Permission Model

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Outline

- Introduction
- Literature survey
- Conclusion

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Introduction

- Smartphone popularity
- Role of Android

Introduction

- App development in Android
- Over 25 billion downloads

Introduction

- Risk involved
- Malicious apps can be uploaded

Introduction

- Private data can be stolen
- Current permission model is not sufficient

Permission Model of Android

- Coarse-Grained Model
- User is bound to accept all the permissions for successful installation

Drawback

- Random permission can be requested at the time of installation

- It can then be misused once user grants the access

Solution

- Fine-Grained Permission model

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TISSA [1]

- Permission Category: Trusted

  'Trusted' works same as the current permission model of Android

TISSA

- Permission Category: Anonymized

  ‘Anonymized’ gives anonymized version of original data

TISSA

- Permission Category: Bogus

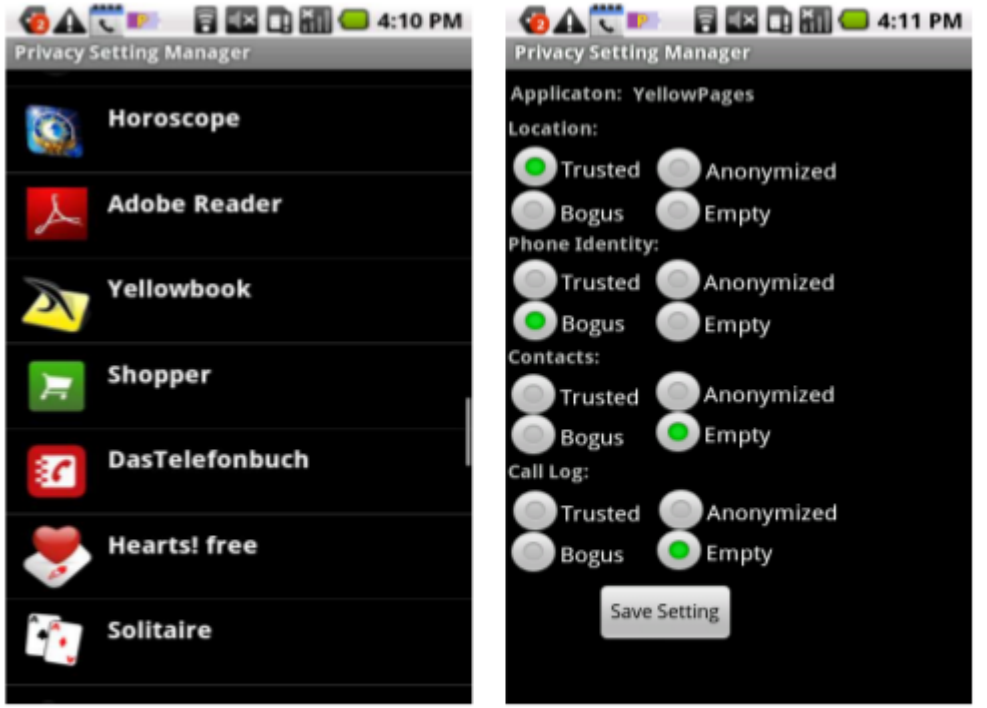
  'Bogus' provides fake result to the requested app

TISSA

- Permission Category: Empty

  ‘Empty’ gives empty results to the requested app

TISSA



(a) A list of installed apps

(b) The privacy settings for the *YellowPages* app

Figure: Paper Toss

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TISSA

- Behavior of the app will change accordingly
- No runtime control

Mockdroid [2]

- Mockdroid provides user a real runtime control
- It works very similar to TISSA in mocking the permissions
- E.g.: Empty data, random device id, etc.

