



# 單字複習程式

## 期末專題報告

機械3C

109303567 陳薇如



## 目的簡介

為了在短點時間內複習多益，將在大學期間遺忘的單字迅速找回，所以設計的一個單字複習程式。

由於機械系課業繁忙，所以需要一個高效率的複習方法。

因應個人習慣，所以具有筆記功能。並且單字庫以類別區分，以句子為依據記憶單字。

# GUI介紹



# 考試複習 TestReview

模擬多益考試 ReadingTest。

Word Reviewer

Test Review

Category Review

Google Translate

1 / 43

The \_\_\_\_ of the company made an announcement about the new product launch.

☒ president

☐ specialist

☐ operator

☐ employer

Answer

president

Note

System

l1

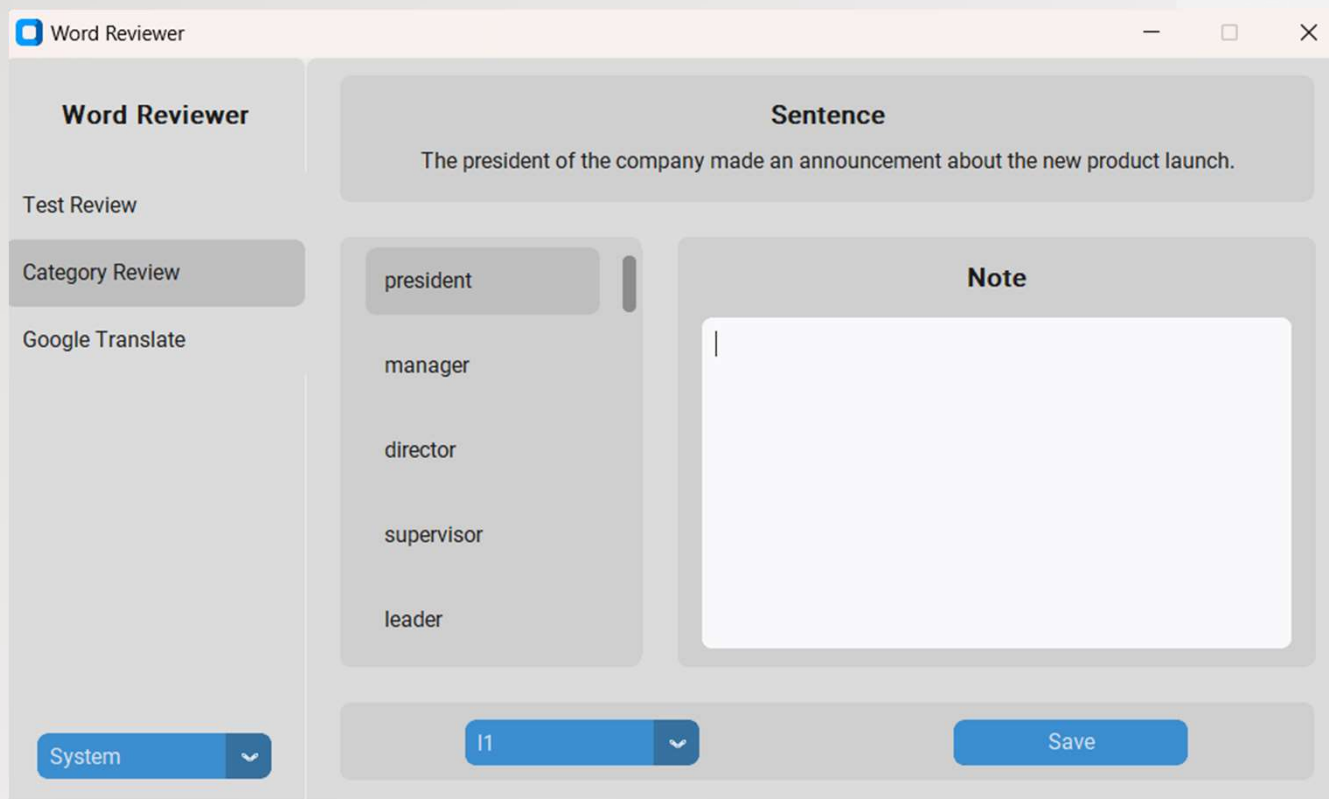
See Answer

Next

# 類別複習

## Category Review

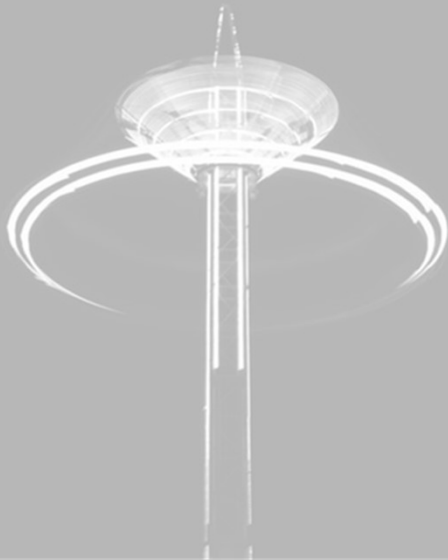
可以選擇某一個類別的單字，依序複習，同時也可以修改筆記。



The screenshot shows a web application titled "Word Reviewer". On the left is a sidebar with navigation links: "Word Reviewer", "Test Review", "Category Review" (which is