

applescript in a nutshell a desktop quick reference

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Introduction

AppleScript has been a staple of macOS automation for decades, allowing users to script applications, automate repetitive tasks, and create powerful workflows without writing complex code. Whether you're a seasoned developer, a power user who loves tweaking your desktop, or a curious newcomer looking to streamline your daily routine, a quick reference to AppleScript can save time and boost productivity.

In this guide, we'll break down AppleScript "in a nutshell" with a focus on desktop automation. You'll find concise explanations, practical examples, and a handy reference that you can keep on your desktop for instant access. By the end, you'll feel confident tackling common scripting scenarios, customizing your workflow, and exploring deeper AppleScript concepts.

What Is AppleScript?

AppleScript is a high level scripting language created by Apple for controlling applications, operating system features, and custom scripts on macOS. It's designed to read and write like natural English, making it approachable for non-programmers while still powerful enough for advanced developers.

Key characteristics:

- **Inter-Application Communication:** Send commands to apps that support scripting (e.g., Finder, Safari, Mail, iTunes).
- **Event-Based:** Trigger actions based on events such as file creation or user input.
- **Integrated with Automator:** Combine scripts with Automator actions for drag-and-drop workflows.
- **Script Editor:** Built-in editor with syntax highlighting and debugging tools.

Why Automate With AppleScript?

AppleScript excels in situations where you need to:

- Perform repetitive tasks—copying files, renaming batches, or sending emails.
- Integrate multiple apps—e.g., pull data from Numbers, process it, and paste into Pages.
- Customize the desktop—create dynamic menus, launch custom workflows, or control system settings.
- Extend macOS features—build utilities that aren't available in the UI.

Because AppleScript runs natively on macOS, it can interact with system components without external dependencies, making it a lightweight, reliable solution for everyday automation.

Core Concepts of AppleScript

1. Objects and Dictionaries

Every application that supports scripting publishes a **dictionary**—a list of objects, commands, and properties you can use. The Script Editor lets you view these dictionaries by selecting "Open Dictionary" from the File menu.

Example:

- Finder – Objects: folder, file; Commands: make, move.
- Mail – Objects: message, account; Commands: send, reply.

2. Syntax Basics

AppleScript uses a mix of natural language and structured syntax. Here are the building blocks:

- Variables: set myName to "Alice"
- Commands: tell application "Finder" ... end tell
- Objects: file "document.txt" of folder "Documents"
- Properties: name of file, size of file
- Control Flow: if...then...else, repeat...until, try...on error

3. Control Structures

AppleScript supports classic control structures:

- if/then/else
- repeat loops (with with counter or until clauses)
- try/on error for error handling

Example of a repeat loop:

```
repeat with i from 1 to 5
    log i
end repeat
```

4. Working with Objects

Objects can be referenced by name, ID, or a path. You can manipulate them using commands.

Example: Move a file from Desktop to Documents.

```
tell application "Finder"
    set theFile to file "example.txt" of desktop
    move theFile to folder "Documents" of home
end tell
```

AppleScript Syntax Cheat Sheet

Below is a compact reference you can copy into a text file and keep on your desktop for quick access.

-- Variables

```
set myVar to "value"
```

-- Comments

```
-- This is a comment
```

-- If statement

```
if myVar is equal to "value" then
    display dialog "Match!"
```

```

else
    display dialog "No match."
end if

-- Repeat loop
repeat with i from 1 to 10
    log i
end repeat

-- Try/catch
try
    -- risky code
on error errMsg number errNum
    display dialog "Error " & errNum & ": " & errMsg
end try

-- Tell application
tell application "Finder"
    -- commands
end tell

```

Desktop Automation Examples

1. Organize Downloads

Automatically move files from the Downloads folder into categorized subfolders based on file type.

```

tell application "Finder"
    set downloadFolder to folder "Downloads" of home
    set fileList to every file of downloadFolder

    repeat with aFile in fileList
        set fileExtension to name extension of aFile
        if fileExtension is in {"jpg", "png", "gif"} then
            set targetFolder to folder ("Images" as string) of downloadFolder
        else if fileExtension is in {"pdf", "doc", "docx"} then
            set targetFolder to folder ("Documents" as string) of downloadFolder
        else
            set targetFolder to folder ("Others" as string) of downloadFolder
        end if

        if not (exists targetFolder) then
            make new folder at downloadFolder with properties {name:targetFolder}
        end if
        move aFile to targetFolder
    end repeat
end tell

```

```
end repeat
end tell
```

2. Launch and Control a Media Player

Play a specific song in iTunes (now Music) and pause after 30 seconds.

```
tell application "Music"
    play track "Song Title" of playlist "Favorites"
    delay 30
    pause
end tell
```

3. Create a Custom Desktop Menu

Use AppleScript to build a simple menu that appears when you right click the desktop.

```
on open theItems
    tell application "Finder"
        set theName to name of the first item of theItems
        display dialog "You opened " & theName buttons {"OK"} default button 1
    end tell
end open
```

Save this script as an application, then add it to the “Services” menu via System Settings !' Keyboard !' Shortcuts !' Services. Right clicking the desktop will show the custom script.

4. Generate a Daily Summary Email

Compile a list of calendar events for the day and email it to yourself.

```
tell application "Calendar"
    set todayEvents to (every event whose start date is greater than (current date) and start date is less than
        ((current date) + 1 * days))
end tell

set eventList to ""
repeat with ev in todayEvents
    set eventList to eventList & (summary of ev) & " at " & (start date of ev) & return
end repeat

tell application "Mail"
    set newMessage to make new outgoing message with properties {subject:"Today's Calendar", content:eventList,
        visible:true}
    tell newMessage
        make new to recipient at end of to recipients with properties {address:"you@example.com"}
```

```
    send
end tell
end tell
```

AppleScript Quick Reference Table

Keep this handy for quick look ups.

Command	Purpose
tell application "AppName"	Target an app for scripting.
set var to value	Assign a value to a variable.
if...then...else	Conditional execution.
repeat with i from 1 to n	Loop over a range.
try...on error	Handle errors gracefully.
make new object	Create a new object (e.g., file, folder).
move object to destination	Move an object.
display dialog	Show a dialog box.
log text	Write to the log console.

Advanced AppleScript Techniques

1. Using Standard Additions

AppleScript's **Standard Additions** library provides generic commands like display dialog, choose file, and do shell script. It's automatically loaded, so you can use these without a tell block.

2. Interfacing with Shell Scripts

Sometimes native macOS commands are easier via the shell. Use do shell script to run Bash or AppleScript commands.

```
set currentDate to do shell script "date +%Y-%m-%d"
```

```
display dialog "Today's date: " & currentDate
```

3. Using Dictionaries Dynamically

Query an application's dictionary at runtime to discover available commands.

```
tell application "Finder"
  set appDict to dictionary of application "Finder"
  -- Process appDict as needed
end tell
```

4. Error Handling Strategies

Robust scripts catch errors early:

- Use on error blocks to provide fallback behavior.

- Log errors to a file for later review.
- Validate inputs before executing commands.

Resources for Further Learning

- AppleScript Language Guide – Official Apple documentation.
- Script Editor Help – Built in help accessible from the Script Editor menu.
- MacScripter Community – Forums and shared scripts.
- Automator Tutorials – Learn how to combine AppleScript with Automator actions.
- GitHub Repositories – Browse open source AppleScript projects for inspiration.

Conclusion

AppleScript remains a powerful

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