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Paper Toss

- ‘Paper Toss’ should not require internet Permission
- User can mock the internet permission
- User can give legitimate internet permission at runtime

Paper Toss

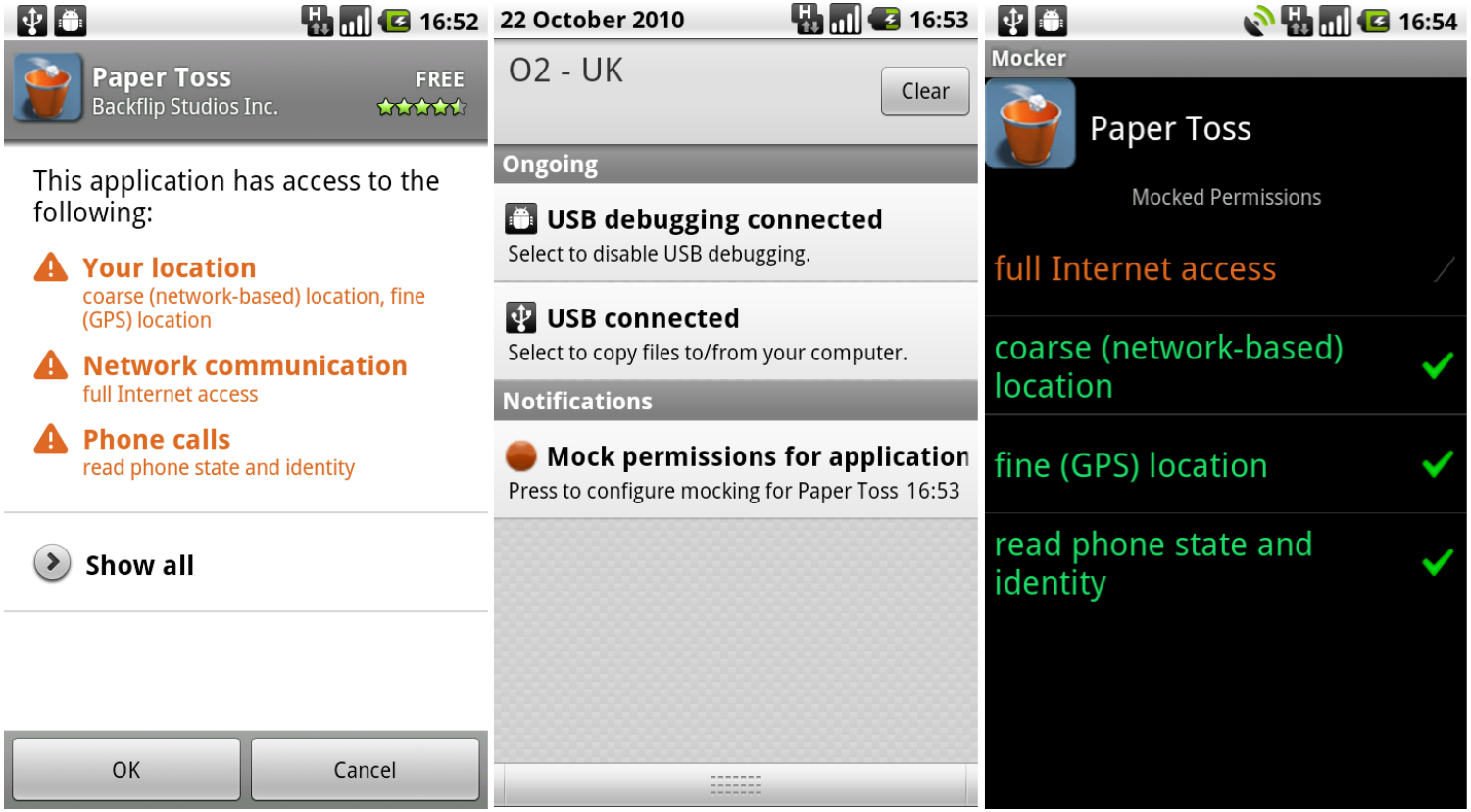

Figure: Paper Toss

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Conclusion

- We compare the existing ideas of permission model
- We will implement and integrate TISSA and Mockdroid

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References

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2. Alastair R. Beresford, Andrew Rice, Nicholas Skehin, and Ripduman Sohan. Mockdroid: trading privacy for application functionality on smartphones. In Proceedings of the 12th Workshop on Mobile Computing Systems and Applications, HotMobile '11, pages 49–54, New York, NY, USA, 2011. ACM.