

SMART DATA (LAZY TESTER)

moar testing, moar better

LAZY IS GOOD!

“Laziness is the quality that makes you go to great effort to reduce overall energy expenditure”

-Larry Wall (creator of perl)

SMART DATA

test input that's deliberately and intentionally designed

does need:

(some) knowledge of the domain

(some) knowledge of what might go wrong

CRAFTING DATA ISN'T NEW...

edge cases

special inputs

fixing found bugs ...

WHAT HAVE YOU DONE FOR ME LATELY?

patterns can expose problems

breadcrumbs ... where was I?

encoding success for fun and profit

WE INTERRUPT YOUR REGULARLY
SCHEDULED PRESENTATION...

PATTERNS

PATTERNS AS ORGANIZATION

what do you tend to forget across test scenarios?

intelligent defaults for username, password, address,
account #'s ...

“uname1 has password uname1pw has address 111 Uname St” ...

WE ARE PATTERN MATCHING CREATURES

WHAT CAN PATTERNS HELP US SPOT?

111111111111

222222222222

33333343333

444444444444

555555555555

666666666666







UTTERLY CONTRIVED EXAMPLE

```
[timestamp], fredr, "123 Cherry Ln", "Boise, Id 83709", create
[timestamp], georgek, "777 N 777th Ave", "Williamsburg, VA", create
[timestamp], sallyq, "Snotsniffle, ID", "Blorgsnot ST", create
[timestamp], snuffie, "314 whereami st", "Scranton, IL 73212", create
[timestamp], doodlebug, "555 MilleniumHandAndShrimp Road", "Whoopsie, OK", create
[timestamp], georgek, "7 Tower Ste 8000", "St Croix, CA", create
[timestamp], amazon777, "Wowserdoodle Ct", "LouisLouis MT 67890", create
[timestamp], another1, "Wowserdoodle Ct", "LouisLouis MT 67890", create
[timestamp], another2, "Wowserdoodle Ct", "LouisLouis MT 67890", create
[timestamp], another3, "Wowserdoodle Ct", "LouisLouis MT 67890", create
```

```
[timestamp], user1_uname, "user1_addr1", "user1_addr2", create
[timestamp], user2_uname, "user2_addr1", "user2_addr2", create
[timestamp], user3_uname, "user3_addr2", "user3_addr1", create
[timestamp], user4_uname, "user5_addr1", "user4_addr2", create
[timestamp], user5_uname, "user4_addr1", "user5_addr2", create
[timestamp], user2_uname, "user6_addr1", "user6_addr2", create
[timestamp], user7_uname, "user7_addr1", "user7_addr2", create
[timestamp], user8_uname, "user9_addr1", "user8_addr2", create
[timestamp], user9_uname, "user8_addr1", "user9_addr2", create
[timestamp], user10_uname, "user10_addr1", "user10_addr2", create
```



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[timestamp], user1_uname, "user1_addr1", "user1_addr2", create
[timestamp], user2_uname, "user2_addr1", "user2_addr2", create
[timestamp], user3_uname, "user3_addr2", "user3_addr1", create
[timestamp], user4_uname, "user5_addr1", "user4_addr2", create
[timestamp], user5_uname, "user4_addr1", "user5_addr2", create
[timestamp], user2_uname, "user6_addr1", "user6_addr2", create
[timestamp], user7_uname, "user7_addr1", "user7_addr2", create
[timestamp], user8_uname, "user9_addr1", "user8_addr2", create
[timestamp], user9_uname, "user8_addr1", "user9_addr2", create
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[timestamp], user5_uname, "user4_addr1", "user5_addr2", create
[timestamp], user2_uname, "user6_addr1", "user6_addr2", create
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[timestamp], user4_uname, "user5_addr1", "user4_addr2", create
[timestamp], user5_uname, "user4_addr1", "user5_addr2", create
[timestamp], user2_uname, "user6_addr1", "user6_addr2", create
[timestamp], user7_uname, "user7_addr1", "user7_addr2", create
[timestamp], user8_uname, "user9_addr1", "user8_addr2", create
[timestamp], user9_uname, "user8_addr1", "user9_addr2", create
[timestamp], user10_uname, "user10_addr1", "user10_addr2", create
```



