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A Hypercard Sentence Generating Program For Foreign Language Study

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外国語学習のためのハイパーカード文章自動発生プログラムとその応用

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Abstract

This is a description and explanation of a random sentence generator which can be used in the study of foreign languages. The paper explains in detail how to use the Hypercard stack Random Sentences. A listing of the stack's script is also included. This random sentence generator differs from others in that the user is allowed to input sentence patterns as regular English and does not need to use "grammar" language or code words.

Introduction

This paper describes and explains the random sentence generator, *Random Sentences*, which I wrote using Hypercard on a Macintosh computer. This random sentence generator differs from others in that the user is allowed to input sentence patterns as regular English and does not need to use "grammar" language or code words. Since the input of data is simple, it is a useful tool for teacher can customize this stack to fit the needs of his students or the student himself can experiment with his own sets of sentence patterns and substitution phrases. The user may alter the data without any knowledge of Hypertalk.

Random Sentence Production

When you start this Hypercard stack, it will open up to the title card which includes the title,

about the stack. Click on the *Start* button and you will be brought to the *Sentence Production* card (Fig. 1). Click the *Produce a Sentence* button. On the screen you will first see the sentence pattern which was randomly chosen from the *Sentence Pattern* card (Fig. 2). Next, you will see the words or phrases to be replaced (wildcards) followed by the words or phrases (substitutions) randomly chosen from their respective cards (Fig. 3) which will replace the wildcards Finally, the finished sentence will be displayed on the screen. If you have chosen the *Macintalk* option and if you have *Macintalk* in your system folder, you will hear the sentence spoken by Macintosh's speech synthesizer.

Customizing the Stack

Here is a step by step explanation of how to customize this stack for your own students.

1. Make a copy of the original stack. Go to the title card of the new stack and click the *Make a Blank Stack* button.

2. Next, go to the *sentence card* (Fig. 2) and input some sentences which your students should know.

I am John.
Are you John?
This is a pen.
These are pens.
John has a pen.
John can swim.
etc.

3. Next, enter the wildcards and the substitutions. Notice that in the above sentences we have three sentences with the word "John". So we may consider "John" to be a wildcard. Go to the substitution card (Fig. 3) and enter "John" in the *Wildcard* field. In the *Substitution* field of the same card, enter names of people (George, Jane, Mr. Jones, etc.) and singular phrases for people (a man, an American, a young girl, etc.).

Repeat the process with the following information. To make new data cards, choose New Card from the Edit menu.

Wildcard:	a pen
Substitutions:	an apple
	paper
	etc.
Wildcard:	pens
Substitutions:	books
	my magazines
	etc.
Wildcard:	swim
Substitutions:	run
	play baseball
	etc.
Wildcard:	can
Substitutions:	must
	should
	etc.

4. Now go to the *Sentence Production* card (Fig. 1) and try it out.

Substitution Within Substitutions

It is possible to have the computer substitute into the substitutions already made. For example, if "a pen" is substituted

by "a blue book" and if you have a card like the one below, the word "blue" will be substituted by one of the other colors. For this to work, the card "blue" must be after the card "a pen".

Wildcard:	blue
Substitutions:	yellow
	red
	etc.

More Ideas for Customizing

The most obvious customization is to use sentence patterns and vocabulary that the student already knows. The stack can be expanded by adding new sentence patterns and new phrases as the student learns them. Other possibilities are to limit the patterns while introducing new vocabulary or to limit the vocabulary while introducing new sentence patterns. It is possible to customize stacks using many different teaching approaches (grammar, functional, situational etc.). If the teacher is developing a lesson on survival English for travel, all phrases could be limited to those that might be used when traveling or those that include useful vocabulary for the traveler. For teachers developing a lesson on the use of modals, all sentence patterns should include a modal wildcard (e.g. must) and a card should be included in the stack which has all the modals being studied (e.g. can, should, etc.).

The Cards

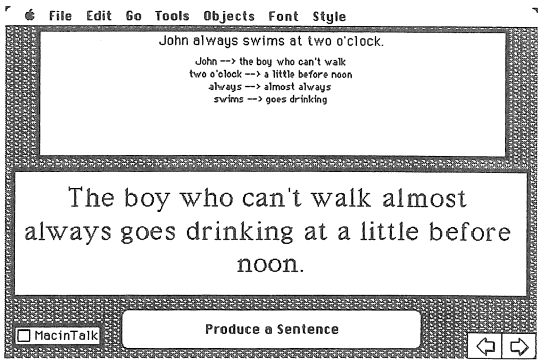

Figure 1. The Sentence Production Card is where the sentence are made. In the top field you can see what has been chosen. The bottom field shows the resulting sentence.

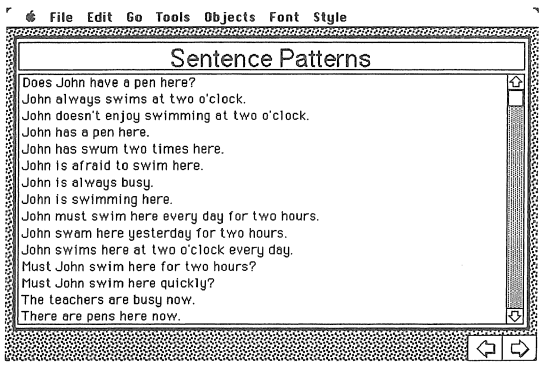

Figure 2. The Sentence Pattern card has all the sentence patterns that the stack uses.

