Worldwide Developers Conference

Making the Move to Rhapsody

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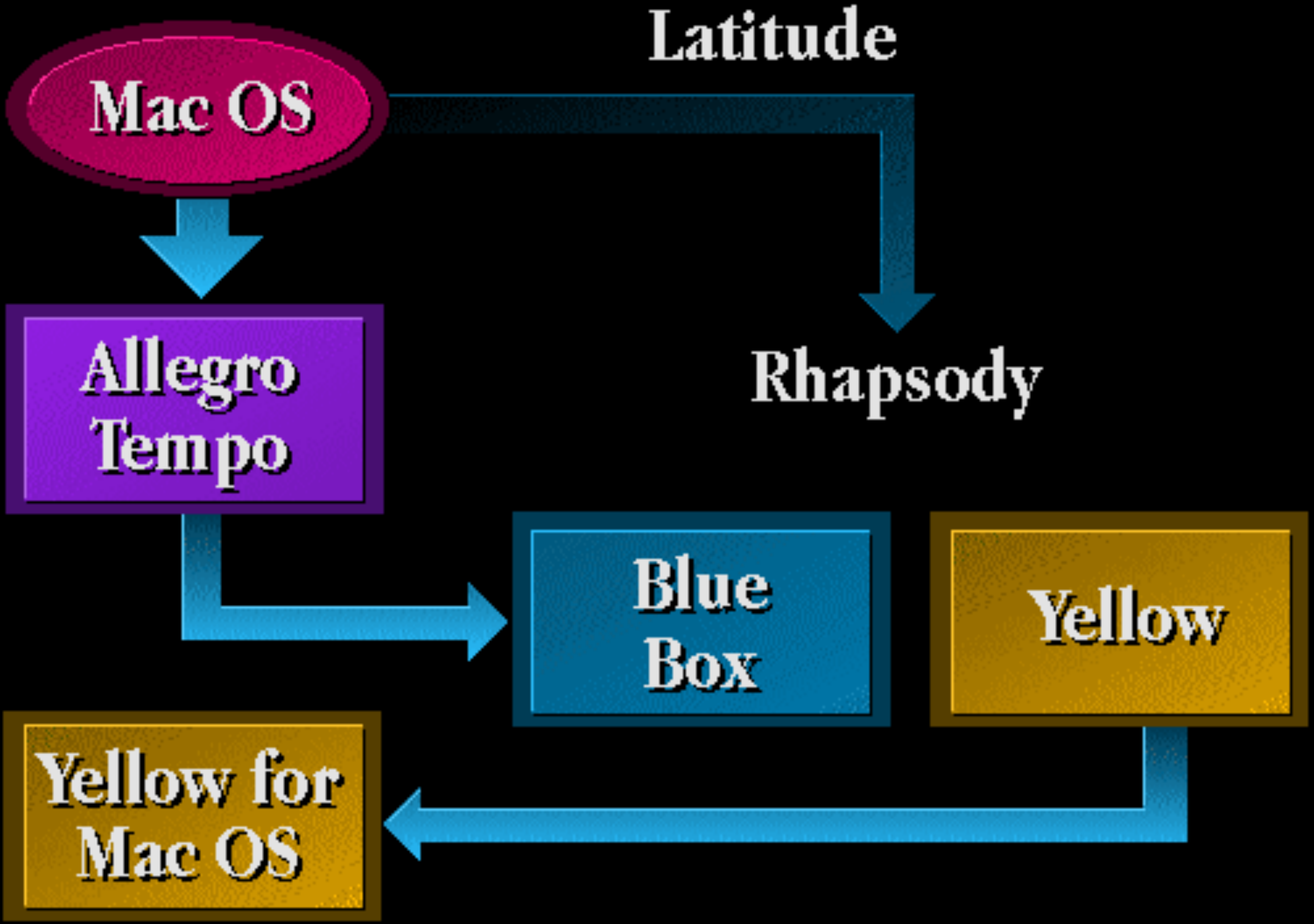

Very Simple Text: MRD

- The Market Requirements Document for the Very Simple Text application indicates it must:
  - Break the 32K text limit
  - Provide advanced typography support
    - Kerning, ligatures, variable baselines, drag and drop color
    - Graphic rulers; left, right, center and decimal tabs
    - Cut and paste font and paragraph attributes

Very Simple Text: Nice-to-Haves

- If possible, the application should also:
  - Support multi-platform drag and drop graphics
  - Support spell checking, using a shared, system-wide dictionary; support custom system and user dictionaries
  - Provide integration with other applications; text and graphics should be available for use by other applications, like mail

Getting Started

- Start up Project Builder
  - /NextDeveloper/Apps/Project Builder
- Create a new project, of the type Application
  - Save the project as “VerySimpleText”
- Click the Build button on the Project window: it brings up the Build panel
  - Click the Build panel’s Build button

