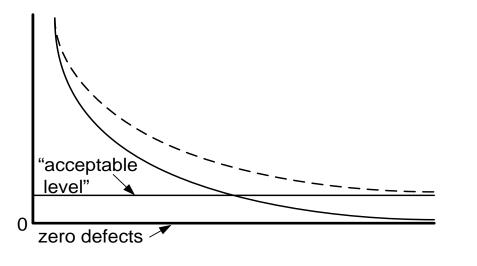
QA to help developers to produce less and less defects

# Do we deliver Zero Defect products?

- How many defects do you think are acceptable?
- Do the requirements specify a certain number of defects?
- Do you check that the required number has been produced?

### In your projects

- How much time is spent putting defects in?
  - How much time is spent trying to find and fix them?
- Do you sometimes get repeated issues ?
- How much time is spent on defect prevention?
- Could you use "No Questions No Issues"?



# Approaching Zero Defects is Absolutely Possible

If in doubt, let's talk about it

**Niels Malotaux**