```
[timestamp], user1_username, "user1_addr1", "user1_addr2", create
[timestamp], user2_username, "user2_addr1", "user2_addr2", create
[timestamp], user3_username, "user3_addr2", "user3_addr1", create
[timestamp], user4_username, "user5_addr1", "user4_addr2", create
[timestamp], user5_username, "user4_addr1", "user5_addr2", create
[timestamp], user2_username, "user6_addr1", "user6_addr2", create
[timestamp], user7_username, "user7_addr1", "user7_addr2", create
[timestamp], user8_username, "user9_addr1", "user8_addr2", create
[timestamp], user9_username, "user8_addr1", "user9_addr2", create
[timestamp], user10_username, "user10_addr1", "user10_addr2", create
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[timestamp], doodlebug, "555 MilleniumHandAndShrimp Road", "Whoopsie, OK", create
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[timestamp], user3_uname, "user3_addr2", "user3_addr1", create
[timestamp], user4_uname, "user5_addr1", "user4_addr2", create
[timestamp], user5_uname, "user4_addr1", "user5_addr2", create
[timestamp], user2_uname, "user6_addr1", "user6_addr2", create
[timestamp], user7_uname, "user7_addr1", "user7_addr2", create
[timestamp], user8_uname, "user9_addr1", "user8_addr2", create
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[timestamp], snuffie, "314 whereami st", "Scranton, IL 73212", create
[timestamp], doodlebug, "555 MilleniumHandAndShrimp Road", "Whoopsie, OK", create
[timestamp], georgek, "7 Tower Ste 8000", "St Croix, CA", create
[timestamp], amazon777, "Wowserdoodle Ct", "LouisLouis MT 67890", create
[timestamp], another1, "Wowserdoodle Ct", "LouisLouis MT 67890", create
[timestamp], another2, "Wowserdoodle Ct", "LouisLouis MT 67890", create
[timestamp], another3, "Wowserdoodle Ct", "LouisLouis MT 67890", create
```

PATTERNS CAN HELP
IDENTIFY PROBLEMS

All work and no play makes Jack a dull boy
All work and no play makes Jack a dull boy
All work and no play mmakes Jack a dull boy
v All work and no PLaY ma es Jack a dull boy
Allworkand noplaymakesJack a dull boy
All work and no play makes Jack a dullboy.
All work and no play makes Jack a dull boy
All work and notplay makes Jack a dull boy
All work and nopEay makes Jack a dull boy
All work a_rd no play makes Jack a dull boy
All work and no play makes Jack a dull boy
All work andno play makes Jack a dull boy
All work and noplaymakesjack a dullboy

~~All work and no play makes Jack a dull boy~~

All work andno play makes Jack a dull boy
All work and no play makes Jack a dull boy

TEST DATA CAN HELP FIND
OR HIDE BUGS...

WHERE WAS I?

(OR: HOW TEST DATA
CAN GET YOU THERE
AND BACK AGAIN)

TRACK IT!

text bodies, file names ...

include TEST NAMES, TIMESTAMPS ...

A Web Page

← → ✕ 🏠 🔍

Title

Description

Tags

Blog Entry

A Web Page

← → ✕ 🏠 🔍





Title

Description


Tags

Blog Entry

A Web Page



https://mysnazzyblog.com



Title

longblogtest1, blogentry1 title, bunch of title text blah

Description

longblogtest1 blogentry1 description yeah ok whatever

Tags

test1tag1,test1tag2,test1tag3,universaltag,sharedtag

Blog Entry

longblogtest1, 2018.01.23 11:36, user user1, blog entry field. Stardate 20180123, captains log. We are now testing the blog entry field. And here's where we enter text that we're testing blork blarg snot doodle !#\$%# ... (you get the idea)

Save

Cancel

ENCODING

HINTS IN THE DATA

how can you tell...

what is the max length a textbox will hold? (beyond a few chars, it becomes hard)

does it accept the input, but silently truncate?

where does it truncate?

abcdefghijklmno20pqrstuvwxyz30and when40 it beco50mes nece60

A Web Page

X

https://mysnazzyblog.com

Q

Title

longblogtest1, blogentry1 title, bunch of title text blah

Description

longblogtest1 blogentry1 description yeah ok whatever

Tags

test1tag1,test1tag2,test1tag3,universaltag,sharedtag

Blog Entry

Lorem ipsum dolor sit amet, consectetur adipiscing elit. In luctus vestibulum enim, vitae ulla100mcorper orci pharetra vel. Phasellus egestas er150at eu ultricies blandit. Orci varius natoque pe200natibus et magnis dis parturient montes, nascetur ridiculus mus. Duis pharetra dui ut pulvinar300 venenatis. Donec faucibus aliquam diam, vel co350ngue tellus laoreet id. Duis porta fringilla co400nnulla. Aliquam aliquet, mi vel sodales dapibus450s, lectus tellus pulvinar augue, a dignissim do500lor lacus ac eros. Pellentesque suscipit eros 550leo, non pretium leo vestibulum vitae. Pellente600sque cursus sem a rutrum faucibus. Sed commodo 650dui arcu, quis accumsan libero pellentesque et700 Suspendisse pretium risus a nibh malesuada, eg750et tincidunt elit pretium. Proin tempor lacus u800t elementum tristique. Donec ornare tristique n850unc ac tristique. Duis in egestas lectus, et di900gnissim libero. In rutrum tellus libero. Mauris950 imperdiet id sapien vel porta. Praesent laore1000t sem ut tellus vestibulum, nec tempor nisl lae1050reet. Proin iaculis dignissim nibh ut lacinia1100. Praesent dictum bibendum pellentesque. Sed n1150on dapibus ante. Nam ultrices tristique ligula1200 id vestibulum. Cras id ipsum ut augue gravida1250 tincidunt. Suspendisse sit amet dui quis null1300a tempus rutrum vel non odio. Integer a tempus1350 purus. Cras egestas ipsum vitae leo luctus te1400mpor.

Save

Cancel

(OVER)LOADING DATA

