

Outline

- A. Install Software and Fonts
- B. Nano-Review of Unicode and Fonts/Input Utilities
- C. Overview of Mac Input Utilities
- D. Demo of
 - 1. U.S. and U.S. Extended
 - 2. Unicode Hex Input
 - 3. Russian (Phonetic vs Native)
 - 4. Character Palette
- E. Why Build Your Own?
- F. Install Logic Keyboard and Ukelele
- G. Copy and Modify U.S. Keyboard
 - 1. Assign a Simple Option Code
 - 2. Undoing an Dead Key
 - 3. Creating a New Dead Key
 - 4. Beyond the Western LTR Alphabet Type

Install Software and Fonts

Already on Mac (Applications Folder)

- TextEdit
- Calculator (Optional)

Freeware

1. Drag **Ukelele 1.83 folder** to **Applications** folder.
 2. Double click **UnicodeFontInfor_1_5_1.dmg**. Drag **Unicode Font Info.app** to **Applications** folder.
- Ukelele 1.8.3 (SIL)
 - http://scripts.sil.org/cms/scripts/page.php?site_id=nrsi&item_id=ukelele&_sc=1
 - <http://www.macupdate.com/info.php/id/14495>
 - Unicode Font Info (Andrew Thomson)
 - <http://pixel.recoil.org/code/unicodfontinfo/>
 - Img2Icons (ShinyFrog) – <http://www.img2iconsapp.com/>
Not in Class folder

Freeware Font

1. Shut down all text editing apps (e.g. Text Edit, Dreamweaver, Word)
2. Open **ArevFontFamily** Folder.
3. Place four **.ttf files** in **~/Library/Fonts**
Note: “~” means the users folder. Click Home (white house) icon to access.

If font not recognized in an application, then try these

- Quit and restart application
- Look for font at the **bottom of the font list** (with Asian fonts).
- Arev Sans font Download (tavmjong)
 - <http://tavmjong.free.fr/FONTS/>

Free Logic Keyboard (Penn State)

1. Shut down all applications.
2. Open **LogicKeyboard** folder.
3. Place **LogicSymbol.keylayout** and **LogicKeyboard.icns** in **~/Library/Keyboard Layouts**.
4. *You must reboot computer* any time you install a new keyboard layout.

Nano Review of Unicode & Input Utilities

An Encoding Scheme

- An **encoding** scheme assigns a **number to each possible character or glyph** within a script or set of scripts.
- Unicode aims to assign a number (aka **code point**) to each possible glyph in all scripts ever used in the world.

Example codes

- **Note:** Unicode code points are typically given in **hexadecimal (base-16)** values.

CODEPOINT	GLYPH – GLYPH NAME
U+0041	A – Latin Capital Letter A
U+0061	a – Latin Small Letter A
U+00C0	À – Latin Capital Letter A with Grave (Precomposed)
U+00C1	Á – Latin Capital A Letter with Acute (Precomposed)
U+0391	Α – Greek Capital Alpha
U+03B1	α – Greek Small Letter Alpha
U+2203	∃ – There exists
U+2208	∈ – Is an element of
U+2209	∉ – Is not an element of
U+0020	– Space (i.e. a blank space)
U+00E9	" –Quotation Mark
U+201C	“ –Left Double Quotation Mark
U+201D	” –Right Double Quotation Mark

Lookup codes

- <http://www.unicode.org/charts>
- <http://www.unicode.org/Public/UNIDATA/UnicodeData.txt>

Inputting Unicode Text

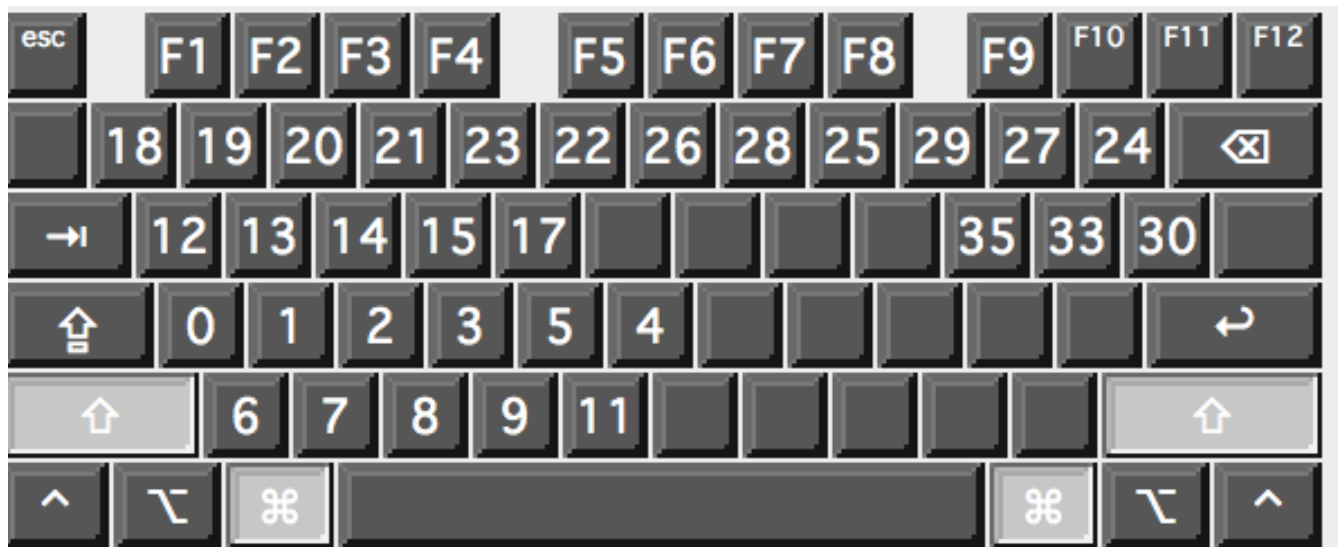
The Role of the Font

A properly encoded font matches the **encoding number with the character specified in the encoding scheme.**

A Unicode encoded font would always display character Ξ in position x2033 (x = hex number) and € in position x2209. Conversely, a properly encoded font would never display Ξ in any other position except x2033.

