Web technologies

Sanitizing and validating client inputs

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- What can go wrong? **Effects range between nothing to loss of customer data and breaches into computer systems in general.**

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- Even some values accessible via `$_SERVER` super-global

SQL injection

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- *Log-in example*

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- If possible, always use PDO and bind parameters
- `http://php.net/security.database.sql-injection.php`

The danger is real

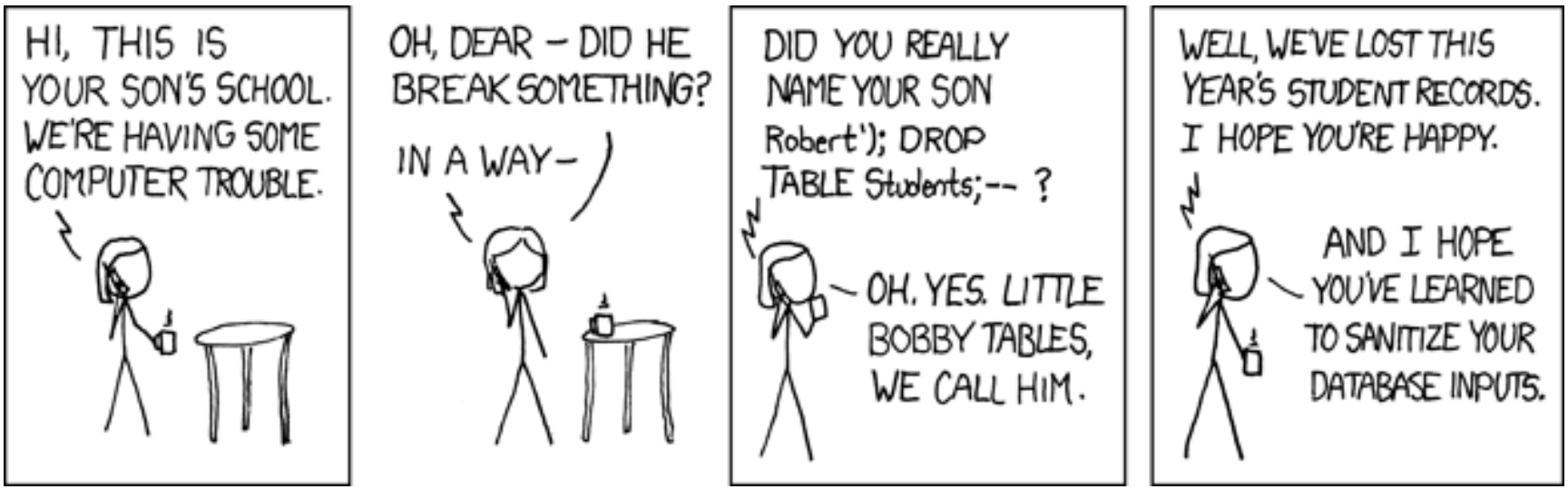

Figure: `http://xkcd.com/327`

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  - on the **server side** (in the web application).

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- `http://www.w3schools.com/html/html_form_attributes.asp`
- `http://www.w3schools.com/js/js_validation.asp`

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- **Remember:** HTTP requests can be sent without the browser (recall telnet, curl, Requests library).
- **We must always validate the data on the server.**

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  - If we require a number withing specified range, we make sure that the data is a number and of appropriate size.
  - Sometimes we apply filters to data and then proceed with processing: a filter simply strips or converts all illegal characters from the data.

Server-side validation: Useful functions

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- `strip_tags($input)` removes HTML tags; can be insecure if used improperly

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- See *add book* example

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- Answer: `/script.php/arbitrary/content`
- Instead of `/arbitrary/content` an attacker can modify the link to contain JavaScript code snippet that will be reflected from the web application and loaded into the client's browser if your application prints the content of the `$_SERVER["PHP_SELF"]`. This is a XSS attack.

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