```
1,apples,1.00,produce  
2,bananas,3.50,produce  
3,cheetos,2.98,munchies  
4,pringles,4.99,munchies  
...  
321,cards against humanity,19.99,game
```

Loaded 216 items.

Did it crash and then recover?

Crash and die?

(OVER)LOADING DATA

```
id,name,price,category
1,id1_cat1_1of3,1.03,cat1
2,id2_cat1_2of3,2.03,cat1
3,id3_cat1_3of3,3.03,cat1
4,id4_cat2_1of5,1.05,cat2
5,id5_cat2_2of5,2.05,cat2
6,id6_cat2_3of5,3.05,cat2
7,id7_cat2_4of5,4.05,cat2
8,id8_cat2_5of5,5.05,cat2
9,id9_cat3_1of4,1.04,cat3
10,id10_cat3_2of4,2.04,cat3
11,id11_cat3_3of4,3.04,cat3
12,id12_cat3_4of4,4.04,cat3
```

wait ... this is getting OLD ...

(OVER)LOADING DATA

data cross checks/duplication is OK

give yourself multiple clues

TIME WAITS FOR
NO-ONE

ALL TEH TIMESTAMPS!

uniqueTestId@13.27.2019.09.14.com

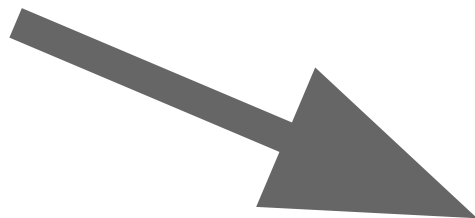
What does this tell me...?

When the unique test was started...

Paired with a processing date (receiving timestamp in system) how long it took to get to that point.

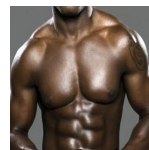
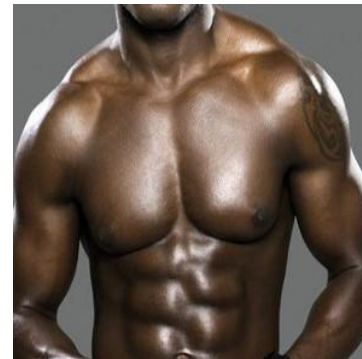
BEYOND TEXT

super-resize me



(WHAT COULD POSSIBLY GO
WRONG?)



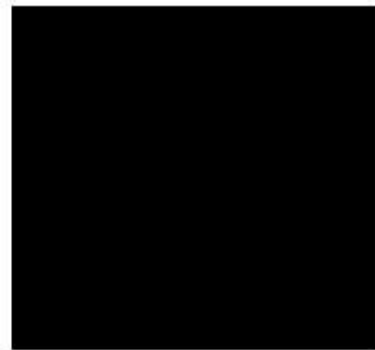
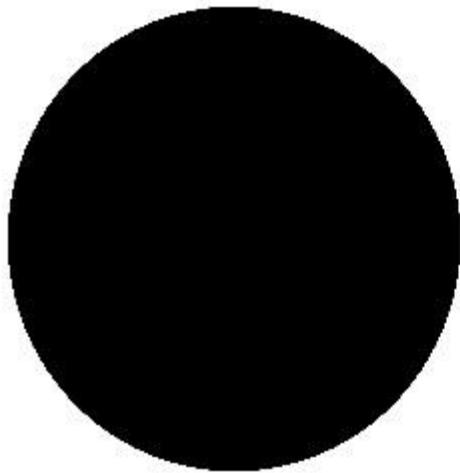




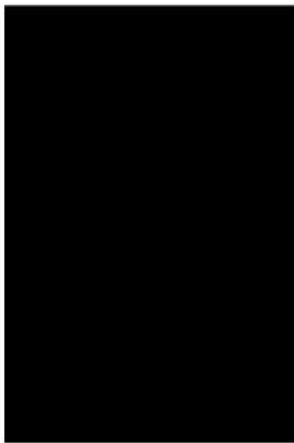
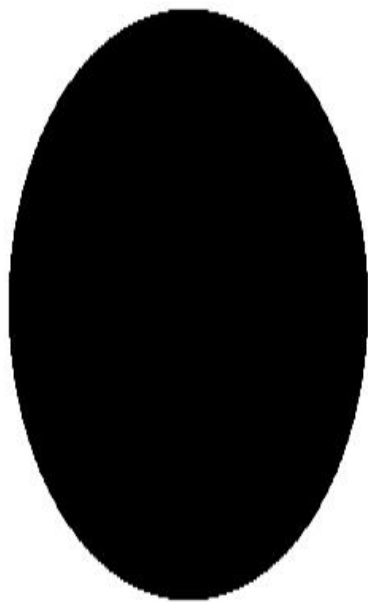




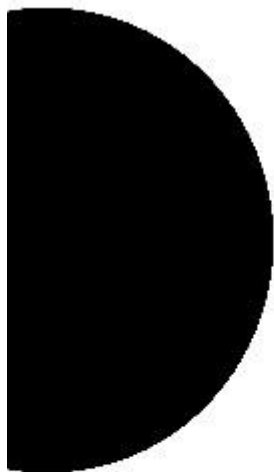
ENCODE *HINTS*..



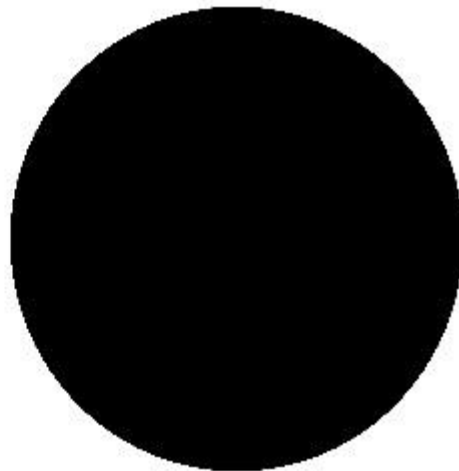
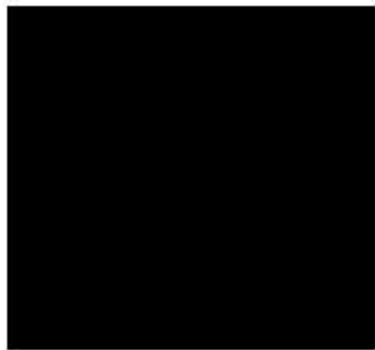
