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The Point Symbology in Augmented Reality on Mobile Devices

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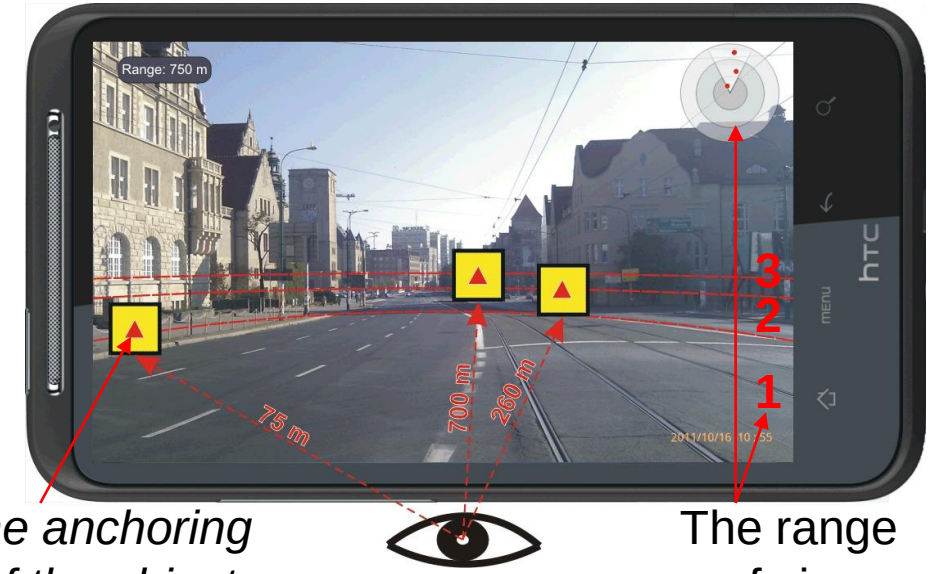
The aim of the paper

- to present the relationship between Point Symbol in parallel perspective and central perspective viewed on a smartphone and on a map
- to develop a nominal point symbol on a smartphone’s display
- to propose a so-called smart-symbol for mobile devices

Methodology

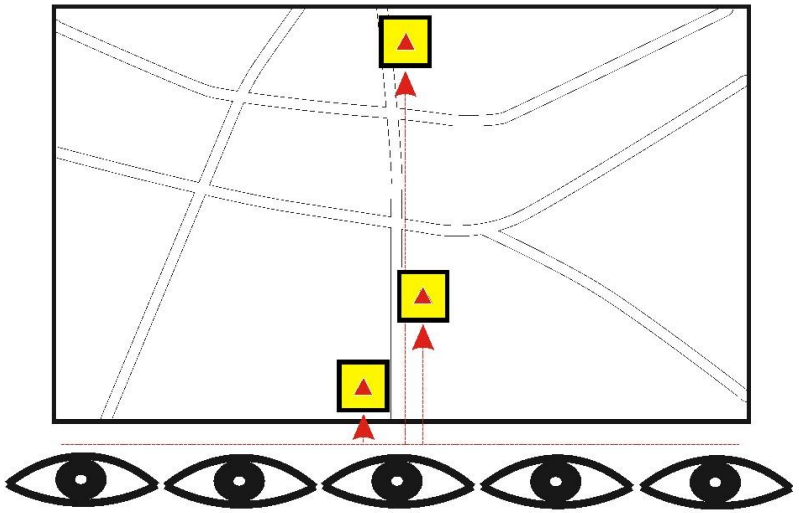
- to specify parallel perspective (symbols on a map) and central perspective (symbols in Augmented Reality)
- to design four forms of library symbols for smartphones
- to use specific visual variables in selected forms of symbols