Keyboards Have Numbers Also

Apple OS X



Partial schematic of Apple keyboard numbers.

U.S. Keyboard

Key 1 = U+0073 = Latin Small Letter S

Shift+Key 1 = U+0053 = Latin Capital Letter S

Greek

Key 1 = U+03C3 = Greek Small Letter Sigma (σ)

Shift+Key 1 = U+03A3 = Greek Capital Letter Sigma (Σ)

Overview of Different Input Methods for Mac

There are several utilities available to help you insert or type accented letters and other special characters. To pick one that could work for you, check the grid below to see what software and hardware you need.

METHOD	SOFTWARE/HARDWARE
U.S. Default + Accent Codes	These are enabled by default on all U.S. Macs.
U.S. Extended Keyboard	This utility significantly expands the accents available to long marks, Central European characters and more.
Unicode Hex Input	A utility which allows you to generate any Unicode character by pressing the Option Key plus the
Language Keyboards	Change key settings to characters needed for a language. Apple includes many but others are available as freeware.
Character Palette	A utility which allows you to insert Unicode characters including a large number of symbols

Open Text Edit (Applications Folder)

Text Edit is an ideal application to test a keyboard because

- It recognizes all of Apple's font specifications (esp Middle Eastern/South Asian)
- It switches fonts if you type a glyph not found in the current font.

U.S. Standard + Accent Codes

These accent and character codes are accessed with the **Option** key.

Basic Codes

To insert these characters, press the **Option** key (bottom of keyboard) then other "code" key to make the symbol appear.

Example 1: To input French ç (**Option+C**), hold down the Option, then the C key. The ç will appear.

Example 2: To input French Ç (**Shift+Option+C**), hold down the Shift key, then the Option key, then the C key. The Ç will appear.

Other Foreign Characters

Symbol	Codes
ï	Option+1
ı	Shift+Option+ ?
ç,Ç	Option+C Shift+Option+C
œ,Œ	Option+Q Shift+Option+Q
ß	Option+S
ø,Ø	Option+O Shift+Option+O
å,Å	Option+A Shift+Option+A
æ,Æ	Option+' Shift+Option+' (apostrophe key)
«»	Option+\ Shift+Option+\

Currency Symbols

Symbol	Code	Notes
¢	Option+4	Cent Sign
£	Option+3	British Pound
¥	Option+Y	Japanese Yen
€	Shift+Option+2	Euro
f	Option+F	Dutch Florin

Letters with Accents (Actions)

Accented Vowels

This list is organized by Accent type. The sample shows a letter with that accent, and the Notes present any special comments about using that accent.

For the Template, the symbol "V" means any vowel. The format is to hold the first two keys down simultaneously, release, then type the vowel you wish to be accented.

Accent	Sample	Code	Notes
Acute	ó,Ó	Option+E,V	
Circumflex	ô,Ô	Option+I,V	
Grave	ò,Ò	Option+`,V	
Tilde	õ,Õ	Option+N,V	Only works with n,N,o,O,A
Umlaut	ö,Ö	Option+U,V	

Example 1: To input the letter ó, hold down the **Option** key, then the **E** key. Release both keys then type lowercase o.

Example 2: To input the letter Ó, hold down the **Option** key, then the **E** key. Release both keys then type capital O.

Actions and Dead Keys

A specification which matches combinations of keystrokes with the right glyph. The Accented Vowel keystrokes are specified by a set of actions.

The **Option+E** key does not generate a single character but “holds” until a vowel is selected, then inserts the character for a vowel plus acute accent. The **Option+E** is a **dead key** which takes the user to another **state** where typing a = á.

Typing Practice

América São Paulo Übermann
déjà vu hôtel Ñandutí

Activate Apple Keyboards

Apple includes a number of keyboard utilities which change the mapping between the keys and the characters generated.

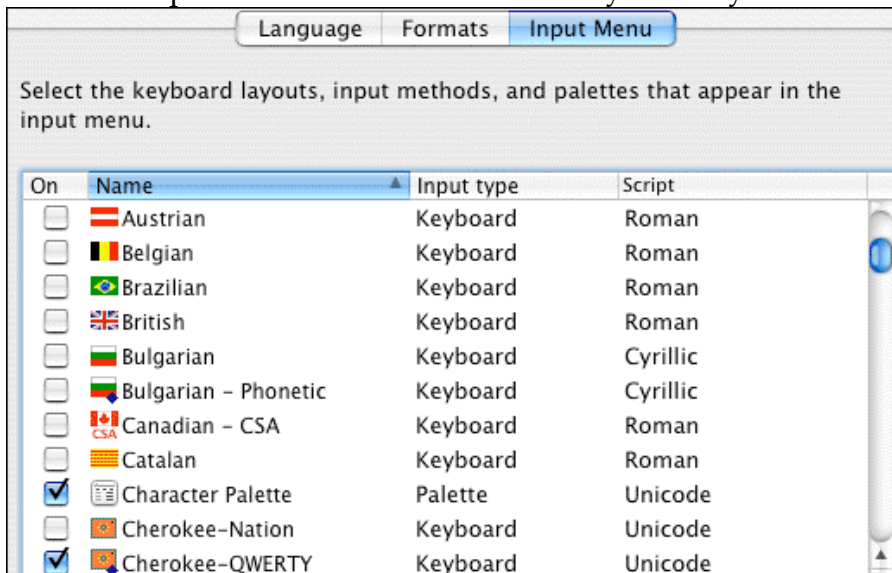
Activate the Keyboard (Leopard)

1. Go to the **Apple** menu and open **Systems Preferences**.
2. Click the **International** icon on the first row of the **Systems Preferences** panel.



