

Privacy, developers, and consent

Usable Security and Privacy

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WATERLOO

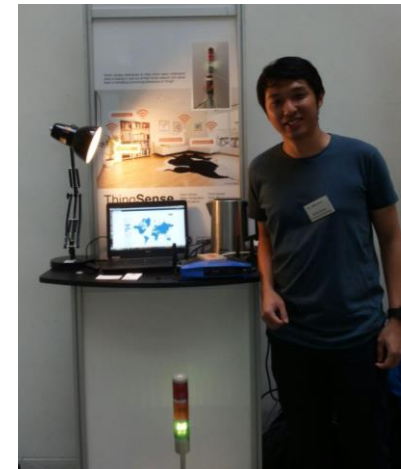
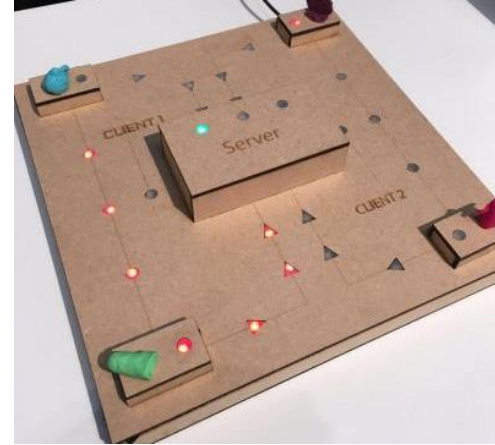
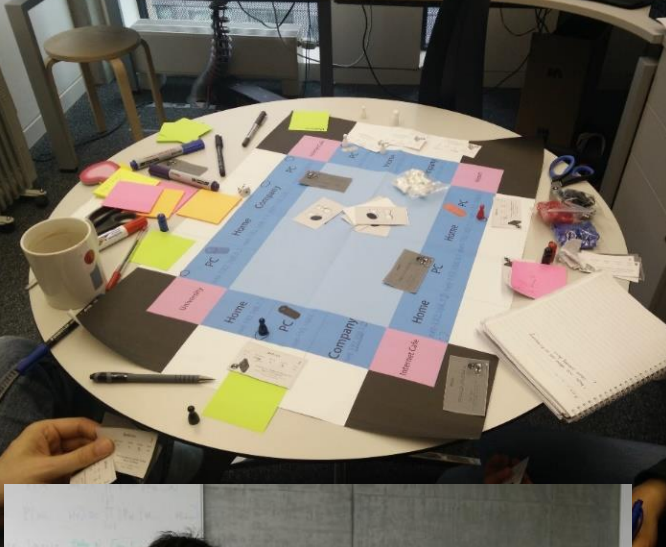
FACULTY OF
ENGINEERING

```
public void loadForm(){
    UserMessagingPlatform.loadConsentForm(
        this,
        new UserMessagingPlatform.OnConsentFormLoadSuccessListener() {
            @Override
            public void onConsentFormLoadSuccess(ConsentForm consentForm) {
                MainActivity.this.consentForm = consentForm;
                if(consentInformation.getConsentStatus() == ConsentInformation.ConsentStatus.REQUIRED) {
                    consentForm.show(
                        MainActivity.this,
                        new ConsentForm.OnConsentFormDismissedListener() {
                            @Override
                            public void onConsentFormDismissed(@Nullable FormError formError) {
                                // Handle dismissal by reloading form.
                                loadForm();
                            }
                        }
                    );
                }
            }
        },
        new UserMessagingPlatform.OnConsentFormLoadFailureListener() {
            @Override
            public void onConsentFormLoadFailure(FormError formError) {
                // Handle Error.
            }
        }
    );
}
```

Infinite loop till user
consents.

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- Phishing
- Updating by system administrators
- Developer-centered privacy
- Experimentation in VR
- Bystander privacy for smart speakers
- Serious games
- IoT
- Behavior tracking on websites



We could start by properly defining privacy....

