WayMaker v.2 Construction Kit Interactions

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Abstract

This paper describes interactions with WayMaker v.2 (1998), implemented by in Java for Macintosh. WayMaker v.2 is installed at Boston's Museum of Science as a Test Tube trial relating to the NSF-funded Making Models exhibits and programs (projected to open ca.2003).

WayMaker players diagram a city, real or imagined, by forming a map from geographic primitives such as districts, paths, and landmarks. The software then transforms scale, view, and representation to illustrate a stroll through the mapped environment. The dynamic illustration takes the form of a frame-by-frame animation that preserves topological relationships among the primitive structures.

Further information about WayMaker can be found in:

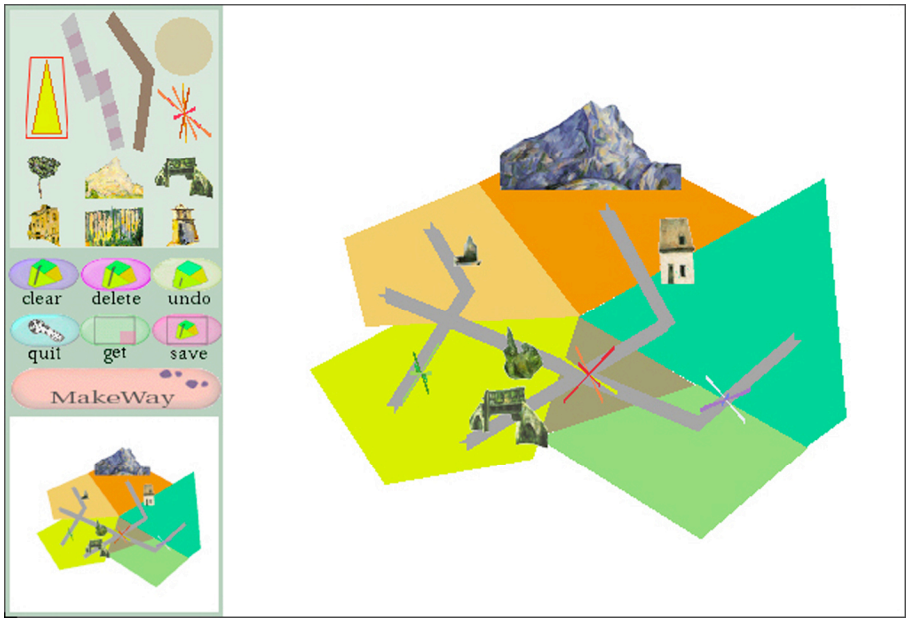
MERL Technical Report 2000-04 (Cognitive zoom);
MERL Technical Report 99-07 (Toward a developmental image of the city);
MERL Working Paper 99-02 (What would Cézanne think?);
MERL Technical Report 99-01 (Constructing representations of mental maps);
MERL Working Paper 99-01 (Protocols for WayMaker v.1 prototype usage trials);
MERL Technical Report 98-12 (Mapping psychological and virtual spaces);
MERL Technical Report 97-07a (Make Way for WayMaker); and
MERL Working Paper 97-01 (A prototype design tool for participants in graphical multiuser environments).

WayMaker Construction Kit Software

Museum visitors create maps of cities that may be real or imagined.

The visitor arranges representations of structural elements to create a spatial layout.

The element symbols include a triangle for landmarks, lines for paths and edges, a circle for districts, and a starburst for nodes.