Central vs Parallel perspective



The anchoring of the object

The range of view

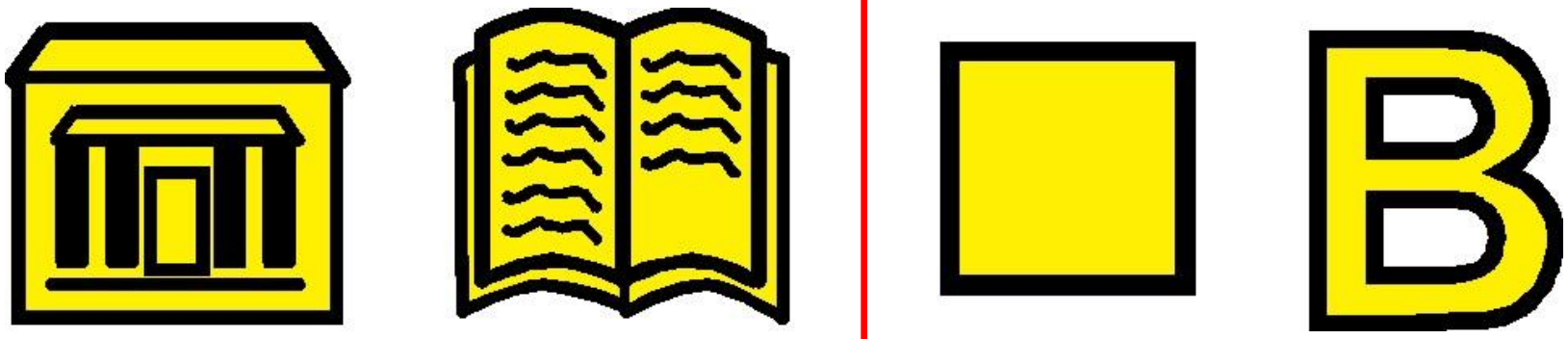


In Augmented Reality

On a map

Forms of point symbols for a library

Pictorial Iconic | **Symbolic** | **Geometric** | **Letter**



high ——— *low*

iconicity

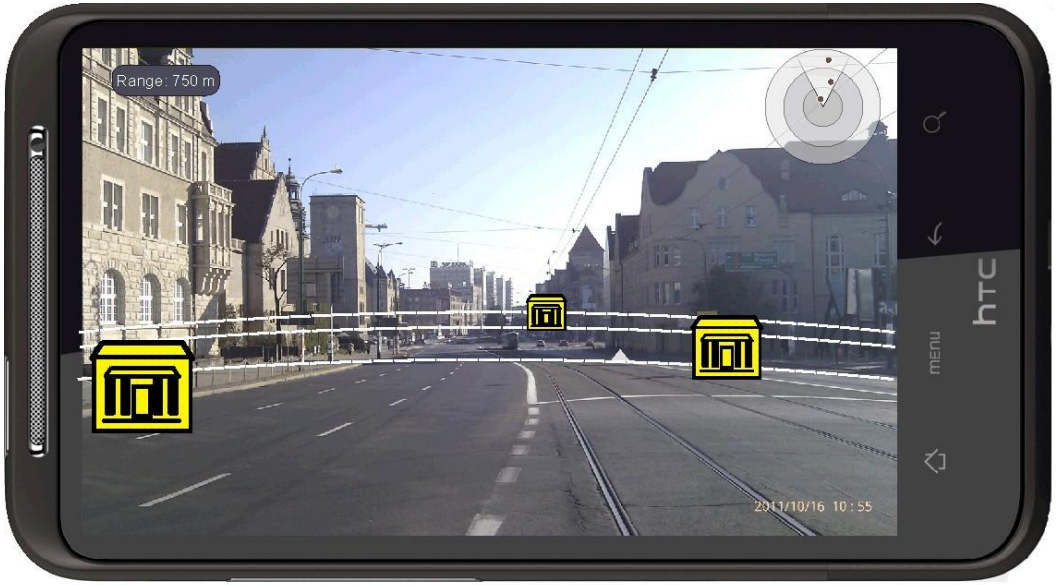
The forms of point symbols selected for further research