System Preferences Window.

3. Click the Input Menu tab and check the keyboards you want activated.



List of available keyboards on this system

Note: If you do not see the keyboard you need to activate, you may need to install them from an OS X CD or download the most recent version of OS X from [Apple](http://apple.com). Make sure the appropriate

Localized Files are checked during the installation set-up wizard.

Minimal Keyboards to Activate

You will need to activate the following keyboards to complete the rest of the exercises in this handout.

- **Unicode Hex Input**
- **U.S. Extended**
- **Russian** and **Russian Phonetic**
- **Logic Keyboard**
- **Character Palette**
- **Keyboard Viewer**
- Any other keyboards of your choice.



Switch Between Keyboards

If you want to switch between switch between the International keyboard and other keyboards, do the following:

1. Make sure you have activated your target keyboards following the instructions above. You should see an **American flag** icon in the upper right of your computer screen. This icon indicates that more than one keyboard is active on your system.



U.S. flag for the U.S. keyboard

2. Open an application such as a word-processor, HTML editor, spreadsheet or any other application in which you need to input text.
3. On the upper right portion of the screen, click on the American flag icon (). Use the dropdown menu to select the U.S. Extended Keyboard () which symbolized as the U.S. flag with a U.

Note: If the keyboard is grayed out, then the application is too old to support the Extended keyboard.

The keyboard will be selected and the appropriate font selected (except for some Adobe applications).

Change Default Keyboard

To change the default keyboard, go to the Finder (i.e. where you navigate to folders and open applications and switch the keyboard.

U.S. Extended Keyboard Codes

- These codes only work within the U.S. Extended Keyboard
- They work with many letters, but not all letters
- Math option codes are not available in the U.S. Extended Keyboard

Accent	Sample	Code	Notes
Acute	ý, Ý	Option+E,X	
Circumflex	ŵ, Ŵ	Option+I,X	Different from U.S. Keyboard
Macron	ō, Ō	Option+A,X	
Brave	ǒ, Ŏ	Option+B,X	
Cedille	ș, Ș	Option+C,X	
Polish Ogonek	ą, Ą	Option+M,X	
Hachek	č, Č	Option+V,X	
Double Acute Double Grave	ő, Ő ö, Ö	Option+J Shift+Option+Y,X	
Dot Above Dot Below	ó, Ó o. O	Option+W,X Option+X,X	
Strikethrough	ł, Ł	Option+L,X	Only, O,L, lowercase I
Thorn	þ, Þ	Option+T Shift+Option+T	
Eth	ð, Ð	Option+D Shift+Option+D	
Circle	ů, Ů	Option+K	Only u,a
Arch	ô, Ô	Shift+Option+S,X	
Grave	ỳ, Ỳ	Option+`,V	
Tilde	ẽ, Ë	Option+N,V	Only works with n,N,o,O,A
Umlaut	ÿ, Ÿ	Option+U,V	

Unicode Hex Option Keyboard

This utility allows you to input characters based on their Unicode hexadecimal value.

Activate Keyboard

1. The **Unicode Hex Input** keyboard can be activated as a “keyboard” in **International** options within the **System Preferences**. See the instructions for activating a keyboard in the “U.S. International Section.”
2. Open any application such as which supports Unicode input.
3. Choose **Unicode Hex Input** from the **International** (flag icon) menu on the upper right.
4. Type Option+<the hexadecimal code value> for the character (see details below).
Note: The code must be at least 4 digits long

Typing Exercise

What is this sequence?

Option+03BA

Option+03BF

Option+03B4

Option+03B5

And this Sequence?

Option+0043

Option+006F

Option+0064

Option+0065

Decimal Versus Hexadecimal Codes

Unicode character codes can be listed as hexadecimal (e.g. U+03BA) or decimal (954). Depending on your application, you may need one or the other.

For example: **Windows ALT Codes** always use the decimal value.

If Above U+FFFF

If the code is above U+FFFF (i.e. five or more hex digits), then code must be entered as two 4-digit (16-byte) sequences (or the UTF-16 Surrogate Pair).

e.g. 𐤎 (Phoenician Letter Mem) = U+1090C =
Option+(D802+DD0C) release

See http://en.wikipedia.org/wiki/UTF-16/UCS-2#Encoding_of_characters_outside_the_BMP for algorithm

Character Palette

The **Character Palette** is a Mac utility which allows you to insert individual accented characters, symbols and characters from other scripts.

