

Strict validation versus accepting anything

Evan Jones



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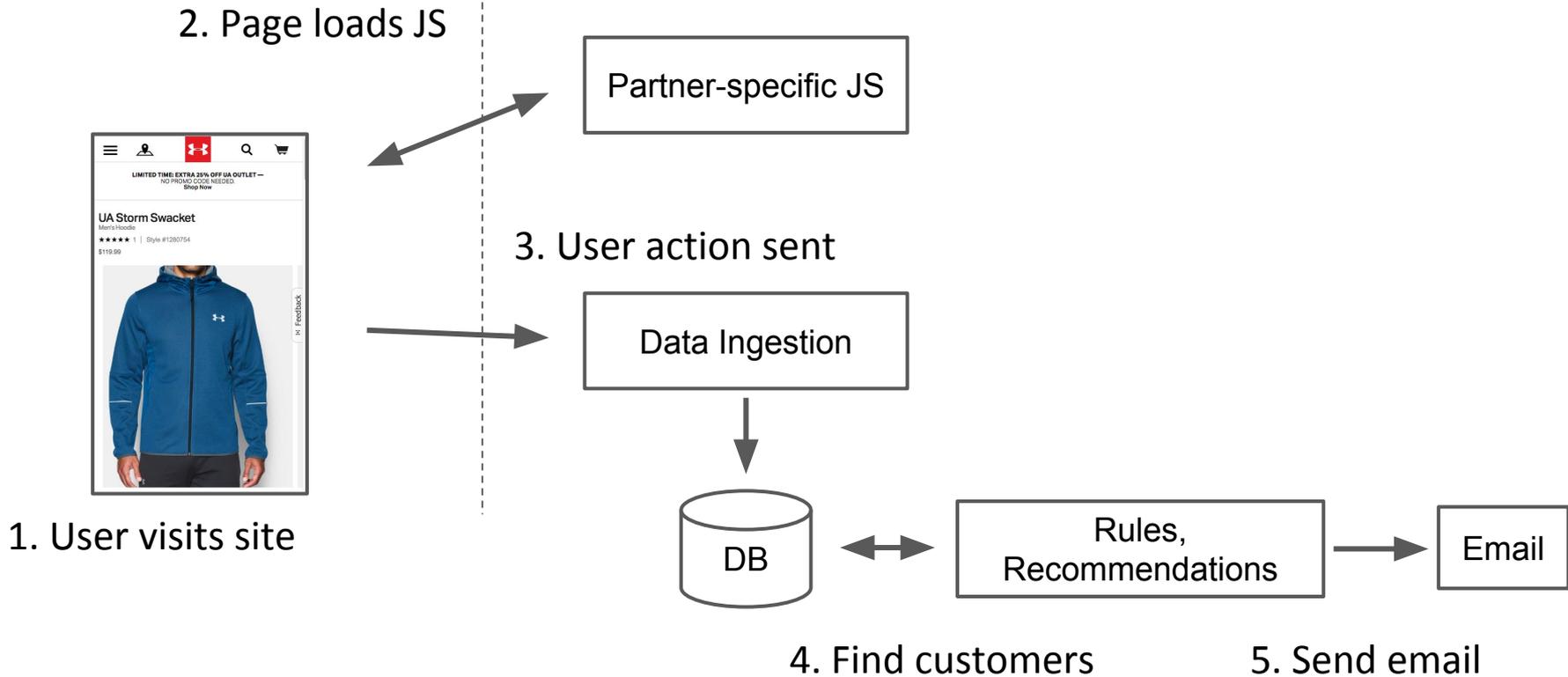
Exact Fit



**ACDelco Distributor
Cap**

Exact Fit

Recommendations need
product data



Data ingestion



Data ingestion



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Product data

```
"id":      429174,  
"name":    "Pilot G2 Premium Retractable...",  
"price":   13.99,
```

Product data

```
"id":      429174,  
"name":    "Pilot G2 Premium Retractable...",  
"price":   13.99,
```



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Browning® Denali Mummy Sleeping Bag

Regular Price: \$129.99

Item: IK-580379

ADD TO CART 

Product data

```
"id":      "429174", // may contain letters  
"name":    "Pilot G2 Premium Retractable...",  
"price":   13.99,
```

Product data

```
"id":      "429174", // may contain letters  
"name":    "Pilot G2 Premium Retractable...",  
"price":   13.99,
```

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Product data

```
"id":      "429174", // may contain letters  
"name":    "Pilot G2 Premium Retractable...",  
"price":   "£13.99, // may contain currency
```

What is **valid** product data?

Design A: Accept anything!

Design B: Strict validation!