Library = Biblioteka in Polish

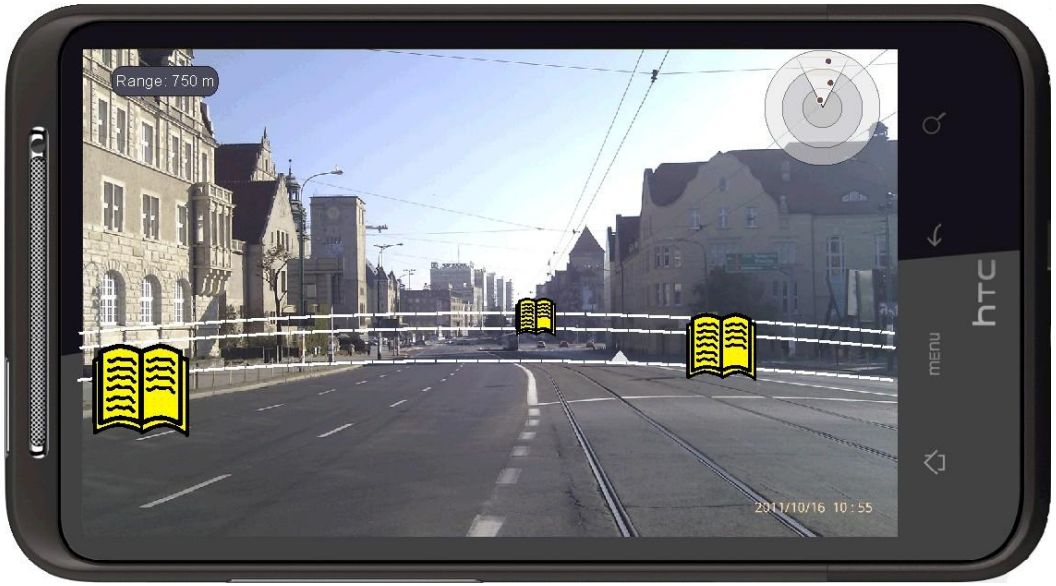
Based on Hacke et al. 2002

Visual variable: size

- In **Augmented Reality** the magnitude of a symbol could show the change in distance between the object in question and the observer



- On **a map** it presents the quantitative diversity between objects, it indicates the magnitude of a given phenomenon.