Activate Character Palette

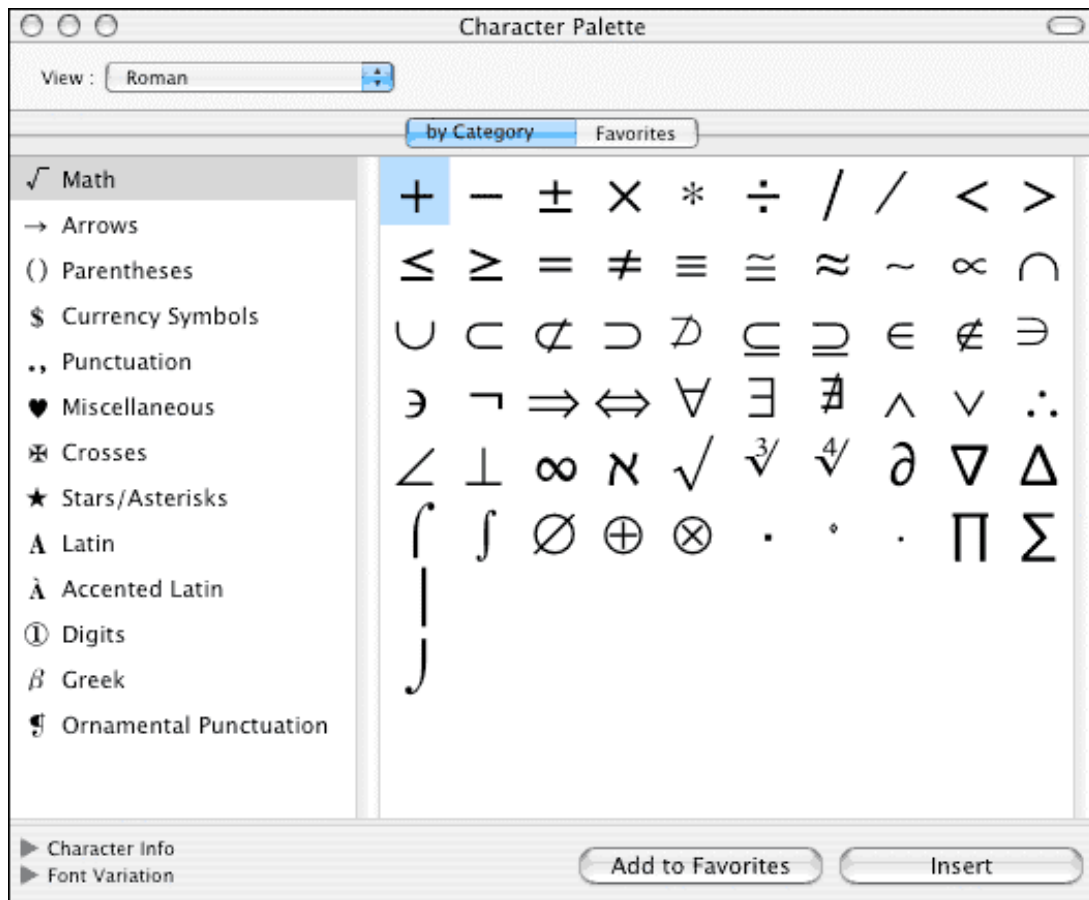
The **Character Palette** can be activated as a “keyboard” in **International** options within the **System Preferences**. See the instructions for activating a keyboard in the “U.S. International Section.”

Open Character Map

1. Open any application such as which supports Unicode input.
2. Choose **Show Character Palette** from the **International** (flag icon) menu on the upper right.

Basic Symbols

3. In the new window, switch the **View** drop-down menu to **Roman**.
4. Select the type of symbol in the left column.
5. Highlight the symbol needed, then drag the symbol into the document or click **Insert**.



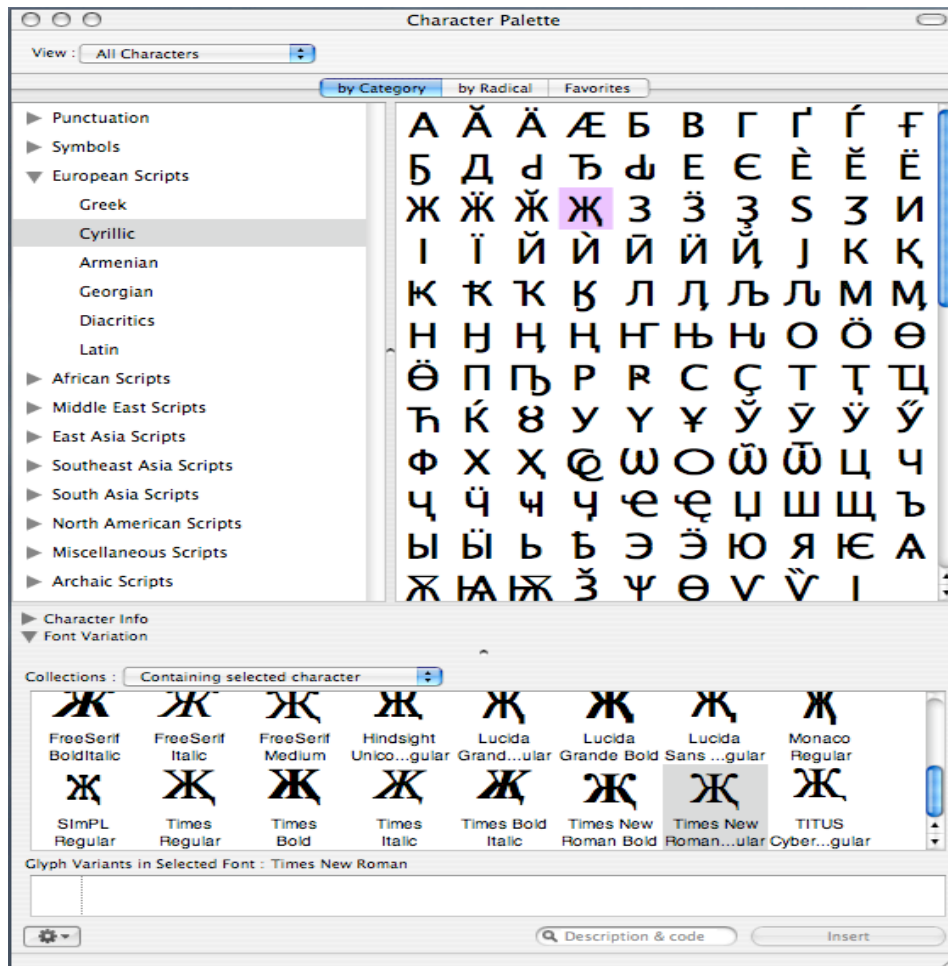
Character Palette – Roman View Options

Roman View Options

1. **Math** – Math symbols
2. **Arrows** – Arrow variations
3. **Parentheses** – Bracket variations
4. **Currency Symbols**
5. **Punctuation** – Includes foreign language punctuation
6. **Miscellaneous, Crosses, Stars/Asterisks** – multiple symbols
7. **Latin** – basic English alphabet
8. **Accented Latin** – Accented letters and non-English symbols
9. **Digits** – Fractions, circled numbers, superscripts/subscripts
10. **Greek** – Basic Greek symbols with access to accented Greek
11. **Ornamental Punctuation and Braille** – more symbols

Additional Symbols

To view symbols from multiple scripts, switch the **View** menu in the upper left to **All Characters**.