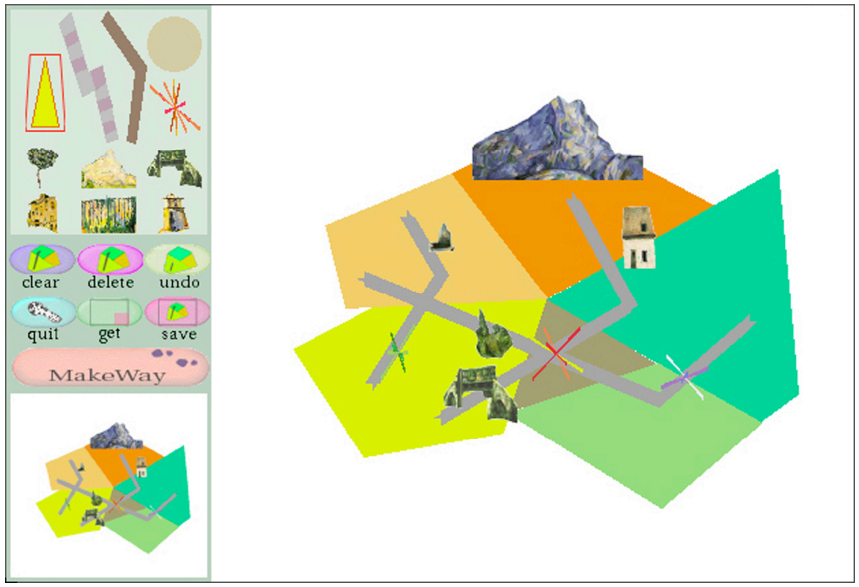


Specifications add interest: a landmark can take the form of a house or tree, an edge can take the form of a mountain, and so on.

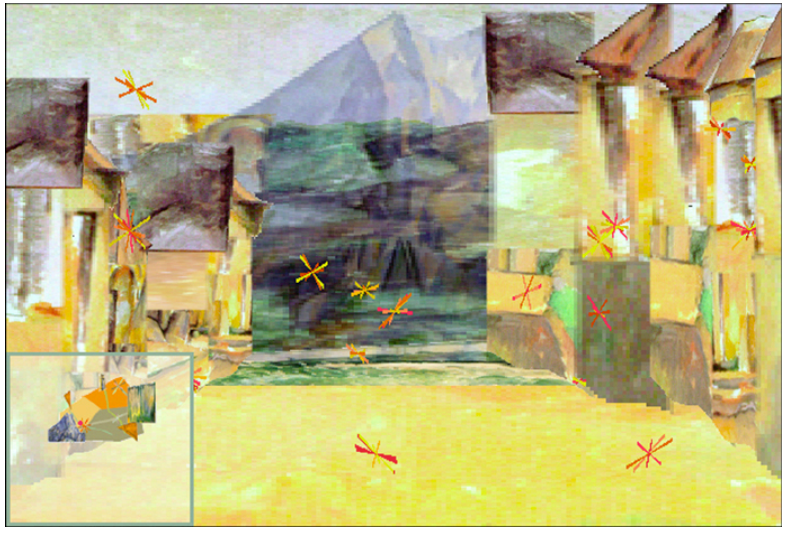
At lower left, a miniature copy of the map echoes the construction.

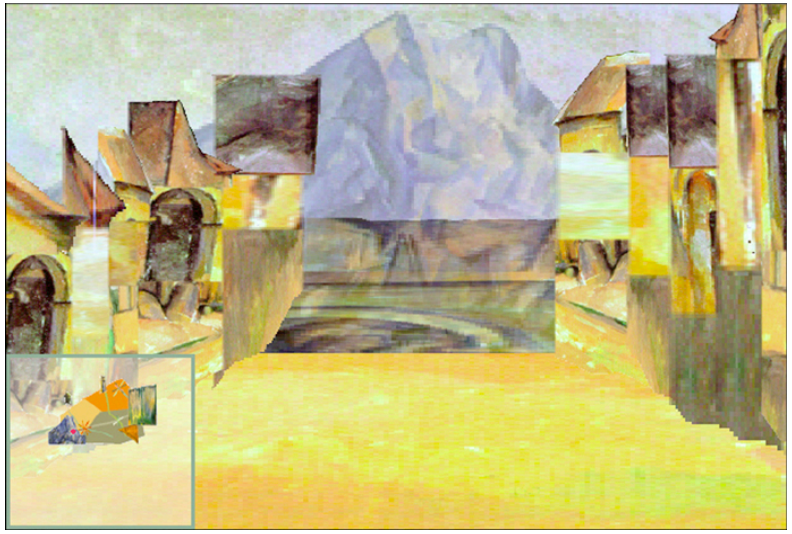
When the user clicks the miniature map…

…the software transforms scale, view, and representation to generate whimsical illustrations of a stroll through the mapped space.