First Test

- Click the Run button on the Project window: it brings up the Run panel
  - Click the Run panel's Run button
- We have a complete working Rhapsody application that does nothing, but does so gracefully

Building the Interface

- Locate the interface file, found under Interfaces in the Project window
  - Double-click NEXTSTEP_VerySimpleText.nib
- This launches Interface Builder
  - /NextDeveloper/Apps/Interface Builder
  - Interface Builder creates nib files: archives of initialized, connected objects that make up a user interface

The About Box

- Locate the Palette panel
  - Select the Windows palette
- Drag a panel object into the workspace
  - This will be our About Box
- To change an object in Interface Builder, you can use direct manipulation
  - Click the Interface Builder's resize control in the upper left corner of the panel's title bar
  - Resize the panel to an appropriate size and position

Setting up the About Box

- You can also use an Inspector to change an object in Interface Builder
  - From Interface Builder's Tools menu, choose Inspector…
- The Inspector panel lets you change the current selected object
  - In the Inspector's Attributes mode, change the Title attribute to "About Very Simple Text"

Adding Text to the About Box

- Now, let's add some text to the About Box
  - Select the Views palette in the Palette panel
  - Drag a text object — it says "Title" — from the Views palette into the panel
  - Resize it until you like its size and position
  - Double-click the text object and enter "Very Simple Text"
- Next, select the text object and copy it, then paste a copy back into the window
  - Change this text object to identify yourself as the author of the application

Adding an Image to the About Box

- Now, let's get an image to add to the about box
  - First, go to the file system by double-clicking the NeXT icon and locate an image
  - Drag an image from the file viewer into the Project window in Interface Builder

Adding an Image to the About Box

- Notice the integration between the file system, Interface Builder and Project Builder
  - Confirm that you want to add the image to the project
  - Double-click Interface Builder's icon to once again make it the current application

Adding an Image to the About Box

- Now, let's add the image to the About Box
  - Select the Data Views palette in the Palette panel
  - Drag an Image View into the panel
- Locate the Project window: it will be in its Images mode
  - Drag the image you just added onto the Image View in the panel

Changing the Menu Item Text

- Next, let's change the text of the Info menu's Info Panel… menu item
  - Click on the main menu's Info menu, which will reveal its submenu
  - Select the "Info Panel…" text and replace it with "About Very Simple Text…"

Connecting the Menu Item to the About Box

- Next, we'll connect a menu item to the About Box, so that when the user clicks the menu item, the About Box will be shown
  - Hold down the Control key and drag from the About Very Simple Text… menu item to the title bar of the About Box

Connecting the Menu to the About Box

- The Inspector changes to its Connections mode
  - Select makeKeyAndOrderFront: from the Actions that are listed
  - Click Connect in the Inspector to confirm that the menu should send the panel the makeKeyAndOrderFront: message

Testing the About Box

- Let's test what we've done so far
  - Close the panel
  - Choose Test Interface from Interface Builder's Document menu
  - Click the About Very Simple Text… menu item, found in the Info menu
  - When you are done testing, choose Quit from the main menu
- In Interface Builder, save your work by choosing Save from the Document menu

Building the Text Window

- Inspect the window
  - In its Size inspector, set minimum size to Current
- Go to Data Views palette
  - Add a Scroll View containing a Text View
  - Resize Scroll View to fill the window
- Inspect the Scroll View in Size mode
  - Set Scroll View containing the Text View to resize when the window resizes

Adding Graphic Support

- Inspect the Scroll View in Attributes mode
  - Set Graphics Allowed

Building the Main Menu

- Change the main menu's title
  - Select the main menu in Project window
  - In the Attributes inspector, change its title to "VerySimpleText"

Adding the Built-in Menus

- Set the Palette panel to the Menus palette
- Drag in the Document menu after Info
- Remove the Edit menu
  - Select it and press Delete
  - Drag in a new Edit menu after Document
- Drag in the Format menu after Edit

Adding Custom Menu Items

- Drag in a generic menu item after Windows
  - Change its title to "Print…"
  - Add "p" as key equivalent

Creating the Document Class

- Subclass NSObject
  - Set the Project window to its Classes mode
  - Select NSObject
  - Classes>Subclass
- Rename the subclass
  - Enter “Document” and hit Return

Creating the Document Object

- Add an outlet, to point to the Text View
  - Rename it to “text”
- Add an action, to be sent by the Open… menu item
  - Rename it to “open:”
- Add an action, to be sent by the Save menu item
  - Rename it to “save:”

Instantiating the Document Class

- Make an instance of Document class
  - Select the Document class
  - Classes>Instantiate
- The icon for the new Document object appears in the Project window

Connecting the Document Menu

- Connect the Open… menu item to Document's open: action
  - Control drag from the Open… menu item to the Document object
  - Select open:
  - Click Connect

Connecting the Document Menu

- Connect the Save… menu item to Document's save: action
  - Control drag from the Save… menu item to the Document object
  - Select save:
  - Click Connect

