

Menus of computer-based systems

// Pull-down menu

The pull-down menu is a widget of Graphical User Interfaces and is located at the upper edge of the user interface. Due to prevalent lack of space the menu items are nested in further submenus like a hierarchic structure. A symbolic hint in the form of an arrow frequently points to further pull-down menus within the pull-down menu.

The specialty of this menu is the absence of a root node. Only the menu bar in the following level contains orders and groups of orders showing another submenu by choosing. Starting from the menu bar a strict path to the current submenu is constantly shown. In opposite to popup menus which have to be closed, pull-down menus do automatically after choosing. Besides commands this type of menu can also contain check boxes and radio buttons.

// Popup menu

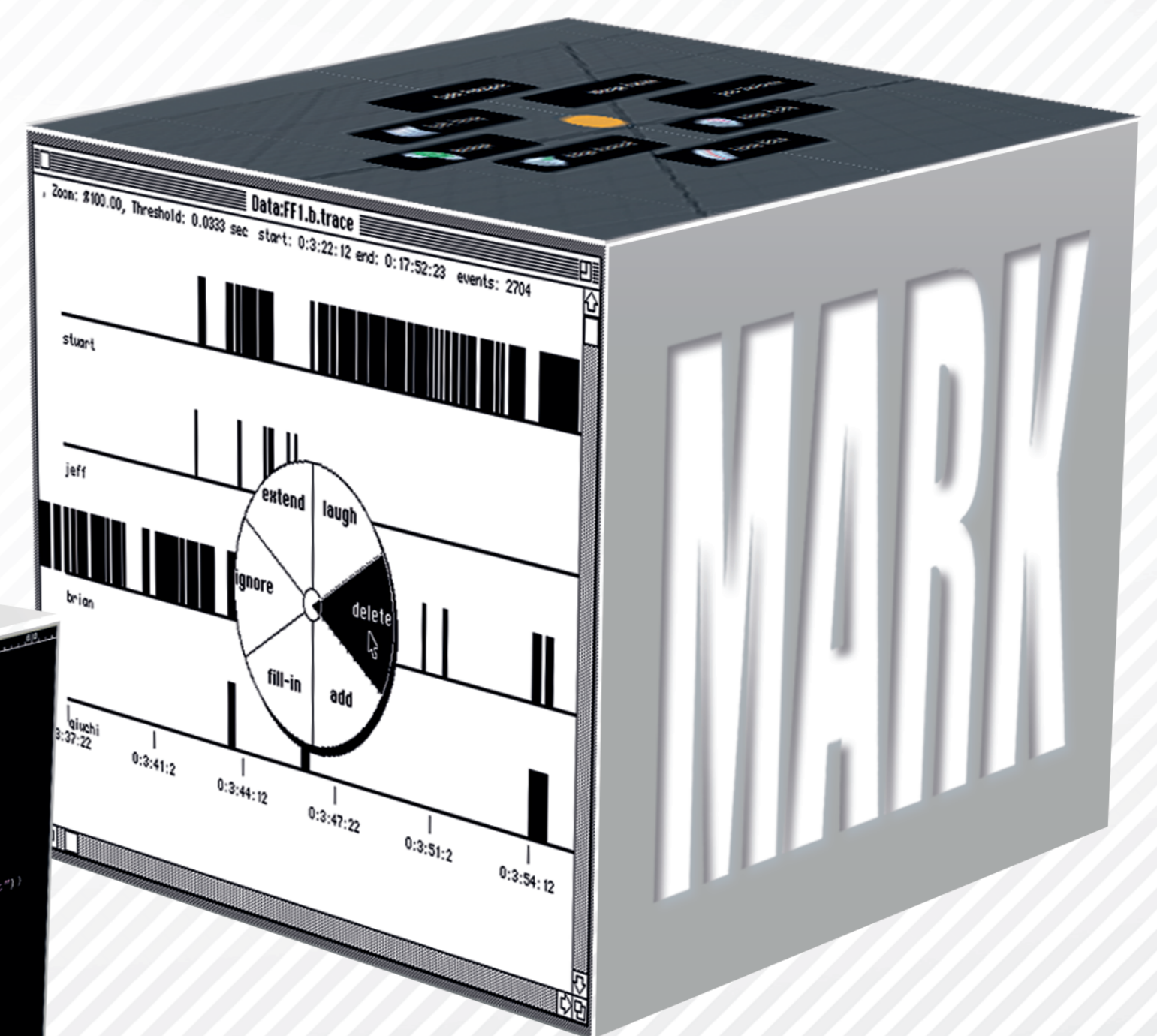
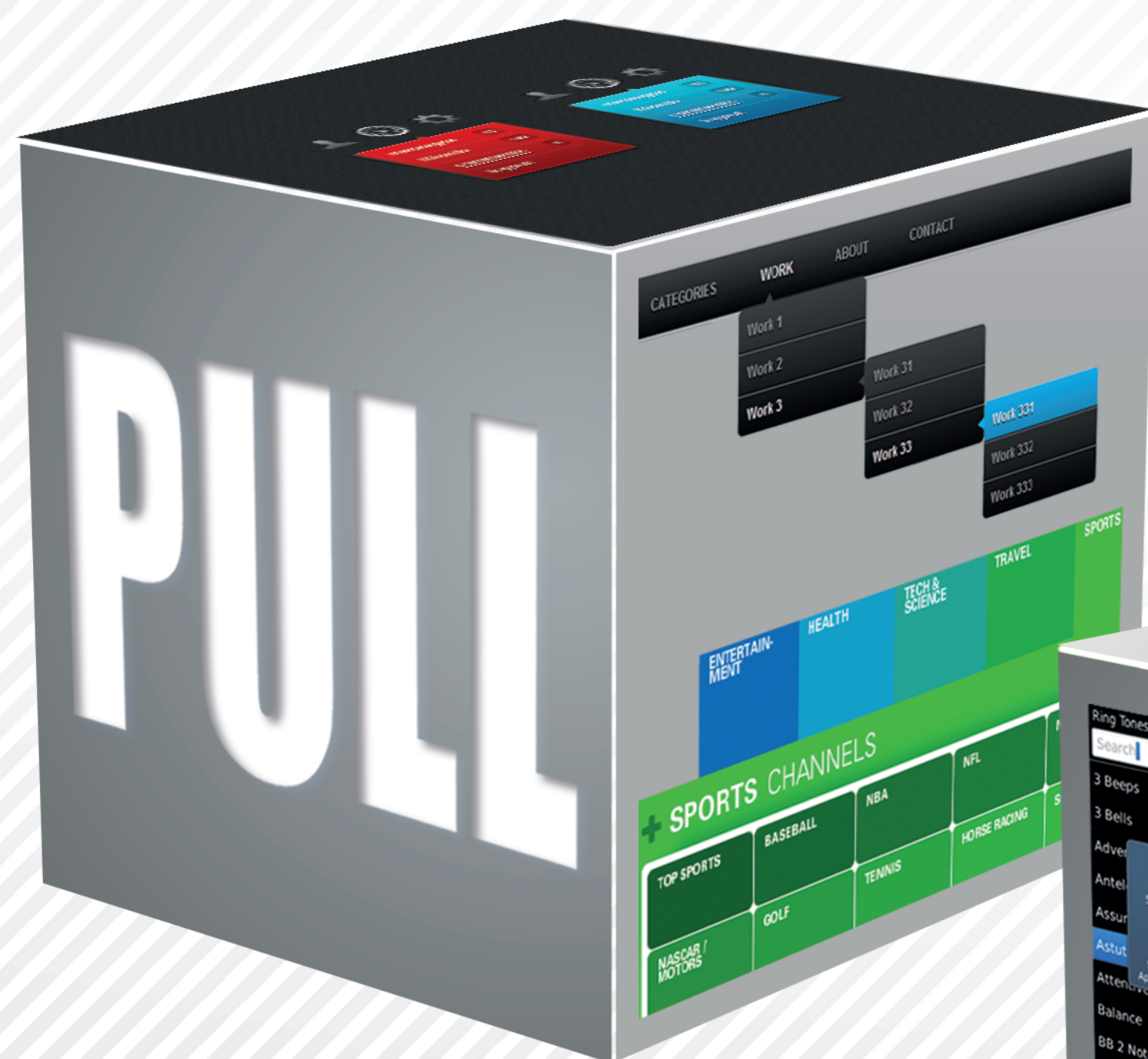
In contrast to pull-down menus, popup menus only work when there is an additional local menu. The majority of popup menus are activated by right mouse click. Significant for popup menus is the appearance of the menu at the location where the mouse has been clicked. Choosing of commands is very effective at this type of menu since mouse cursor and menu are right next to each other. There is no need for the user to leave a certain segment of the screen and therefore the menu item can be captured in its entirety and choose accordingly.