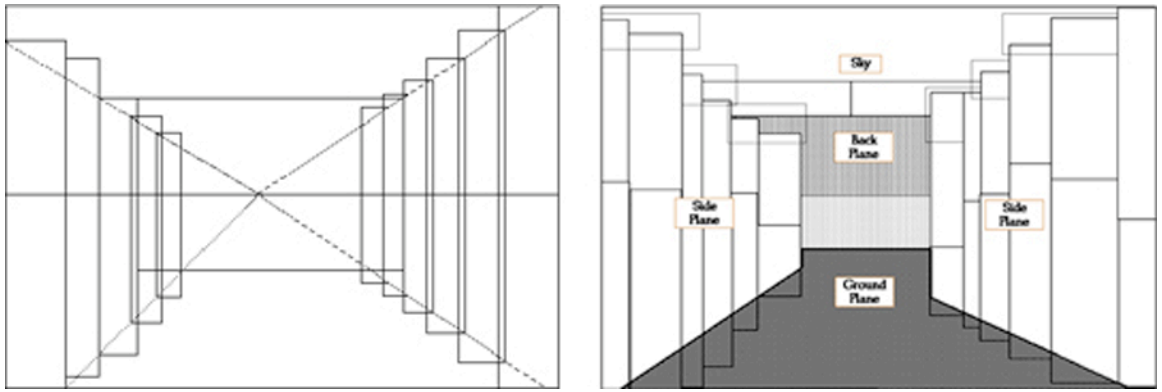


The stroll takes the form of a frame-by-frame, dynamic illustration
which maintains spatial relationships among the structural elements.

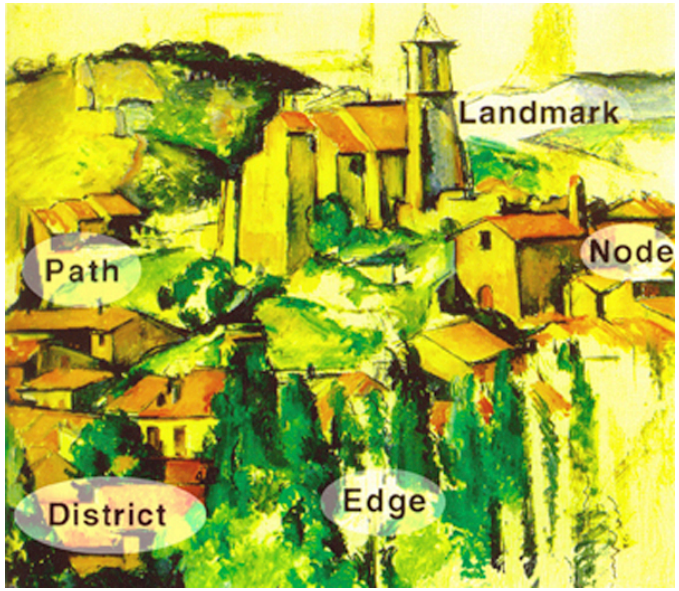




The red dot on the miniature map indicates
the viewer's location within the mapped space.