The text goes thisaway!



The text goes thisaway!



The text goes thisaway



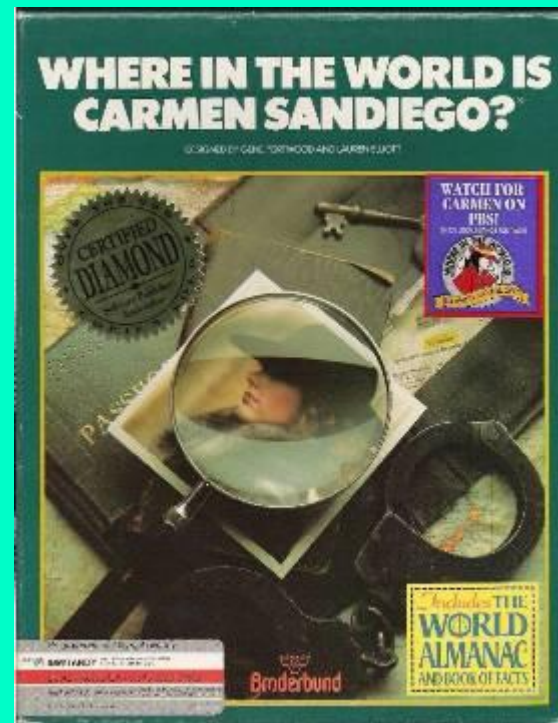
The text goes this way!



ENCODE WHAT SUCCESS
(AND FAILURE) LOOKS LIKE
IN THE DATA

WHERE IN THE WORLD

is your data?



ADDRESSING THE PROBLEM

Shipping address:

Dunder Mifflin

1234 Cherry Tree Lane

Boise, ID 11333

ADDRESSING THE PROBLEM



ADDRESSING THE PROBLEM

Getting bulk valid address data is surprisingly tricky

For precise locations, google earth + business residences

ADDRESSING THE PROBLEM

Validating where these go...

Via Gaetano Abela, 3, 96100 Siracusa SR, Italy

Rosia Rd Gibraltar GX11 1AA Gibraltar

999F+MH Neah Bay, Washington

CONSTRUCTION

i can haz make?

I'VE GOT A BAD
FEELING ABOUT THIS

WHAT TENDS TO GO WRONG - TEXT

length / truncation

special/invisible characters

encoding (utf-8, ascii, utf-16/32)

(actually...what **doesn't** go wrong with text..??)

WHAT TENDS TO GO WRONG - IMAGES

aspect ratios

(re)compression artifacts

cropping

rotation/mirroring

WHAT TENDS TO GO WRONG - VIDEO

everything that goes wrong with images PLUS

audio sync

buffering/catchup

motion artifacting

WHAT TENDS TO GO WRONG - DATA PERSISTENCE

off-by-1

encoding buggery

DATES AND TIMES

WHAT TENDS TO GO WRONG - LAYOUT

overlapping

truncation

alignment



WHAT TENDS TO GO WRONG - AUDIO

compression artifacts

speed

pitch

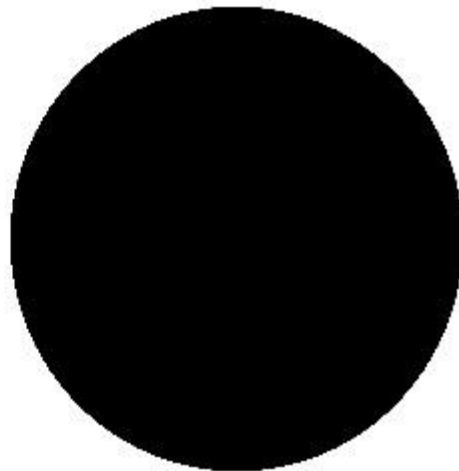
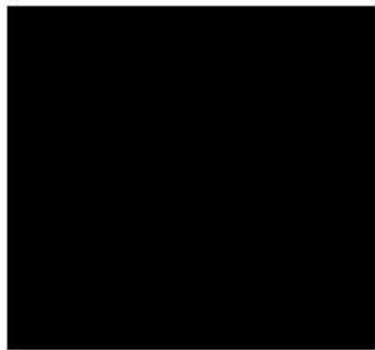
range

CAN I HIGHLIGHT IT?