highlighted), and "Google Translate". At the bottom of the sidebar is a "System" dropdown menu. The main content area is divided into three sections: "Sentence" at the top containing the text "The president of the company made an announcement about the new product launch.", a middle section with a list of roles (president, manager, director, supervisor, leader) where "president" is selected, and a "Note" section with a large text input area. At the bottom of the main area is a footer containing a dropdown menu showing "11" and a blue "Save" button.

# 單字搜尋 GoogleTranslate

因為不喜歡用中文意思記住單字，  
google translate 是很好的工具，  
提供相近詞彙及翻譯。



## 程式特色介紹



1. 介面乾淨整齊
2. 符合一般邏輯
3. 操作簡單
4. 超簡易更換字庫
5. 程式可讀性
6. 物件導向

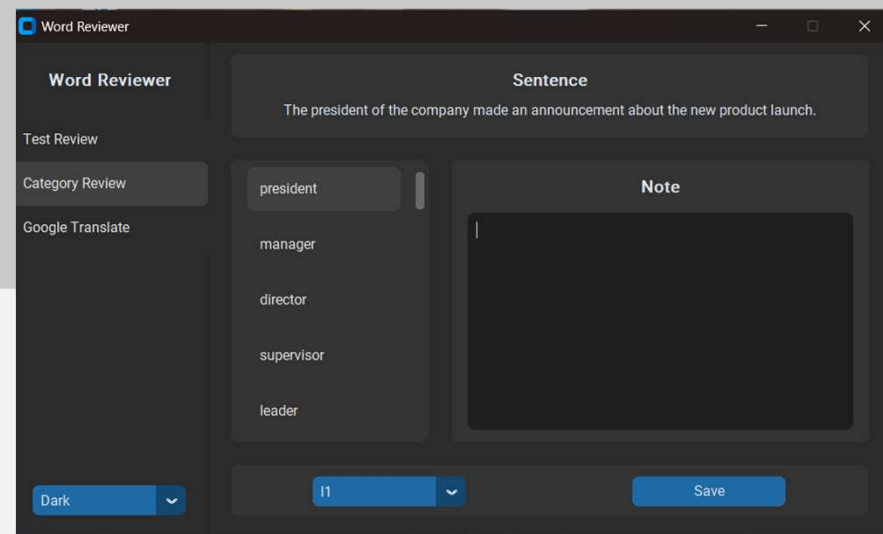
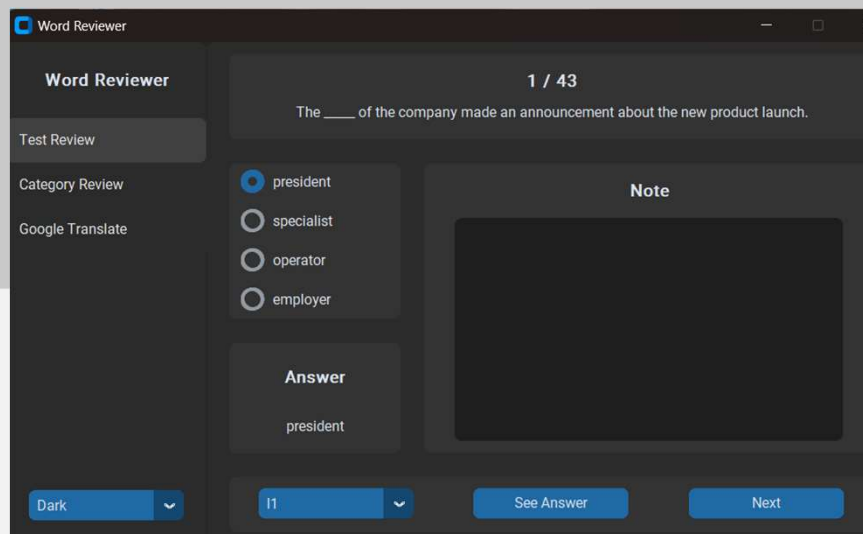