- The Cambridge Dictionary

- Someone's right to keep their personal matters and relationships **secret**
 - Right to control the disclosure and use of personal data
 - Right to not disclose information
- **Be alone and control access** to themselves
 - Right to be let alone
 - Right to control access to themselves
 - Right to have a space (physical, digital, mental) that is inaccessible to others



What do developers ask about regarding privacy?

How are developers defining “privacy”?

How to disable Google asking permission to regularly check installed apps on my phone?

Asked 5 years

Can I trust react-devtools not to breach my **privacy**?

Asked 11 months ago Active 11 months ago Viewed 141 times

▲ I am starting to develop webapps in React, and I have found out that the Chrome extension react-devtools is almost a defacto requirement for coding react applications.

▼ 1
★ The tool (and react) is made by Facebook, a company infamously known for their complete lack of moral when it comes to data gathering and creepy surveillance of us all. And it requires the ability to access everything you are browsing (which is probably needed to work it's magic), in order to be installed.

★ react-devtools have almost 1,5 million users (and they are probably all developers). Am I supposed to believe that Facebook will not exploit this obvious opportunity to follow every single thing we developers do in Chrome?

🔄 Does anybody in here know anything about react-devtools, and have anybody tried to analyse what data react-devtools sends in what directions? Because frankly I don't have this amount of trust for Facebook anymore, but it seems like react-devtools is inevitable, if I want to make React apps? :-)

reactjs

facebook

security

privacy

share edit flag

asked Feb 6 '19 at 8:58



hasse

804 ● 1 ● 7 ● 20

Privacy aspects

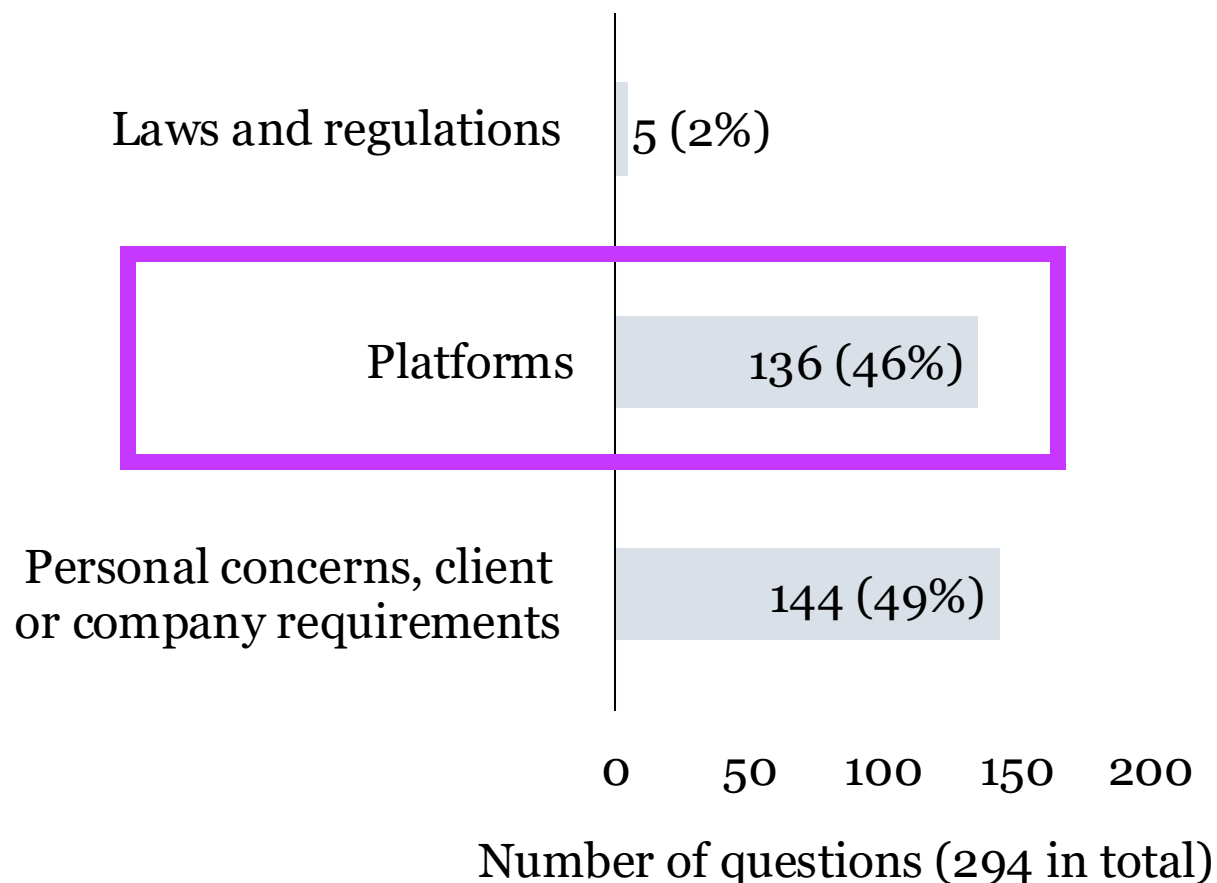
Topic	Questions	Views
Access control	40%	103,654
Developers with privacy concerns	24%	57,136
Privacy policies	13%	127,225
Developers as end-users	7%	89,279
Developers ignoring Privacy by Design principles	6%	9,681
Versions and updates	4%	22,269
Encryption	3%	11,100
Privacy and code issues	2%	2,523