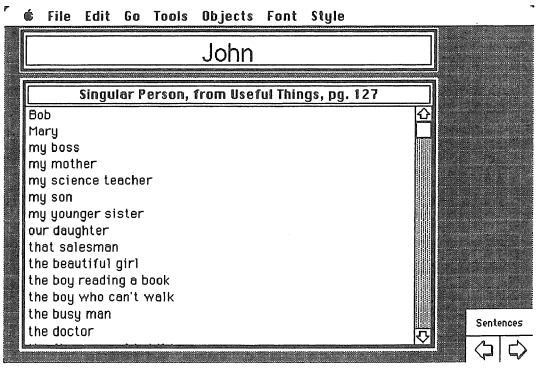

Figure 3. A Substitution Card. There is a card like this for every wildcard. Field 1 contains the wildcard, field 2 a short description, and field 3 the substitutions.

The Script

This is the background script of the "Sentence Production" Background.

```
--------------------------------------------------------------------------
--  Random Sentences Stack , BACKGROUND SCRIPT: Sentence Production Background
--    Copyright © 1993 by Charles I. Kelly, Nagoya, Japan
--
--  Variable List
--    WildcardList = a list of all Wildcards
--    CurrentWildcard = the current Wildcard which is being replaced
--    Substitution = the word/phrase being substituted in place of CurrentWildcard
--    SentencePattern = the sentence being worked on
--  Variables Used in Function Replace
--    BeginningOfString, LengthOfString
--
--  Contact Charles Kelly, Useful Things, PO 94, Higashi-ku, Nagoya, Japan 461
--  for a full working copy of the "Random Sentences" stack.
--------------------------------------------------------------------------

On OpenBackground
  global WildcardList
  ClearAllFields
  put "* Building the Wildcard List *"into bg fld "FinalSentence"
  show window "message" at 20,231
  --Find WildcardList
  put empty into WildcardList
  Repeat with x = 1 to (number of cds of bg "SubstitutionsBackground")
    get bg field "Wildcard" of cd x of bg "SubstitutionsBackground"
    put it
    put it & "," after WildcardList
    set cursor to busy
  end repeat
  hide msg
  RandomSentence
end OpenBackground

On RandomSentence
  global WildcardList
  set cursor to busy
  --Choose SentencePattern
  put any line of bg fld "SentencePatterns" of cd "SentencePatternCard" into
SentencePattern
  ClearAllFields
  put SentencePattern & return & return into bg fld "OriginalSentencePattern"
  --Make the Substitutions
  repeat with x = 1 to (the number of items of WildcardList)
    set cursor to busy
    put item x of WildcardList into CurrentWildcard
    get any line of bg fld "Substitutions" of cd CurrentWildcard
    put it into Substitution
    put Replace(CurrentWildcard,Substitution,SentencePattern) into SentencePattern
  end repeat
  --Capitalize the Sentence
  get chartonum (char 1 of SentencePattern)
  if it > 96 or it > 121 then subtract 32 from it
  put numtochar (it) into char 1 of SentencePattern
  --Print it on the Screen
  put SentencePattern into bg fld "FinalSentence"
  --Shall I Talk?
  if the hilite of bg btn "MacinTalk" is TRUE then
    --Randomly Choose the Rate & Pitch of the Talking Just For Fun
    put random(30) + 120 into rate
    put random(70) + 80 into pitch
    --Say the Sentence
    talk SentencePattern, rate,pitch
  else
    --Let the User Know the Sentence is Finished
    play flute tempo 500 "100 80"
  end if
```

```
end RandomSentence

function Replace CurrentWildcard,Substitution,SentencePattern
  --This function replaces the first occurrence of CurrentWildcard with Substitution into
SentencePattern
  --Is CurrentWildcard in SentencePattern?
  if CurrentWildcard is not in SentencePattern then
    return SentencePattern
    exit Replace
  end if
  set cursor to busy
  --Where in SentencePattern is CurrentWildcard?
  put offset(CurrentWildcard,SentencePattern) into BeginningOfString
  put length of CurrentWildcard into LengthOfString
  --Make Sure CurrentWildcard is not in the Middle of a Word
  if BeginningOfString <> 1 and char BeginningOfString - 1 of SentencePattern is not
space then
    return SentencePattern
  end if
  if char (BeginningOfString + LengthOfString) of SentencePattern is  space ¬
  or char (BeginningOfString + LengthOfString) of SentencePattern is  "." ¬
  or char (BeginningOfString + LengthOfString) of SentencePattern is  "?" then
    --It's OK to continue.
  else
    return SentencePattern
  end if
  --Put Substitution in place of CurrentWildcard.
  put Substitution into char BeginningOfString to ¬
  (BeginningOfString + LengthOfString - 1) of SentencePattern
  --Show the Progress on the Screen
  put CurrentWildcard && "-->" && Substitution & return after bg fld
"ComputerChosenSubstitutions"
  return SentencePattern
end Replace

on ClearAllFields
  --Clear All the Fields on the Screen
  repeat with x = 1 to 3
    put empty into bg fld x
  end repeat
end ClearAllFields
```

The background button "Produce a Sentence" includes this script.

```
on MouseUp
  RandomSentence
end MouseUp
```

The background field "Wildcard" of background "SubstitutionsBackground" includes this script.

```
on CloseField
  set the name of this card to bg fld "Wildcard"
end CloseField
```

There are other scripts included in the stack, mostly for aesthetic reasons. You should be able to reconstruct a similar stack using these scripts.