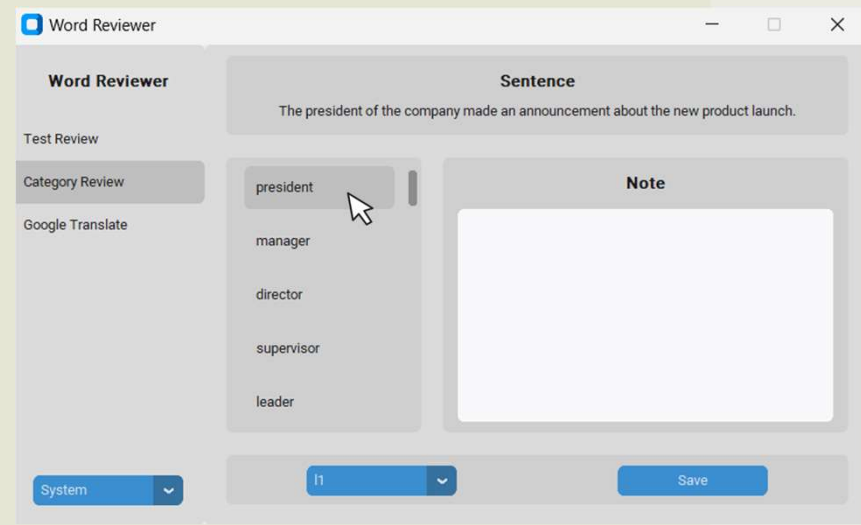
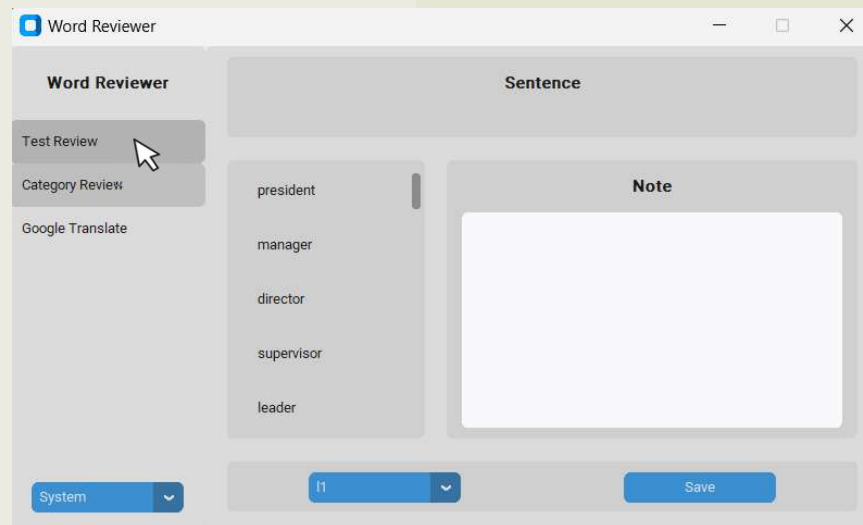
# 黑暗模式

## System light/dark

```
def appearance_mode_menu_event(self, new_appearance_mode):  
    ctk.set_appearance_mode(mode_string=new_appearance_mode)
```