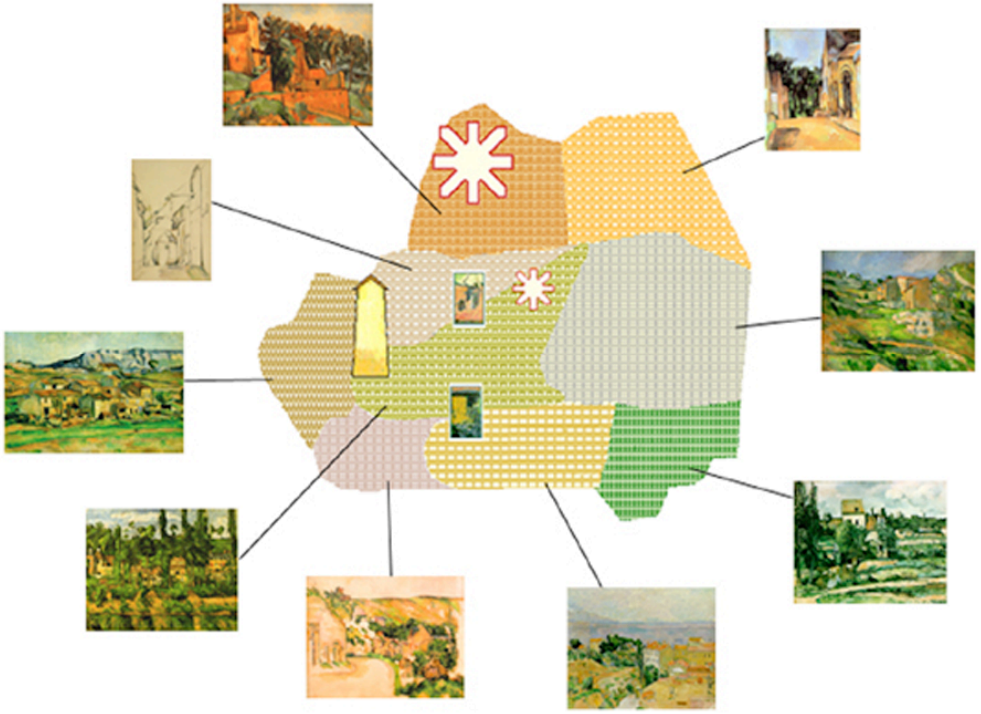


Scenes are assembled automatically,
according to a classic perspectivist framework.



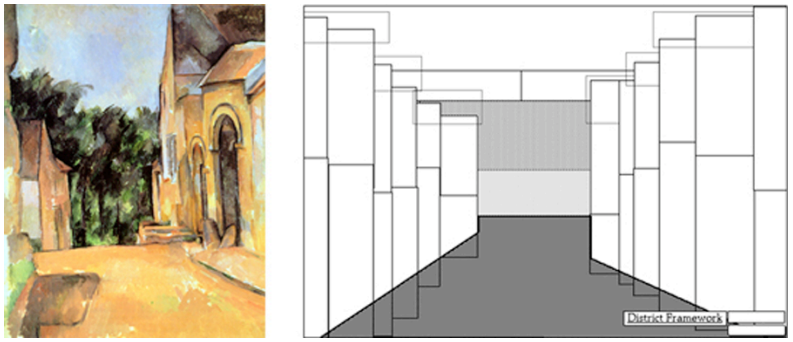
Painting reproduction from Machotka, P. (1996). Cézanne: Landscape into Art. New Haven: Yale University Press. Gardanne (l'après-midi), 1885-86.

Cézanne paintings are the basis of imagery for the composited scenes.



Painting reproductions are from Machotka, P. (1996). Cézanne: Landscape into Art. New Haven: Yale University Press. Clockwise, from top right: Ferme à Montgeroult, 1898; Maisons en Provence – le vallon de Riaux près de l'Estaque, 1882-83; Le Moulin sur la Couleuvre à Pontoise, 1881; Vue sur l'Estaque, 1882-85; Route tournante à la Roche-Guyon, 1885; Le Château de Médan, 1879-80; Haneau à Payennet près Gardanne (formerly La Sainte-Victoire, Environs de Gardanne), 1885-86; L'Eglise Saint-Pierre à Avon (formerly Une rue à Aix), 1891-92; La Maison de Bellevue, c. 1890.

Each district is associated with a particular painting.



Painting analyzes and segmentations yield an imagebase supporting automatic composition of street-level views.

Although these techniques produce intriguing results, in future versions of WayMaker, we hope to use imagery provided by the users themselves.