Design choice: Validation versus flexibility

Programming languages: static versus dynamic typing

Databases: Strict versus flexible schemas (SQL vs NoSQL)

Robustness Principle (Postel's Law)

“Be liberal in what you accept, and conservative in what you send”

Advantage: implementations can interoperate (e.g. TCP)

Disadvantage: bugs can become “standard” (e.g HTML)

Original policy: Accept anything

Rationale: One chance to store the data; fix it later

Implementation: Store any key/value pairs

Fun ensues ...

price: 13 (integer), 13.99 (float), “13.99”, “£13.99”

products without ids

products with both “title” and “name”

Evaluation

- + Store any e-commerce data
- + Fix any data bugs

Evaluation

- + Store any e-commerce data
- + Fix any data bugs

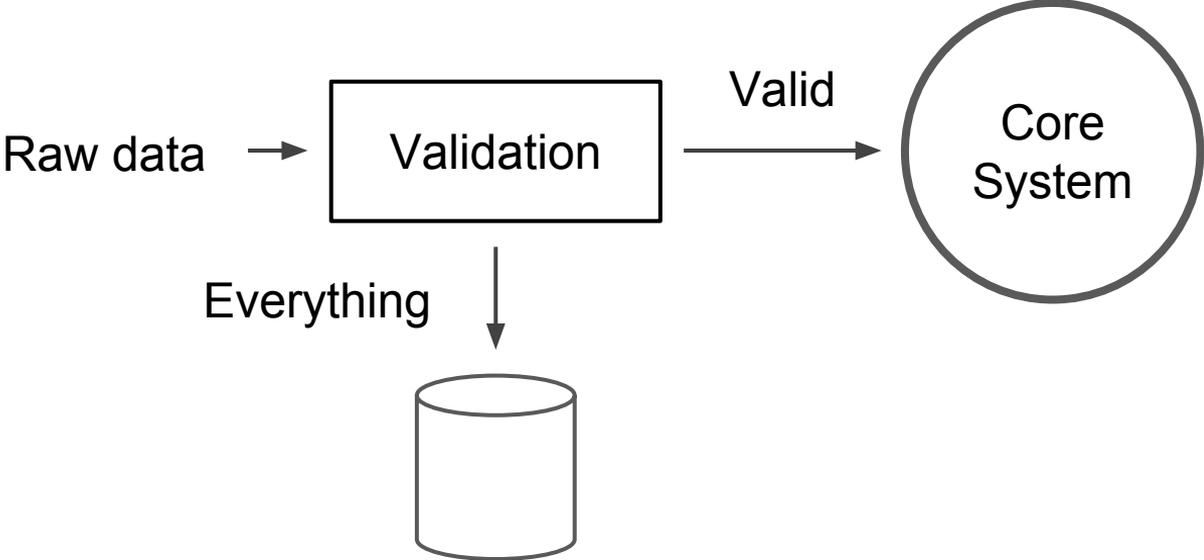
- Processing is much harder
- Harder to test if we are sending the right data

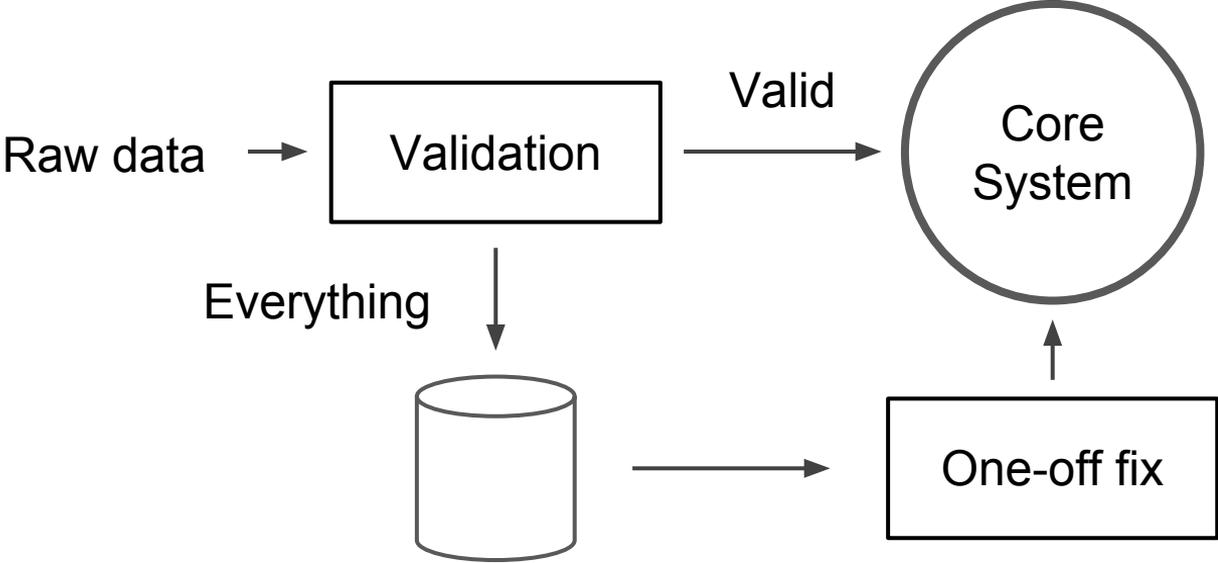
Raw data



Validation

Core
System





Conclusion: Err on the side of validation

Find errors sooner

Simplifies the overall system

Easier to relax restrictions than to add them

Want to fix errors later? Record everything

Thanks!

Evan Jones

<http://www.evanjones.ca/>

Bluecore

<http://www.bluecore.com/>



BLUECORE

Store raw but require “core” schema

Store the raw data we receive

Validate “core” fields: return helpful error messages

e.g. must have id, price is a string, use “name” not “title”

Found *many* data bugs