About Other Language Keyboards

What Apple Provides

See list on <http://tlt.its.psu.edu/suggestions/international/keyboards/mackey.html>

Note: This list is reconstructed over time. Minor inaccuracies may occur.

QWERTY/Phonetic/Transliterated vs. Native Layout

Keyboards can be split into two types:

QWERTY/Phonetic/Transliterated

Keys are mapped to match English (Latin) letters and characters in other script. For instance Latin "S" would be Cyrillic "С", Latin "R" would be Cyrillic "Р" Latin "P" would be Cyrillic "П", and so forth.

Recommended for U.S. foreign language students.

Native Layout

Matches native typewriter layout

Preferred by many native (but not all) native speakers.

Third Party Keyboards

Covers scripts not supported by Apple. Many are freeware.

- <http://www.redlers.com/downloadkeyboard.html>
- Do a Google Search

Make Your Own!

- Ukelele – http://www.sil.org/computIng/catalog/show_software.asp?id=94
- XML Spec – <http://developer.apple.com/technotes/tn2002/tn2056.html>

Creating Your Own Keyboard

Why On Earth....

- **Efficiency:** Palettes are good for the occasional exotic character, but becomes cumbersome when entering multiple characters over the course of a long document.
- **Accessibility:** Typing causes less strain to hand muscles than repeated mouse movements.
- **Mental processing:** Mnemonic keystrokes easier to process and again, quicker is more efficient.

Possible Scenarios (Not Already Built)

- Include most frequently used technical symbols
 - Logic Symbols
 - Currency Symbols (Global pricing?)
 - Astronomy/Meteorology (Planets, weather symbols)
 - Thermodynamics (calculus, dotted letters)
 - Chess/Poker/Mahjong publications
 - Publications on religion/spirituality
 - Most technical fields use only a fraction of the Math and other symbol blocks
- Missed PC version of a layout
U.S. International (PC) on the Mac
<http://www.brockhoff.net/usi/index.html>
- No keyboard for your language's orthography/region yet
- Special characters for archiving historical documents (e.g. Insular Celtic "D" = Ḟ)

Planning The Keyboard

Partial set used for this class. Installed Logic Course may have different layouts.

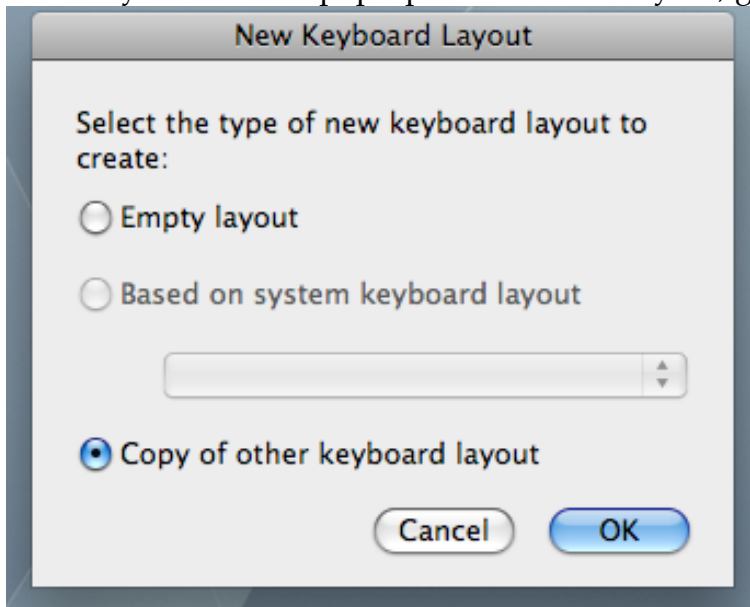
Character	Key Stroke (Including Dead Keys)	Unicode Code Point
∇	Option+A	U+2200
∃	Option+E	U+2203
∄	<i>Option+ \,E (Action)</i>	U+2204
∨	Option+V	U+2228
∪	Shift+Option+V	U+222A
∧	Option+7	U+2227
∩	Shift+Option+7	U+2229
≡	Option+-	U+2261
≠	<i>Option+ \,-</i>	U+2262
∈	Option+3	U+2208
∉	<i>Option+ \,3</i>	U+2209
⊃	Shift+Option+>	U+2283
⊄	<i>Option+ \,></i>	U+2285
⊂	Shift+Option+<	U+2282
⊄	<i>Option+ \,<</i>	U+2284
↔	Shift+Option+-	U+2194
→	Option+;	U+2192
←	Option+K	U+2190
¬	Option+L	U+00AC
~	Shift+` (Tilde Key)	U+007E
ℙ	Option+P	U+2119
ℚ	Option+Q	U+211A
ℝ	Option+R	U+211D

Create Keyboard in Ukelele

Create Template Based on U.S. Standard

Note: The U.S. default chosen because many math symbols already built in.

1. Open **Ukelele** from the **Applications** folder. You will see a small ukelele icon in a popup.
2. In the new layout window, select **Copy of other keyboard layout**. Click OK.
Note: If you don't see pop-up to create new layout, go to File » New.



3. In the file browsing window, go to **Applications/Ukelele 1.83/System Keyboards/Roman/** and select **U.S..keylayout**.
4. A U.S. keyboard display opens. Save the keyboard as **LogicClass.keylayout**.

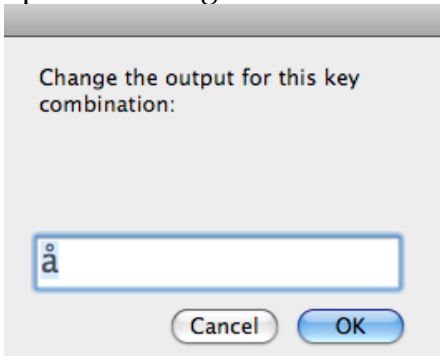


Change Basic Option Key Assignments

1. Switch to the **Unicode Hex** keyboard.
2. Press **Option+A**. You will see that å is currently assigned to this sequence. The keys with a white outline are “dead keys” associated with actions.