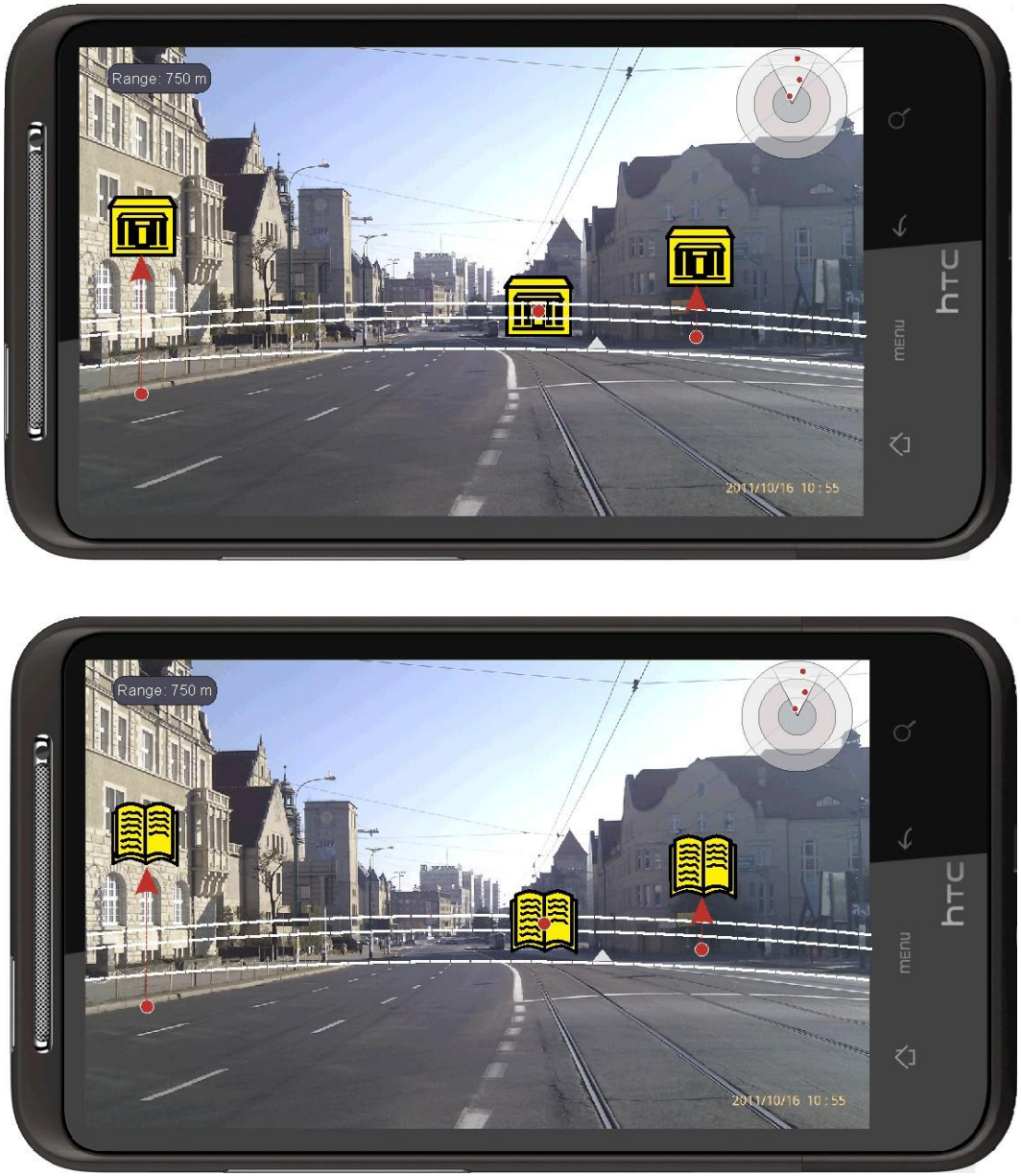
Visual variable: transparency

- This variable has been applied in test signatures in order to show the distance of the observer from the object. On the basis of the figure shown we may state that this variable should be used with great care. Signatures of considerable transparency may be illegible due to insufficient visual contrast

Visual variable: location

- In Augmented Reality we are dealing with a central perspective in the horizontal view. This leads to the vertical location of the symbols being shifted in relation to the actual location of the object.

  The closer the object to the observer, the greater the shift



Smart-symbol

A smart-symbol is interpreted in the present deliberations as a signature, the shape of which is modelled in real time, and depends on movements performed by the user of the AR system in accordance with the parallel perspective view.