Within the popup menus there are *implicit* and *explicit* popup menus. Explicit popup menus refer to operator control actions of the elected object. Implicit popup menus refer to object-independent operator control actions. Commands within the popup menu always combine a part of commands in pull-down menus. For inexperienced users popup menus are pretty challenging due to their invisible form of expression at original state. Both the position of the menus and the corresponding operator control actions don't become accessible to users immediately.

// Marking menu

A marking menu is a possible option to list format order of menu items. A determining advantage of this menu form is that there are short paths between the single options. Since the mouse cursor is located in the middle of the menus after opening, the distance to the single items is exactly the same. Furthermore the menu items are replenished in form of texts appearing in a box above the item. While the user goes to the requested direction the menu item can be chosen by just dropping the mouse cursor.

This type of menu is common for presentation of modeling tools. Implementation of the considered submenu is effected by representation of the new marking menu next to the chosen menu item. Lack of space is a disadvantage whereby less menu items can be set. This type of menu is just advisable for a lower amount of menu items as well as the representation of icons within the menu.



// Advices for structuring of menus

- Short and concise menu items
- Combination of noun and verb in German-speaking world
- Combination of verb and noun in English-speaking world
- Use of flat and wide regulations is more effective than use of narrow and deep regulations
- Marking of clear content relationship
- Menu depth between 2 and 3 levels
- Submenus contain 3 to 10 items at most
- Separators simplify dealing with complex menu structures
- Fold out menus also simplify dealing with complex menu structures
- Testing phases with users
- Usage of card-sorting method for description of information architecture

// Recommendations for simple and efficient usage of menus

- Efficient in use, comprehensible and learnable menu structure
- Consideration of prevalent conventions (common shortcut keys, positioning of menu parts)
- Menu item = combination of 2 elements at most
- Usage of shortcut keys, modifications and split menu recommendable
- Definition of own shortcut keys
- Dynamic adjustment of menu items by frequency of usage¹