- **Developers with privacy concerns; can I trust this service or company?**

“How to trust a ct-vantool’s und to breach my privacy via API (p.)? The tool (and react) is made by Facebook, a company infamously known for their simple Ad-ID of moral turpitude. I can’t get it to work, what am I doing wrong?” [52080930 - 2018]

“... comes to data gathering and creepy surveillance of us all. And it requires the ability to access everything you are browsing (which is probably needed to work it’s magic), in order to be installed.” [54549807 - 2019].

Drivers



■ Platforms

*“I am submitting my app on App Store Connect\My App page and when I submit for review, it shows **error** on App Information: **“You must provide a Privacy Policy URL.”** even I have pasted the link to the website show the privacy policy there. I have checked the link using <https://developers.facebook.com/tools/debug/sharing/> and they show no error. Do you know what could be the reason and how to fix it?” [53097654 - 2018].*

They are learning what privacy is from sources like platforms, libraries, and APIs.

What are advertising network APIs telling developers about privacy?

Advertising Get Started guides are not necessarily helpful for privacy understanding

Developers need help doing security and privacy right.

Unfortunately existing tools and guides are filled with dark patterns.

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                                // Handle dismissal by reloading form.
                                loadForm();
                            }
                        }
                    );
                }
            }
        },
        new UserMessagingPlatform.OnConsentFormLoadFailureListener() {
            @Override
            public void onConsentFormLoadFailure(FormError formError) {
                /// Handle Error.
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Infinite loop till user consents.

Google Ad Mob getting started guide

Advertising Get Started guides are not necessarily helpful for privacy understanding