滑鼠滑過變更顏色hover\_color/  
所在選項顏色fg\_color



## 滑鼠滑過變更顏色hover\_color/ 所在選項顏色fg\_color

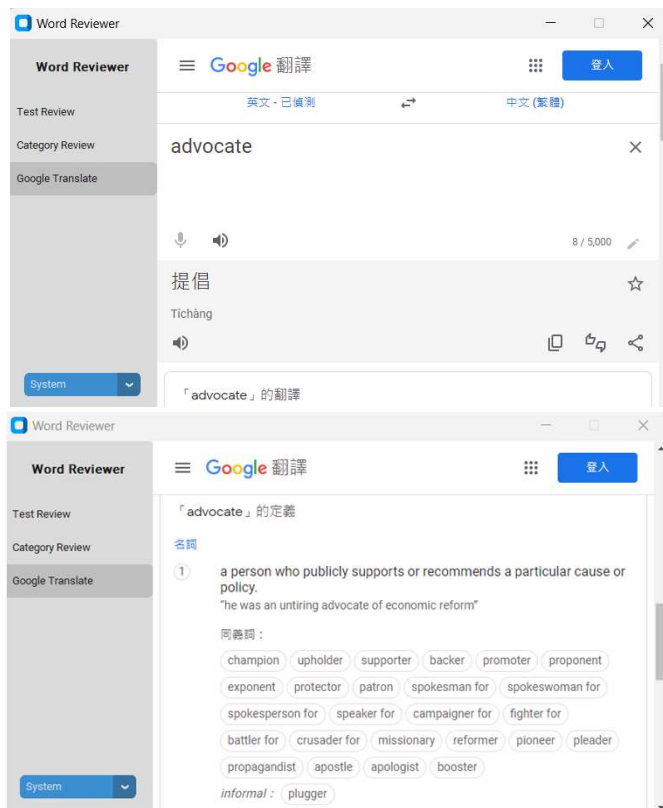
```
self.test_review_button = ctk.CTkButton(  
    master=self  
    , height=40  
    , border_spacing=10  
    , fg_color='transparent'  
    , hover_color=('gray70', 'gray30')  
    , text_color=('gray10', 'gray90')  
    , text='Test Review'  
    , command=self.test_review_button_event  
    , anchor='w'  
)
```

```
self.category_review_button = ctk.CTkButton(  
    master=self  
    , height=40  
    , border_spacing=10  
    , fg_color='transparent'  
    , hover_color=('gray70', 'gray30')  
    , text_color=('gray10', 'gray90')  
    , text='Category Review'  
    , command=self.category_review_button_event  
    , anchor='w'  
)
```

```
self.google_translate_button = ctk.CTkButton(  
    master=self  
    , height=40  
    , border_spacing=10  
    , fg_color='transparent'  
    , hover_color=('gray70', 'gray30')  
    , text_color=('gray10', 'gray90')  
    , text='Google Translate'  
    , command=self.google_translate_button_event  
    , anchor='w'  
)
```

```
def select_frame_by_name(self, name):  
    # Set button color for the selected button  
    self.test_review_button.configure(  
        fg_color=('gray75', 'gray25') if name == 'tr' else 'transparent'  
    )  
    self.category_review_button.configure(  
        fg_color=('gray75', 'gray25') if name == 'cr' else 'transparent'  
    )  
    self.google_translate_button.configure(  
        fg_color=('gray75', 'gray25') if name == 'gt' else 'transparent'  
    )
```