3. Press **Option+A** again, then double click on that key in the virtual layout. A pop-up window opens showing the current assignment of that key.



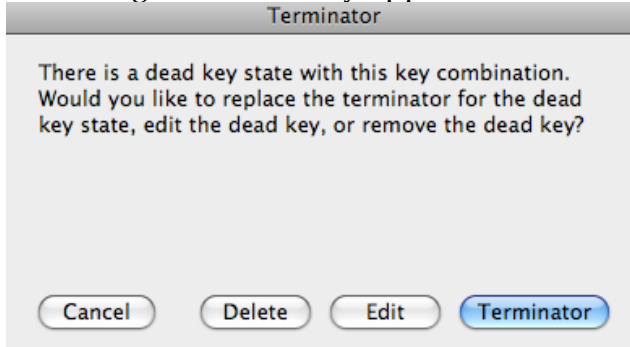
4. Place your cursor in the pop-up text area and highlight å. Type **Option+2200** (in Unicode Hex keyboard) or **∄**. The display changes to ∇. Click **OK** to close the Window.

Note: Other input options include drag and drop from the **Character Palette**, inserting from the Character Palette or copy and paste from another (Unicode) document including Web sites.

5. Click **Option+A** to verify change of å to ∇.

Override a Dead Key

1. Press **Option+E** in Ukelele. The white outline indicates that this is currently a dead key which is associated with an action to assign an acute accent over a vowel.
2. Press **Option+E** again, then double click on that key in the virtual layout. A pop-up window indicating it's a dead key appears.



3. Click the **Delete** option. The window to change the key assignment appears. Enter **Option+2203** (Unicode Hex) for \exists .

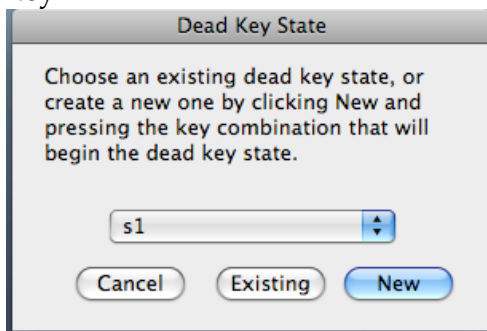
Adding A Dead Key Action

In this section we will add the **Option+ ** dead key such that

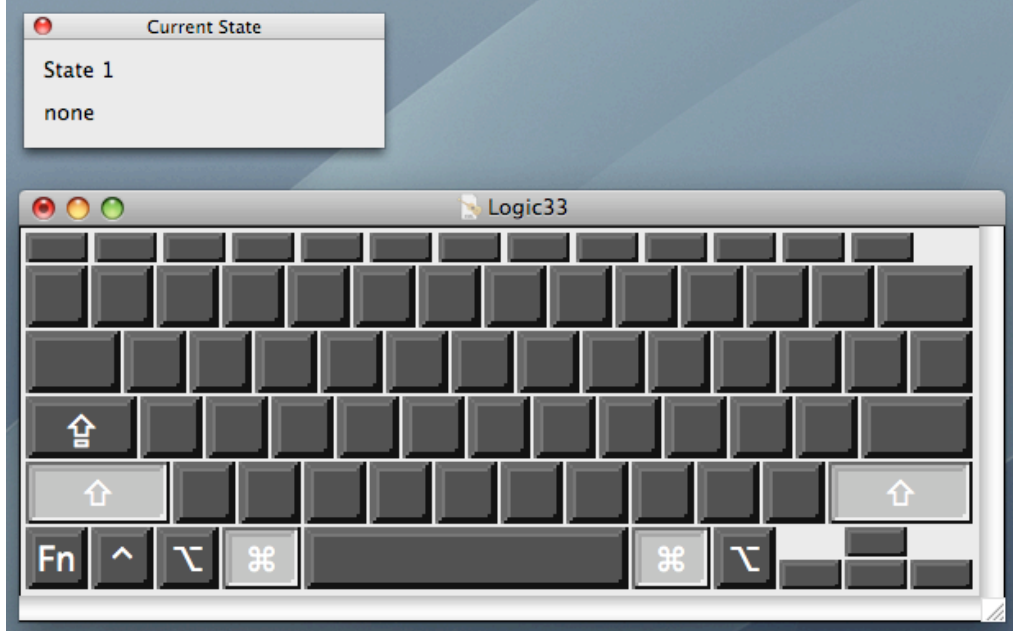
- **Option+ \,E** = A
- **Option+ \,3** = €
- **Option+ \,-** = ≠

In this case the **Option+ ** key is a dead key.

1. From the **Keyboard** menu select **Edit Dead Key**.
2. A window of predefined dead keys appears (if they exist). Click **New** to create a new dead key.



3. A window stating none opens. Type **Option+ **. A new state (State 1) appears in the list of states and a blank keyboard opens.



4. Click the E key location. Input \cancel{E} or \cancel{E} ;
5. Input the other “not” or strikethrough characters at the appropriate key locations.
6. To complete the dead key specification, from the **Keyboard** menu select **Finish Dead Key**. The basic key assignments should reappear and only the **none** state should be visible.
7. Press **Option+ **. You should see only a white rectangular outline, indicating that it is now a dead key.