This one asks for precise location data to be collected, but no opt-out button provided to user.

```
protected void presentConsentOverlay(Context context) {
    new AlertDialog.Builder(context)
        .setTitle("Location data")
        .setMessage("We may use your location, " +
            "and share it with third parties, " +
            "for the purposes of personalized advertising, " +
            "analytics, and attribution. " +
            "To learn more, visit our privacy policy " +
            "at https://myapp.com/privacy.")
        .setNeutralButton("OK", new DialogInterface.OnClickListener() {
            @Override
            public void onClick(DialogInterface dialog, int which) {
                dialog.cancel();
                // TODO: replace the below log statement with code that specifies how
                // you want to handle the user's acknowledgement.
                Log.d("MyApp", "Got consent.");
            }
        })
        .show();
}

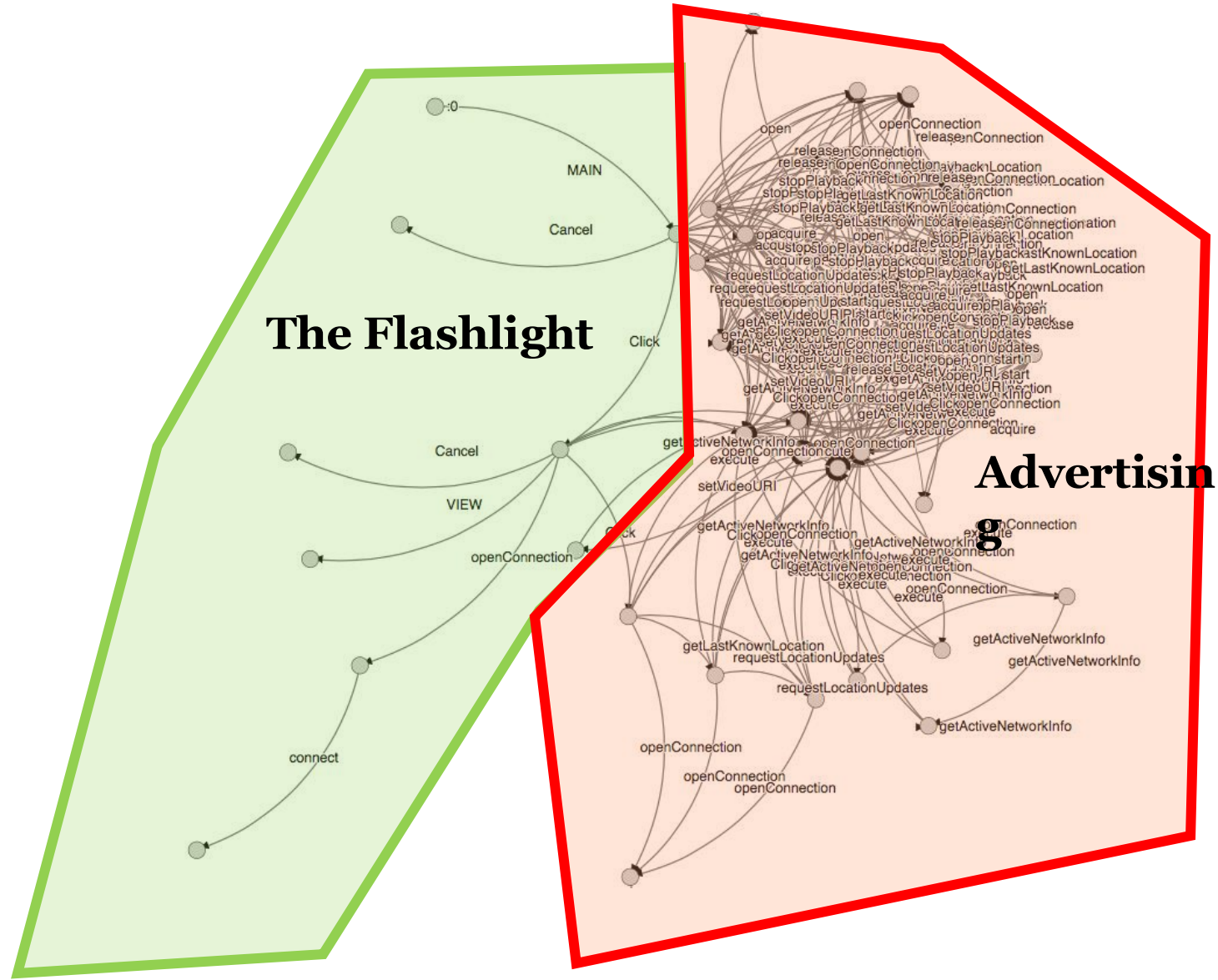
// To use the above method:
presentConsentOverlay(this);
```