# 最強擴充單字庫GOOGLE TRANSLATE



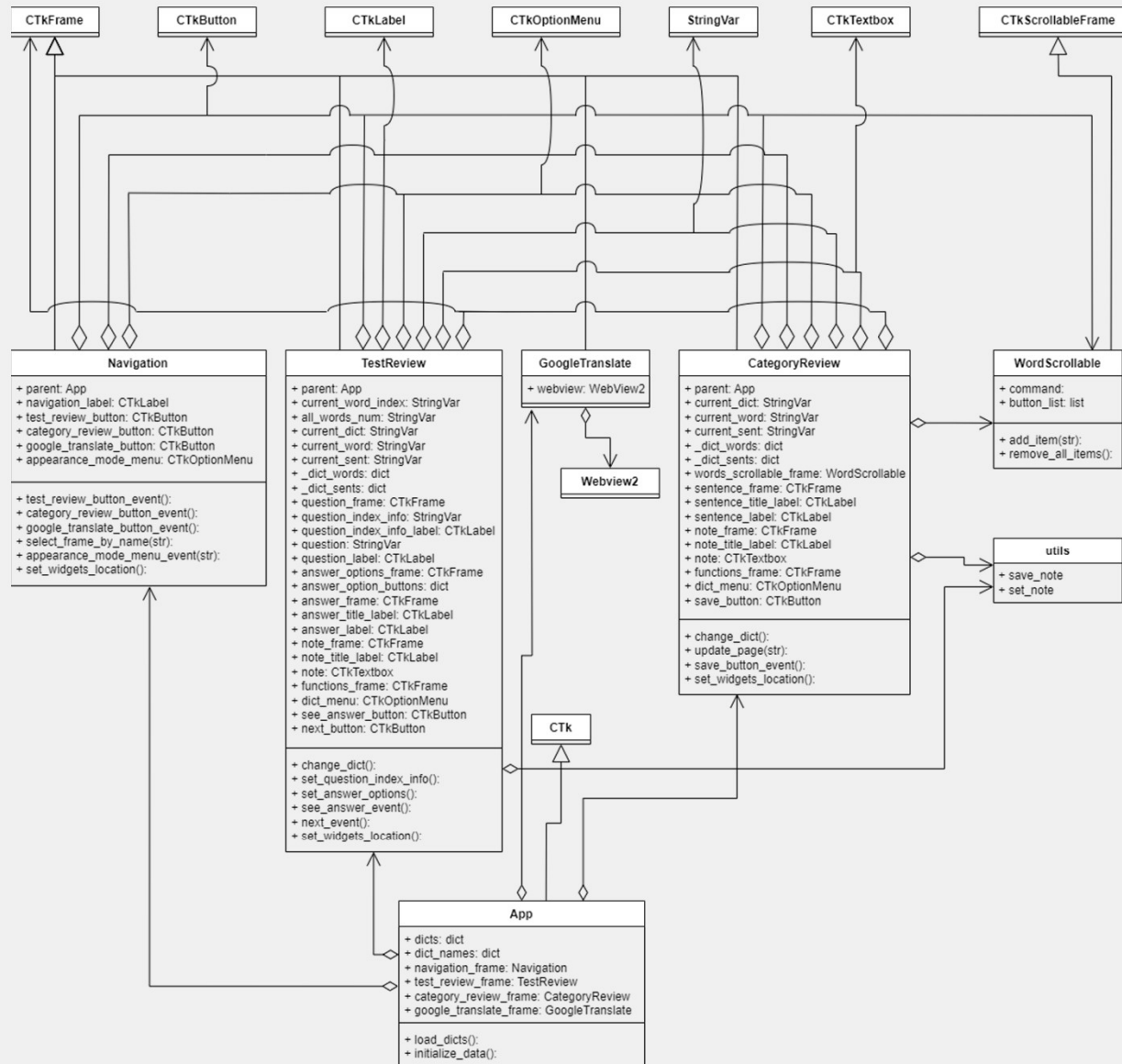
```
self.webview = WebView2(self, width=100, height=100)
self.webview.grid(row=0, column=0, sticky=ctk.NSEW)

url = 'https://translate.google.com.tw/?hl=zh-TW'
self.webview.load_url(url)
```

