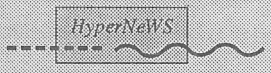
HyperNeWS

User Interface
Development System



1 Introducing HyperNeWS

HyperNeWS is a tool developed by the Turing Institute to simplify the increasingly complex task of building user interfaces. Created in 1988 for in-house use, it has matured into a system used on commercial projects. Its features include:

- The ability to build user interfaces quickly using direct manipulation.
- A programming model based on stacks, cards, and objects.
- A predefined set of system objects that can be used as-is, or modified to suit requirements.
- Implementation in NeWS using the power of the PostScript graphics model.
- The ability to communicate with client programs written in C, Prolog, and Lisp.

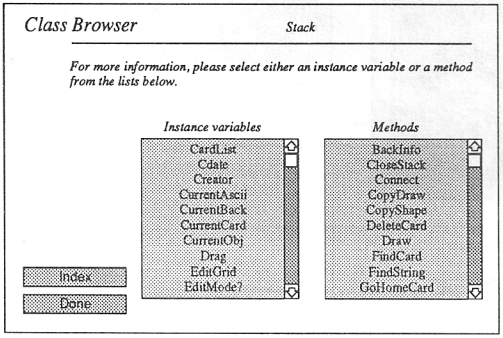


Figure 1: A sample HyperNeWS stack

2 Interactive Interface Building

When developing software with today's windowing environments, a majority of software development time can go into creating the user interface. This is the case with many existing user interface toolkits where the interface is written as a program specification that requires a low-level understanding of the windowing system. HyperNeWS takes a different approach called *direct manipulation*, in which the designer does much of the interface development by drawing, dragging, and sizing objects with the mouse and keyboard.

3 The Hypermedia Stack Model

HyperNeWS is designed using the hypermedia stack model, in which a program can be represented as one or more stacks, and each stack consists of varying numbers of cards, backgrounds, and card objects. This model is easy to comprehend for users and developers alike. HyperNeWS stacks are saved in an ASCII format, providing object persistence and stack portability. All objects in the HyperNeWS environment communicate via message passing, promoting modular separation of functions.

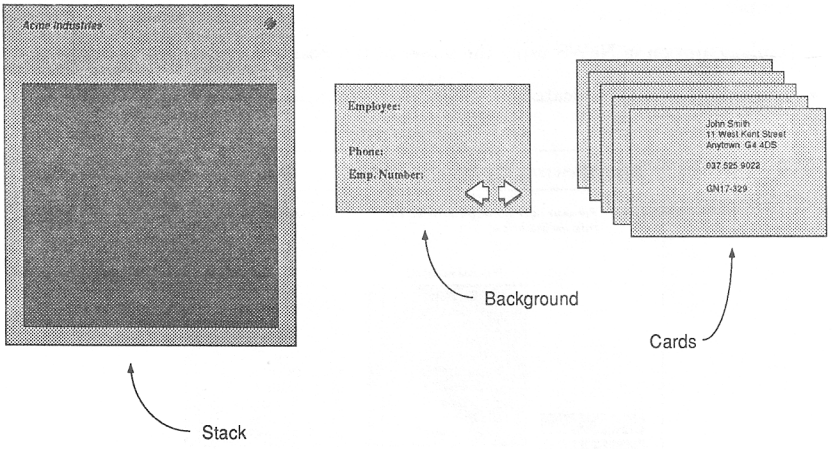


Figure 2: The hypermedia stack model

4 High-Level Language Support

The HyperNeWS system provides an abstract interface to high-level languages so that programs written in C, Prolog, and Lisp can communicate with a HyperNeWS front end. These interfaces use the same message passing mechanism that HyperNeWS objects use between themselves.

5 System Object Types

A base set of system objects allows the user to build an interface using these default objects instead of building them from scratch. Buttons, text fields, and scroll bars each have a standard appearance and an intuitive behaviour by default, though they can be modified by the developer. A canvas object with little default behaviour is also provided for existing software that requires direct access to the screen.

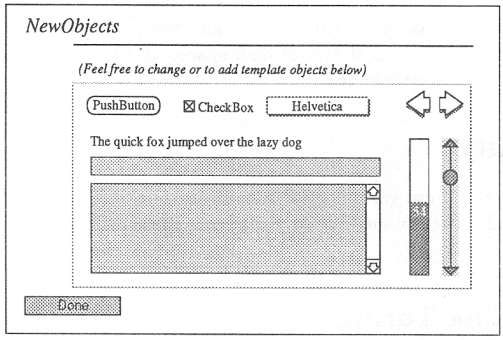


Figure 3: Default system objects

6 HyperDraw

The HyperDraw graphics tool is used for all graphics support within HyperNeWS. Since drawings consist of PostScript objects, parts of a drawing can be manipulated individually. HyperDraw can import Encapsulated PostScript (EPSF) files, allowing work done under other graphics packages to be used within HyperNeWS.

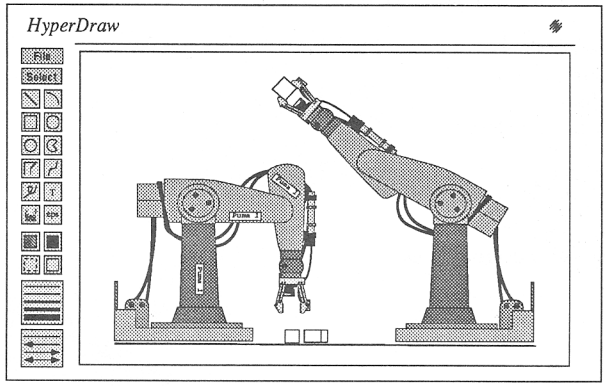


Figure 4: HyperDraw graphics tool

7 Support Tools

Included in the HyperNeWS environment are such useful tools as: a terminal emulator, a CPU performance monitor, a HyperDraw-to-PostScript translator, and a dvi-to-PostScript translator.

8 System Requirements

HyperNeWS requires OpenWindows1.0 or above and SunOS4.0 or above. It requires a Sun-3 or newer workstation, and about 6 MB of disk space. A color or greyscale monitor and at least 8 MB of RAM are recommended.

9 Availability

HyperNeWS is available from various FTP sites in Europe and the United States. It can also be retrieved via mail server in the United Kingdom. Please contact The Turing Institute for further details.

10 About The Turing Institute

The Turing Institute is a not-for-profit company engaged in research and development in Artificial Intelligence and related disciplines. It was established in 1983 and named in honour of the late British mathematician, Alan M. Turing.

11 The Fine Print

The General Manager
The Turing Institute
George House
36 North Hanover Street
Glasgow G1 2AD
United Kingdom
Tel: (041) 552-6400
Fax: (041) 552-2985
Email: newsdev@turing.ac.uk

Turing

The Turing Institute
George House
36 North Hanover Street
Glasgow G1 2AD
United Kingdom
Tel: (041) 552-6400
Fax: (041) 552-2985
E-mail: newsdev@turing.ac.uk