Google Ad Mob getting started guide

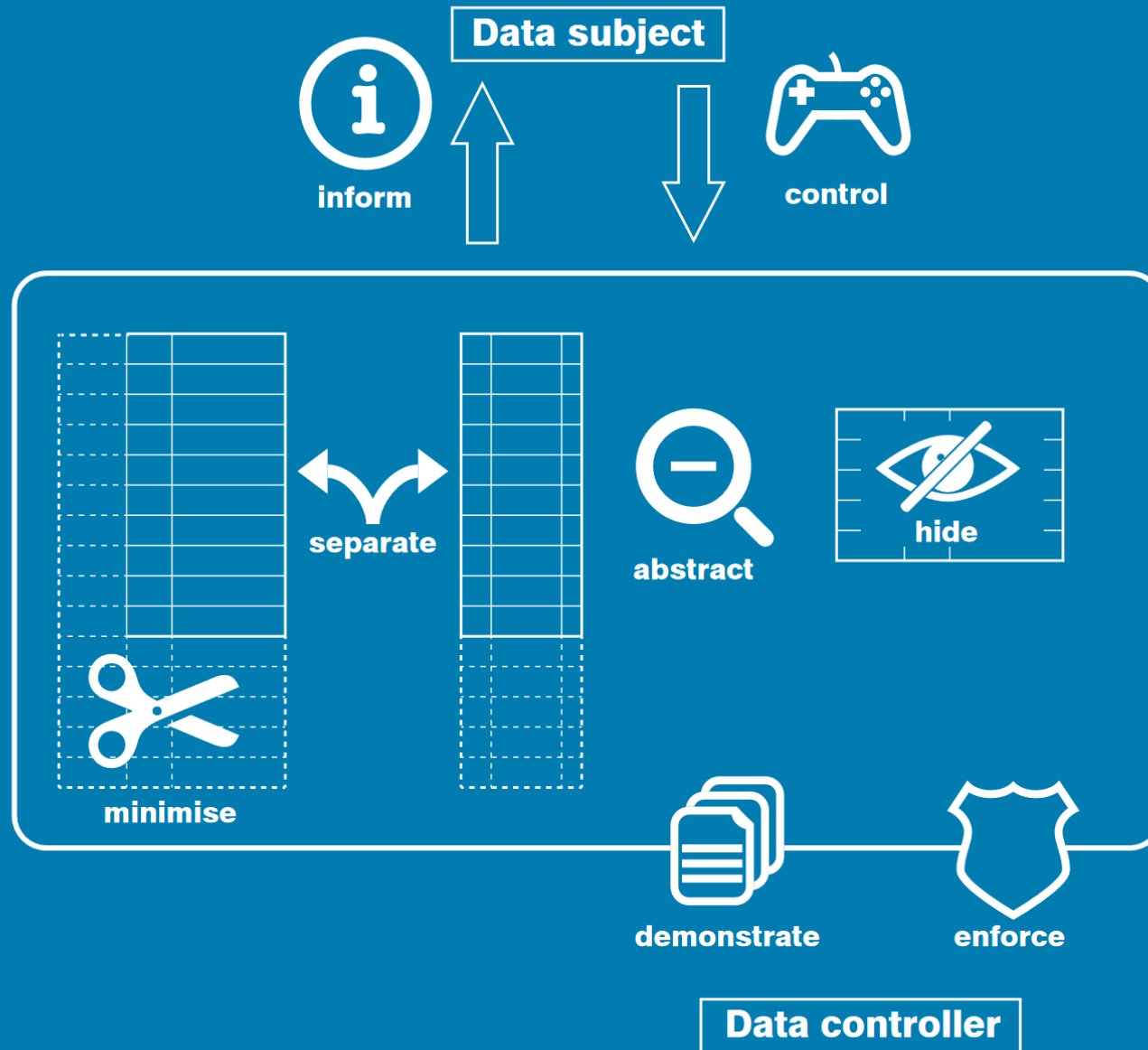
Flashlight App

Static analysis:
Break an app up into
a flow diagram

Often permissions
are not used by
developers directly,
instead they include
libraries or APIs that
use the permissions.