```
[timestamp], user1_uname, "user1_addr1", "user1_addr2", create
[timestamp], user2_uname, "user2_addr1", "user2_addr2", create
[timestamp], user3_uname, "user3_addr2", "user3_addr1", create
[timestamp], user4_uname, "user5_addr1", "user4_addr2", create
[timestamp], user5_uname, "user4_addr1", "user5_addr2", create
[timestamp], user2_uname, "user6_addr1", "user6_addr2", create
[timestamp], user7_uname, "user7_addr1", "user7_addr2", create
[timestamp], @!*s!~~, "IF YOU SEE THIS SOMETHING IS BROKEN!", "user8_addr2", create
[timestamp], user9_uname, "user8_addr1", "user9_addr2", create
[timestamp], user10_uname, "user10_addr1", "user10_addr2", create
```

```
[timestamp], user1_uname, "user1_addr1", "user1_addr2", create
[timestamp], user2_uname, "user2_addr1", "user2_addr2", create
[timestamp], user3_uname, "user3_addr2", "user3_addr1", create
[timestamp], user4_uname, "user5_addr1", "user4_addr2", create
[timestamp], user5_uname, "user4_addr1", "user5_addr2", create
[timestamp], user2_uname, "user6_addr1", "user6_addr2", create
[timestamp], user7_uname, "user7_addr1", "user7_addr2", create
[timestamp], @!*s!~~, "IF YOU SEE THIS IMPORT PARSING MAY BE BROKEN!", "user8_addr2",
create
[timestamp], user9_uname, "user8_addr1", "user9_addr2", create
[timestamp], user10_uname, "user10_addr1", "user10_addr2", create
```





The text goes this way!

WHAT ABOUT THE
STUFF I DON'T KNOW
THAT I DON'T
KNOW?

MAKE A LIBRARY

SUMMARY

patterns, patterns,
patterns

capture what you're doing
and where you've been

encode success criteria