Connecting the Print Menu Item

- **Connect the Print… menu item to the Text View's print: action**
  - Control drag from the Print… menu item to the Text View object inside the Scroll View
  - Select print:
  - Click Connect

Connecting the Document Object to the Text View

- Connect the Document object's text outlet to the Text View
  - Control drag from the Document object to the Text View object inside the Scroll View
  - Select text
  - Click Connect

Creating Template Document Class Files

- Make class files from the template provided in the class description
  - Double-click the Document object in the Project window
  - Classes>Create Files
  - Confirm you want them added to the project
- Switch to Project Builder

Implementing the open: Method

- Declare and instantiate the Open panel

```
– NSOpenPanel *openPanel =
    [NSOpenPanel openPanel];
```

- Run the Open panel for rtfd documents, and test to see if the user cancelled

```
– if ([openPanel runModalForTypes:
    [NSArray
      arrayWithObject:@"rtfd"]]) {
    ...
  }
```

Implementing the open: Method

- If the user didn’t cancel, have the Text View open the document using the filename the user provided

  -
    ```
    [text readRTFDFromFile:
        [openPanel filename]];
    ```

Document’s open: method

```
- (void)open:(id)sender
{
  NSOpenPanel *openPanel =
    [NSOpenPanel openPanel];

  if ([openPanel runModalForTypes:
    [NSArray arrayWithObject:@"rtfd"]) {

      [text readRTFDFromFile:
        [openPanel filename]];

  }
}
```

Implementing the save: Method

- Declare and instantiate the Save panel

  -
    ```
    NSSavePanel *savePanel =
       [NSSavePanel savePanel];
    ```
- Set the Save panel to save rtfd documents

  -
    ```
    [savePanel
       setRequiredFileType:@"rtfd"];
    ```
- Run the Save panel, and test to see if the user cancelled

  -
    ```
    if ([savePanel runModal]) {
       ...
    }
    ```

Implementing the save: Method

- If the user didn’t cancel, have the Text View open the document using the filename the user provided

  -
    ```
    [text writeRTFDToFile:
        [savePanel filename]
        atomically:YES];
    ```

Document’s save: method

```
- (void)save:(id)sender
{
  NSSavePanel *savePanel =
    [NSSavePanel savePanel];

  if ([savePanel runModal]) {

      [text writeRTFDToFile:
        [savePanel filename]
        atomically:YES];


  }
}
```

Building the Application

- Bring up the Build panel by clicking the Build button on the Project window
  - Notice that Project Builder prompts for save, and notices unsaved edits in both Project Builder and Interface Builder
  - Click the Build button in the Build panel

Running the Application

- Bring up the Run panel by clicking the Run button on the Project window
  - Click the Run button in the Run panel

Testing the Application

- Open a file
  - Document>Open…
  - Open “test.rtfd”
- Change it
  - Enter the text “And again!”
- Save the changes
  - Document>Save…
  - Save as “newTest”

MRD Check

- Break the 32K text limit
  - Open “bigYAP.rtfd”
- Provide advanced typography support
  - Format>Font>Font Panel…
  - Shift-click the Preview button
  - Select a font to preview
  - Enter text to preview in the text description field

MRD Check

- Provide advanced typography support
  - Enter “Big Bigger”
  - Select “Big” — just double-click
  - Change the font size to 50
  - Select “Bigger”
  - Enter 100.25 in the Size text field
  - Select all — triple click
  - Enter –25 in the Size text field

MRD Check

- Kerning
  - Enter “WOW”
  - Select “WO”
  - Format>Font>Kern>Tighten
- Ligatures
  - Enter “fight or flight”
  - Select the text
  - Switch the font between Helvetica and Times

MRD Check

- Variable baselines
  - Enter “bounce”
  - Select “o”
  - Format>Font>Baseline>Raise
  - Select “u”
  - Format>Font>Baseline>Lower

MRD Check

- Drag and drop color
  - Select text
  - Format>Font>Colors…
  - Drag a color swatch to the selection

MRD Check

- Graphic rulers; left, right, center and decimal tabs
  - Format>Text>Show Ruler

MRD Check

- Cut and paste font attributes
  - Select text of the desired font
  - Format>Font>Copy Font
  - Select text of the font to change
  - Format>Font>Paste Font
- Cut and paste paragraph attributes
  - Select text of the desired paragraph style
  - Format>Text>Copy Ruler
  - Select text of the paragraph style to change
  - Format>Text>Paste Ruler

MRD Check

- Support multi-platform drag and drop graphics
  - TIFF, EPS, BMP
- Support spell checking, using a shared, system-wide dictionary; support custom system and user dictionaries
  - Edit>Spelling…
- Provide integration with other applications; text and graphics should be available for use by other applications, like mail
  - Select the text
  - Services>Mail>Selection

Q&A

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