

# Smart Cards

## Project presentation

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March 1st, 2019

# Our application for reading

The screenshot shows a software application window with a light gray background and a standard Windows-style title bar. The window contains several input fields and buttons. On the left, there is a label 'COM:' followed by a text box containing the number '2'. To the right of this is the text 'ISO14443A-4 no Calypso'. Below these, there is a block of text: 'La belle histoire (Language: fr)', 'http://www.apple.com', and 'POLYTECH'. In the center, there is a button labeled 'Read on Card' which is highlighted with a blue rectangular border. To the right of this button, there is a section titled 'Choose your record type' which includes a dropdown menu with a downward arrow. Below the dropdown are two text boxes: the first is labeled 'Prefix here' and the second is labeled 'Content here'. Below these two boxes is an 'Add' button. On the far right of the window, there is a button labeled 'Write on Card'.

COM: 2 ISO14443A-4 no Calypso

La belle histoire (Language: fr)  
http://www.apple.com  
POLYTECH

Read on Card

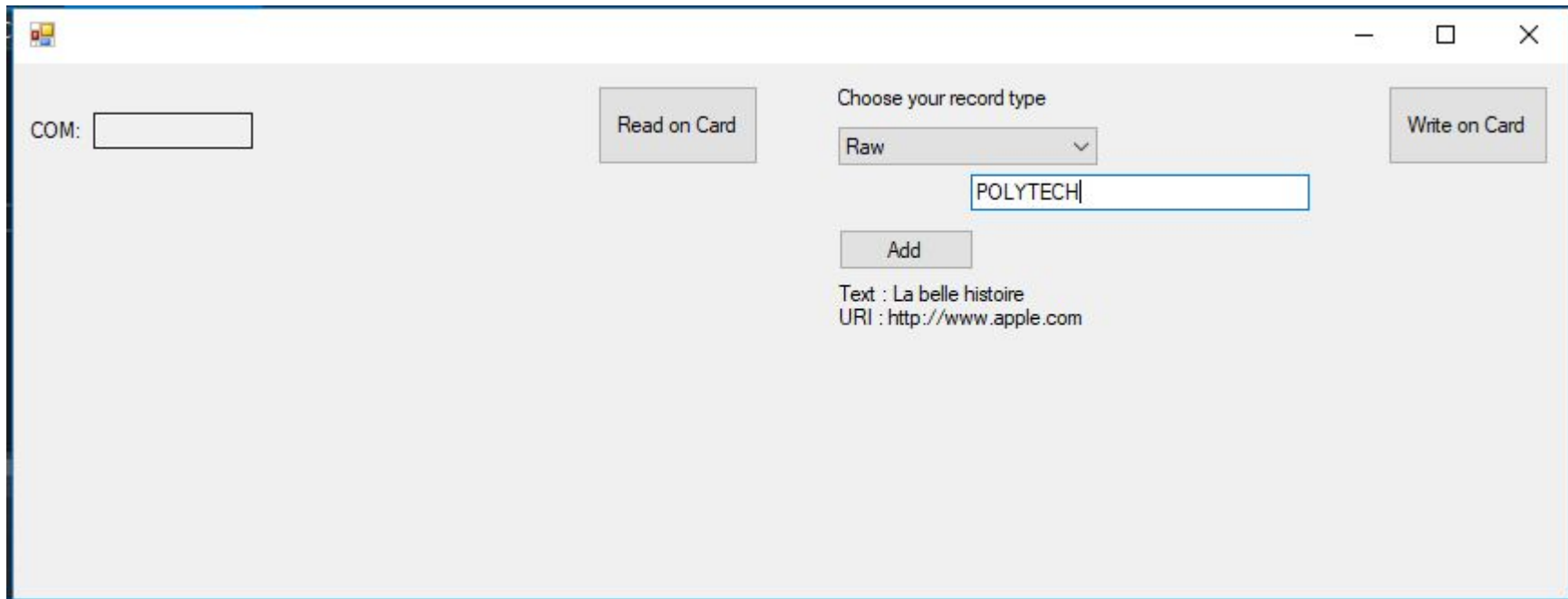
Choose your record type

Prefix here Content here

Add

Write on Card

# Our application for writing



The screenshot shows a web application interface with a light gray background. At the top left, there is a small icon of a computer monitor. To its right, there are three window control buttons: a minus sign, a square, and an 'X'. Below the icon, the text 'COM:' is followed by an empty text input field. To the right of this field is a button labeled 'Read on Card'. Further right, the text 'Choose your record type' is above a dropdown menu currently showing 'Raw'. Below the dropdown is another text input field containing the text 'POLYTECH|'. To the right of this field is a button labeled 'Write on Card'. Below the 'POLYTECH|' field is a button labeled 'Add'. At the bottom of the form, the text 'Text : La belle histoire' and 'URI : <http://www.apple.com>' are displayed.

COM:

Choose your record type

Raw

Text : La belle histoire  
URI : <http://www.apple.com>

Reading and writing on the card



# Encountered problems and solutions

## **Writing :**

Misunderstanding the meaning of the Lc value

## **Reading :**

Dealing with Smart Posters

→ Using an index to separate records

# Encountered problems and solutions

- **Standard understanding**
  - One of the first standards we had to implement
  - Documentation not really clear sometimes
- **Problems of conversion of bytes**

# Remaining problems

## Error handling

Simple error handling, must be some cases not covered

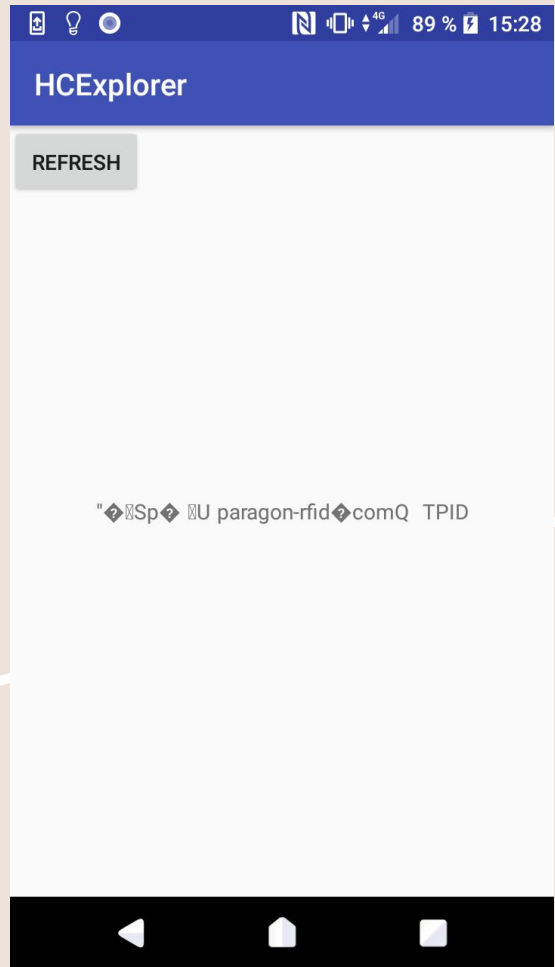
## Clean up

Need some clean up of the code in some parts

# Android application







# Encountered problems and solutions

- Java is **not** a good solution
- Bytes in Java are signed and their value is comprised in the interval  $[-128, 127]$ 
  - need to apply conversions
- Problems when storing data in the CC and NDEF files

# Demonstration and conclusion