How the Smart-symbol behaves

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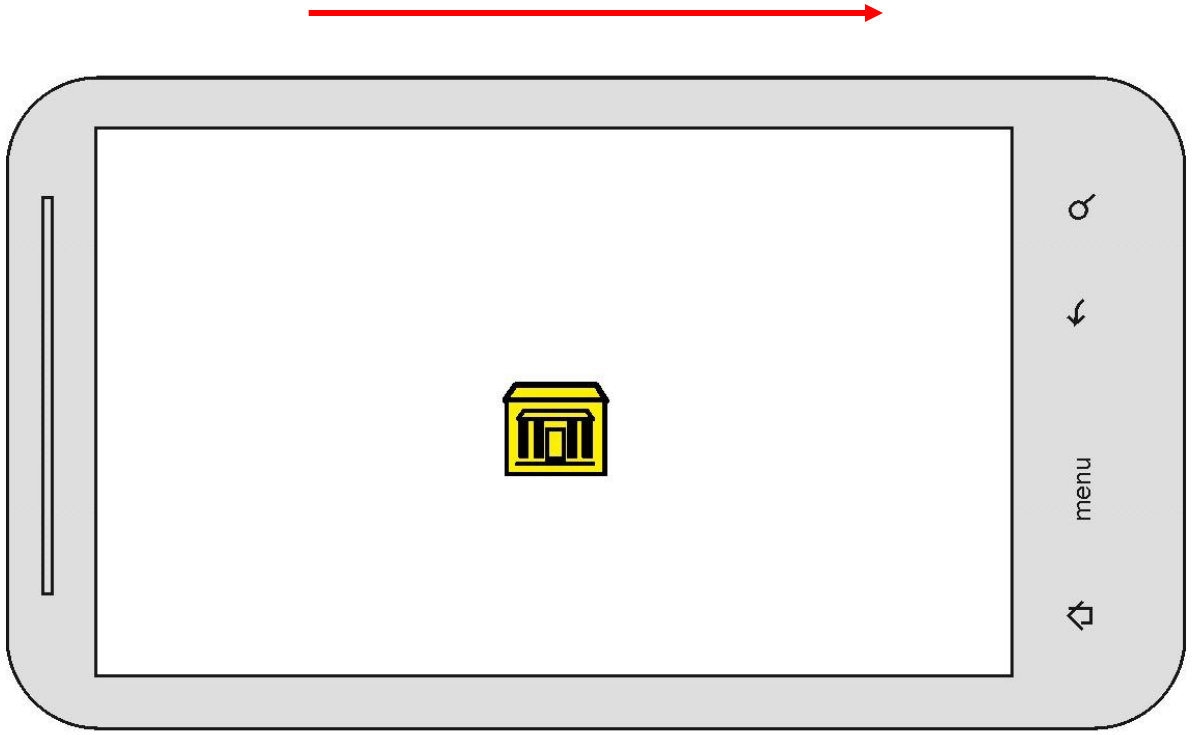
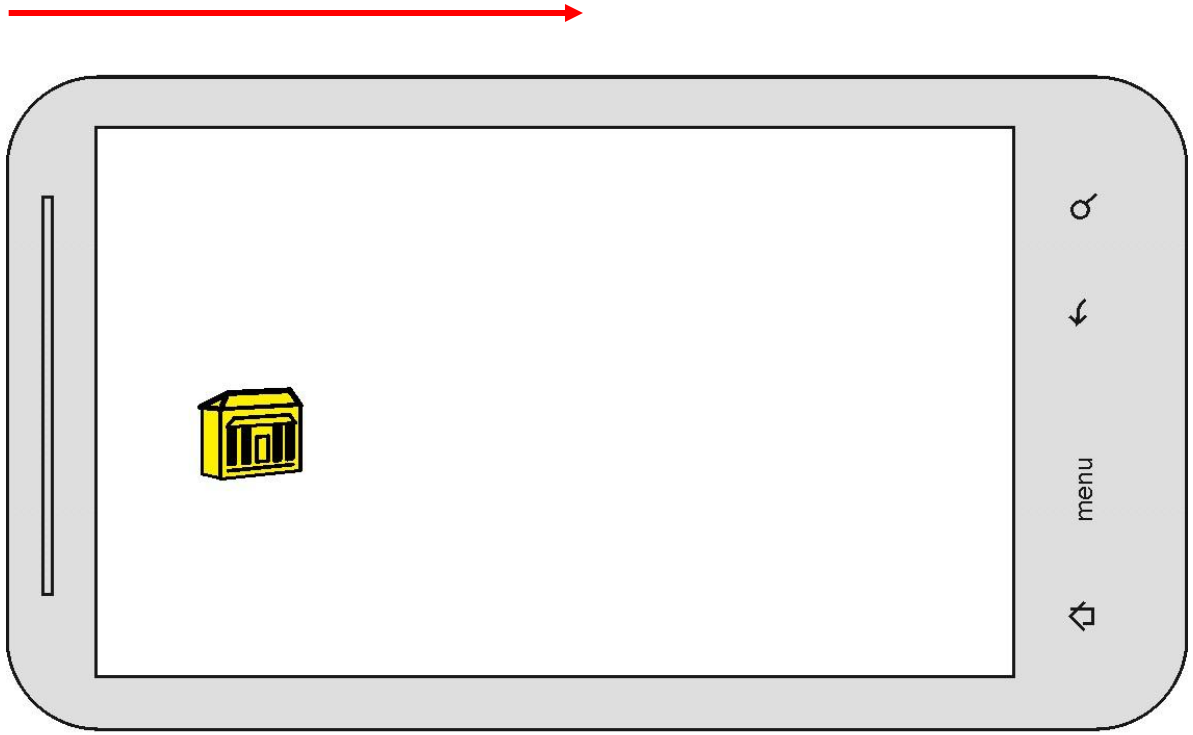
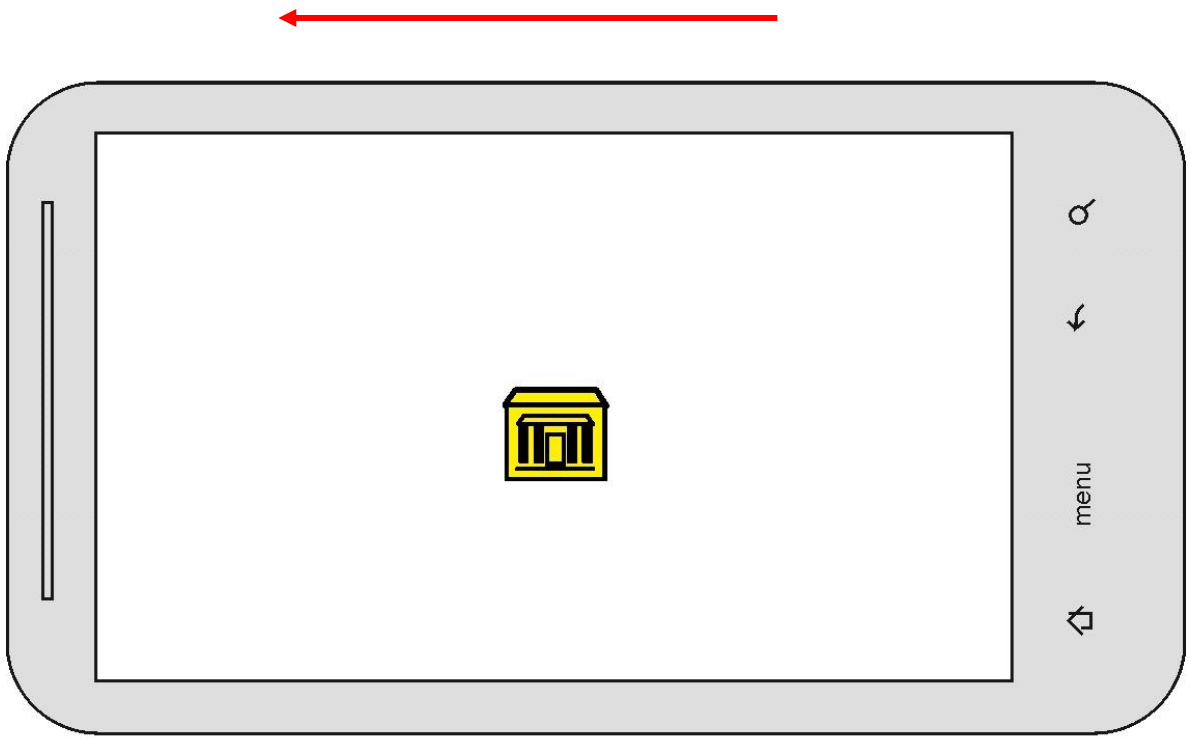