Change Name of Dead Key State

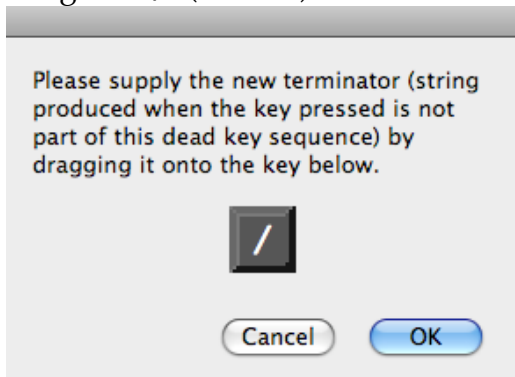
1. From the **Keyboard** menu select **Edit Dead Key**.
2. Select State 1 from the menu. Click **OK**.
3. Type in new name (e.g. “Not Slash”) in the next window’s text field. Click **OK** to exit.

Add A Terminator

A terminator is what **Option+ ** displays until the sequence is complete. Currently **Option+ ** displays nothing, but it could display a “placeholder” /.

1. From the **Keyboard** menu select **Edit Dead Key**.
2. Select the state you just created in the menu. Click **Existing**.
Note: If this option is grayed out, then make sure you have performed steps #1-2.
3. From the **Keyboard** menu select **Change Terminator**. A window with the blank dead key appears.
4. Open the **Character Palette**. Select the Punctuation option on the left.

5. Drag the “/” (solidus) character onto the dead key in the pop up. Click OK to exit.



Terminator set to forwards slash.

6. To exit the dead key edit mode, select **Keyboard » Finish Dead Key**.

Load and Test

1. Shut down all applications.
2. Place .keylayout folder in either `~/Library/Keyboard Layouts/` (just one user account) or `/Library/Keyboard Layouts/` (all accounts). See details below.
 - a. On your desktop (i.e. Finder) go to the **File** window then **New Finder Window**.
 - b. Open your **Users** folder clicking the house icon on the left (or click the **Macintosh HD** icon if you want to install the font for all users).
 - c. Open the **Library** folder then **Keyboard Layouts** folder.
 - d. Drag **LogicSymbols.keylayout** file into this folder.
3. Reboot the Mac, then activate keyboard from the **International** options in **System Preferences**.
4. Open TextEdit, switch to this keyboard and test option keys.

Other Options

View Keyboard Numbers in Ukelele

To view keyboard number codes,

1. Go to **Keyboard » Show Key Code**.
2. Press key to reveal the number of that key.
3. To hide the window, go to **Keyboard » Hide Key Code**.

Create the Keyboard Icon

The image associated with your keyboard is an .icns image file.

1. Find or create an image file of an appropriate shape (size not important yet) which can be legible at small sizes. File should be about 300 x 300 pixels.
Note: Format can be GIF, PNG, JPG or other common image format.
2. Open **img2icns.app** (if available). A popup window opens.
3. Drag PNG image file from desktop into dotted box. The box closes and a .icns file will be created.



Drag PNG image into dotted box above to create a .icns file.

4. Check preview for size and legibility, then click the File (folder icon) to select location for output.



5. Click the **Icns** icon to select location for output. Click **Choose** to trigger conversion.
6. Give the .icns file the same name as your keyboard. For instance if your keyboard is **foo.keylayout**, then the image must be **foo.icns**.

Apple Keyboard XML

Open XML File

To view the XML, open a .keylayout file in TextEdit, BBEdit or other text edit editor.

Apple's Official Specification

<http://developer.apple.com/technotes/tn2002/tn2056.html>

Some Notes & Example Code

<keyboard> - root and name of keyboard

```
<keyboard group="0" id="0" name="Logic33" maxout="1">
```

<layout> (See Apple Docs)

<modifierMap> (Controls dead keys such as Shift, Option, Caps Lock)

<keyMapSelect> (Assigns dead keys a number)

```
<keyMapSelect mapIndex="3"> <!-- Option = State 3 -->
    <modifier keys="anyOption"/>
</keyMapSelect>
```

<keyMapSet> (Where keys/output specified)

<key> (the assignment)

```
<keyMap index="3">
```

```
  <key code="0" output="v"/>
```

```
  <key code="1" output="&#x00df;"/>
```

...

```
  <key code="14" action="14"/> <!-- E key interaction w/ dead key -->
```

...

```
</keyMap>
```

<action> (Where interactions with dead keys specified)

```
<action id="14">
  <when state="none" output="e"/>
  <when state="Not Slash" output="ž"/>
  <when state="s1" output="&#x00e9;"/> <!-- x00e9 = é -->
  <when state="s2" output="&#x00e8;"/>
  <when state="s3" output="&#x00ea;"/>
  <when state="s4" output="&#x00eb;"/>
</action>
```

<terminators>

```
<terminators>
  <when state="Not Slash" output="/" />
  <when state="s1" output="&#x00b4;"/> <!-- x00b4 = ´ -->
  <when state="s2" output="`"/>
  <when state="s3" output="&#x02c6;"/>
  <when state="s4" output="&#x00a8;"/>
  <when state="s5" output="&#x02dc;"/>
</terminators>
```

Non-Western Scripts

Syllabary & South Asian

- Consonants typically are “dead keys”
- Check out the XML

Linear B Keyboard in Ukelele

http://www.geocities.com/ale_vatri/ (Allesandro Vatri)



Non-Latin Scripts (e.g. Greek, Cyrillic)

Keyboard XML differs in some ways from Latin keyboards. Use a non-Latin keyboard as a basis in Ukelele or inspect XML.

RTL Scripts

RTL direction built into the characters, but directionality of punctuation (e.g. ()) a concern
Check out the XML as well

CJK Scripts

Often built with alternate palettes similar to the Character Palette (but with options to type character by Western pronunciation or stroke). That is another seminar...

Appendix 1: Does This Font Have My Glyph?