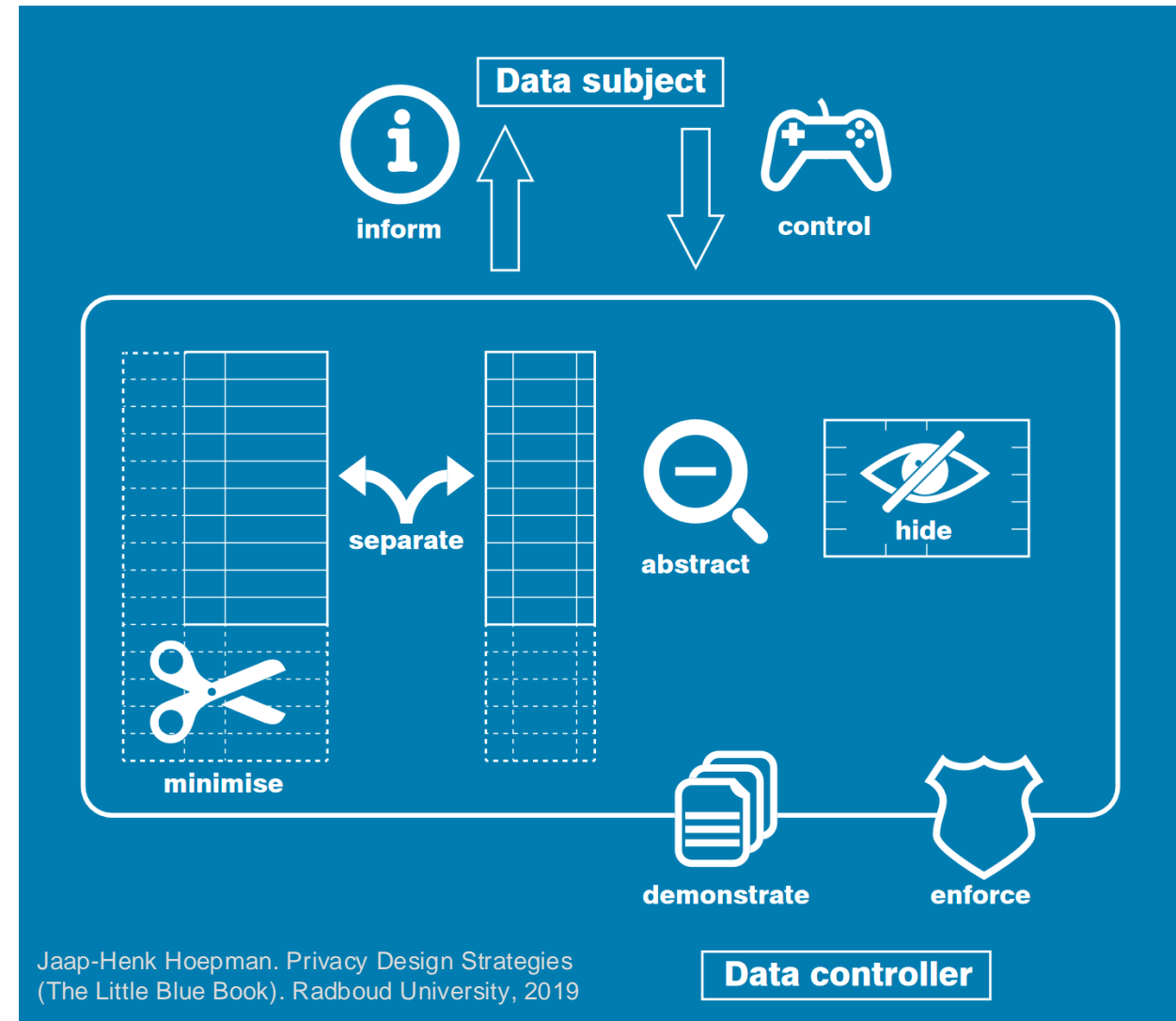


How can privacy be done correctly?



Privacy SO answers

Privacy design strategy	Occurrences
Inform	48 (43.2%)
Hide	45 (40.5%)
Control	35 (31.5%)
Minimize	33 (29.7%)
Abstract	5 (4.5%)
Separate	3 (2.7%)
Enforce	2 (1.8%)
Demonstrate	2 (1.8%)



Thank you

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