How the Smart-symbol behaves



How the Smart-symbol behaves



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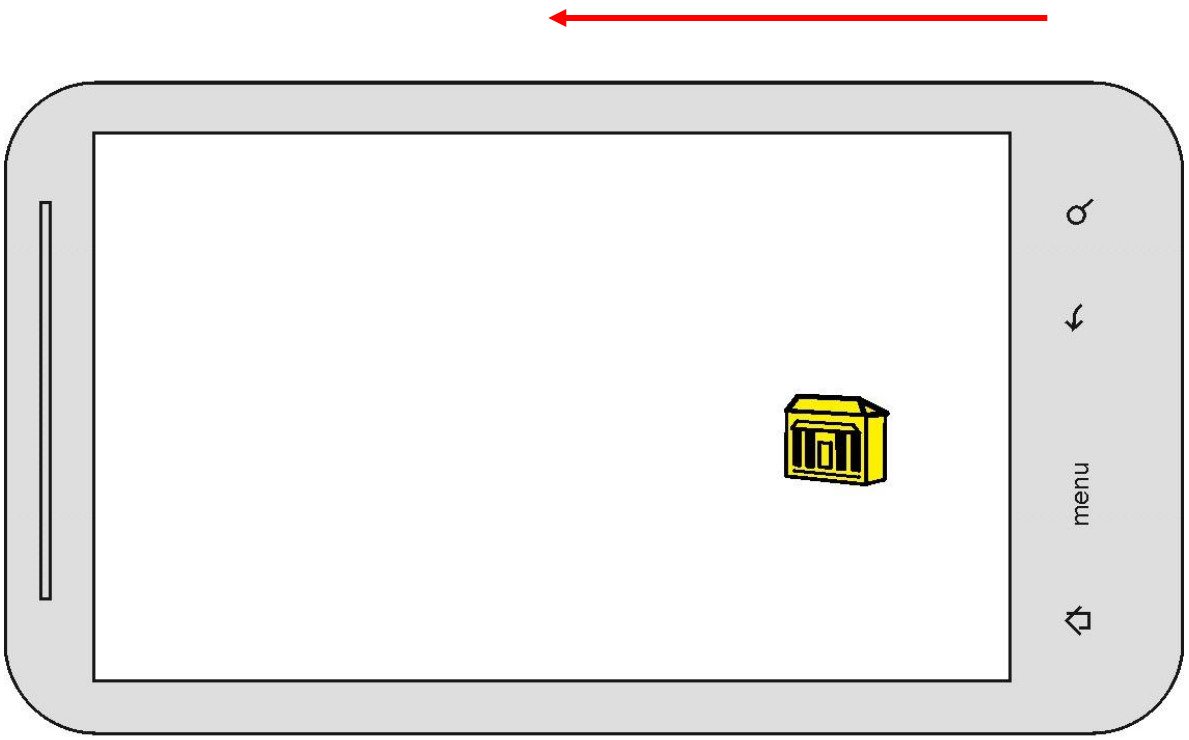

Thank you for your attention.