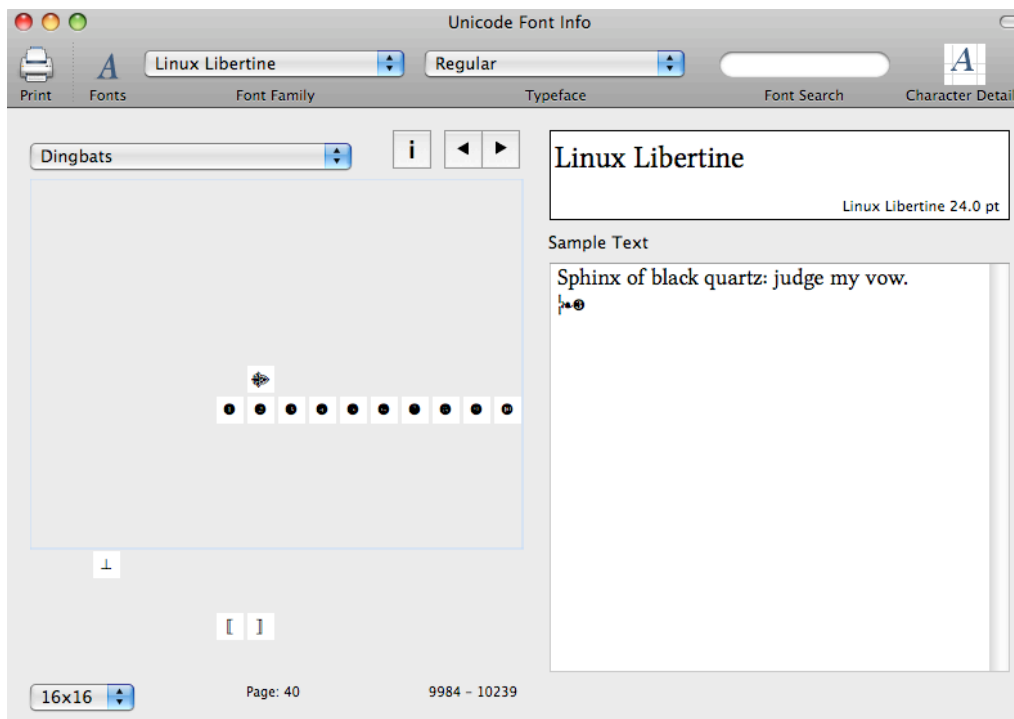
In many cases (e.g. phonetics, math symbols, non-Latin script), a software application will continue to output text but actually switch fonts behind the scenes.

Background Font Switch – Quick Demo

1. Open Word and switch to **Unicode Hex Input** or the **Logic Keyboard**.
2. Set the font to **Palatino**.
3. Type some English text, then type or insert a logic symbol, then type some English text again.
Note: The English text after the logic symbol is likely not Palatino

Unicode Font Info Application

This application allows you to inspect fonts by name and also Unicode blocks in each font.



This palette shows available Dingbat characters in the Linux Libertine font.

Download: <http://pixel.recoil.org/code/unicodefontinfo/index.html>

Character Palette

Highlight a character and click arrow besides **Font Variation** to display variants in multiple fonts. Some processing time may be involved.

Appendix 2: Fonts for Phonetics and Other Obscure Scripts

Good News

Apple and Windows both supply fonts which cover a large number of scripts (e.g. Greek, Russian Cyrillic, Hebrew, Arabic, Armenian, Chinese, Japanese, Korean, Devanagari)

Bad News

- There's not a large selection in font variety for undersupported scripts.
- Not everything is covered

Key Fonts for Phonetics/Extended Latin/Grk/Cyr

- Lucida Grande – Free from Apple with lots of glyphs. Default system and menu font.
αβγ дпл āšǰǓ
- Monaco – Free from all with lots of glyph. Suited for plain text.
αβγ дпл āšǰǓ
- Arial Unicode MS – Free from Windows with lots of glyphs. Now available on Apple as of OS X 10.5
αβγ дпл āšǰǓ
- Times New Roman – Actually contains Latin/Greek/Cyrillic, but **not all** IPA
αβγ дпл āš

Apple & Windows also ship with language specific fonts.

See <http://tlt.its.psu.edu/suggestions/international/bylanguage/index.html>

Insert Text in Phonetics (Manual Font Control)

1. Insert text using methods listed above
2. If box appears, switch to Lucida Grande or other phonetics fonts (see below)
Note: You may need to switch

Other Phonetic Fonts

These also support Latin, Greek, Cyrillic other characters as indicated by developers.

- SIL Fonts – http://scripts.sil.org/cms/scripts/page.php?site_id=nrsi&id=FontDownloads&_sc=1
- Junicode (Medieval) – <http://junicode.sourceforge.net/>
- Aboriginal (Native American) – <http://www.languagegeek.com/font/fontdownload.html>
- Quivira (Mega Font) – <http://www.grinningbit.com/quivira.php>
- Arev (Sans Serif Mega) – <http://tavmjong.free.fr/FONTS/>

See also <http://tlt.its.psu.edu/suggestions/international/bylanguage/ipa.html>

Phonetic Keyboards & Palettes

- SIL (Mac) – http://scripts.sil.org/cms/scripts/page.php?site_id=nrsi&id=UniIPAKeyboard&_sc=1
- IPA Palette (Mac) – <http://www.blugs.com/IPA/>
- UCL Phonetic Keyboard (Win) – <http://www.phon.ucl.ac.uk/resource/phonetics/>
- Windows IPA Palette (Win) – <http://www.davidmontero.net/Linguistics.php>

Installation Instructions

See <http://tlt.its.psu.edu/suggestions/international/keyboards/macfont.html>

Third Party Fonts for Other Scripts

Installation Instructions:

- Free and for pay. Many academic consortia are developing fonts for undesupported scripts (as well as talented amateurs)
- TTF and OTF fonts fine (except for Arabic/South Asia)
- **Try to get a matching keyboard!**
- SIL Fonts
http://www.sil.org/computing/catalog/show_software_catalog.asp?by=cat&name=font
- Alan Wood
<http://www.alanwood.net/unicode/fonts.html> (Win/3rd Party)
http://www.alanwood.net/unicode/fonts_macosx.html
- Gallery of Unicode Fonts
<http://www.wazu.jp/>