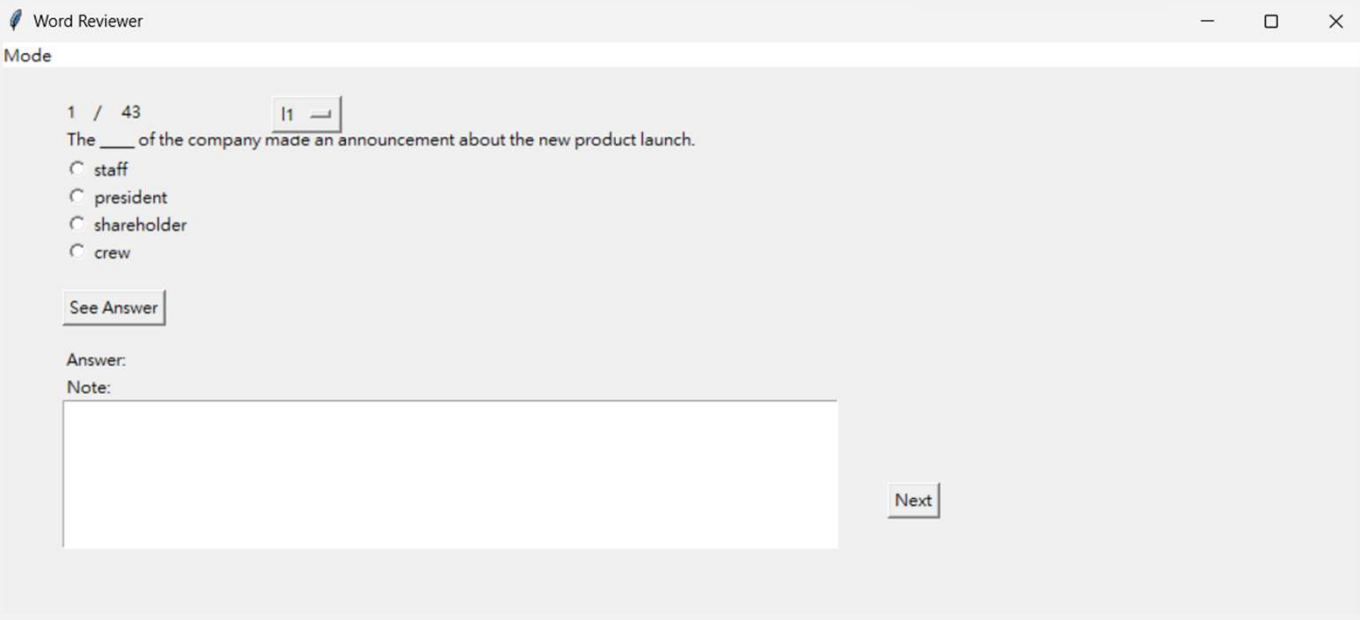


# 程式架構

## UML+MVC



UML



UML

- NumPy 教學 (19)+
- matplotlib 圖表 (29)+
- Tkinter 介面設計 (32)-
- Tkinter 教學導讀
- 建立 Tkinter 視窗
- Label 標籤
- Button 按鈕
- Radiobutton 單選按鈕
- Checkbutton 複選按鈕
- Entry 單行輸入框
- Text 多行輸入框
- Listbox 列表選擇框
- OptionMenu 下拉選單
- Scale 數值調整滑桿

## Scrollbar 滾動條 (捲軸)

Scrollbar 是 tkinter 裡與其他元件搭配的「滾動條 (捲軸)」，當某個元件的內容高度過長要捲動用者進行捲動瀏覽，這篇教學會介紹如何在 tkinter 視窗裡加入 Scrollbar 滾動條。

快速導覽：

- [視窗加入 Scrollbar 滾動條](#)
- [Text 多行輸入框加入 Scrollbar 滾動條](#)
- [Listbox 列表選擇框加入 Scrollbar 滾動條](#)
- [Canvas 加入 Scrollbar 滾動條](#)

- 上個主題
- [shlex](#) —— 简单的词法分析
- 下個主題
- [tkinter](#) —— Tcl/Tk 的 Python 接口
- 此頁面
- [回報錯誤](#)
- [顯示原始碼](#)

## 以 Tk 打造 GUI

Tcl/Tk集成到Python中已经有一些年头了。Python程序员可以通过 [tkinter](#) 包和它的扩展，[tkinter.tix](#) 模块和 [tkinter.ttk](#) 模块，来使用这套鲁棒的、平台无关的窗口工具集。

[tkinter](#) 包是使用面向对象方式对 Tcl/Tk 进行的一层薄包装。使用 [tkinter](#)，你不需要写 Tcl 代码，但你将需要参阅 Tk 文档，有时还需要参阅 Tcl 文档。[tkinter](#) 是一组包装器，它将 Tk 的可视化部件实现为相应的 Python 类。

[tkinter](#) 的主要特点是速度很快，并且通常直接附带在 Python 中。虽然它的官方文档做得不好，但还是有许多可用的资源，包括：在线参考、教程、入门书等等。[tkinter](#) 还有众所周知的较过时的外观界面，这在 Tk 8.5 中已得到很大改进。无论如何，你还可以考虑许多其他的 GUI 库。Python wiki 例出了一些替代性的 [GUI 框架和工具](#)。



Introduction

Color and Themes

Appearance Mode

Scaling

Packaging

CTkWidgets

CTkFrame

CTkButton

CTkLabel

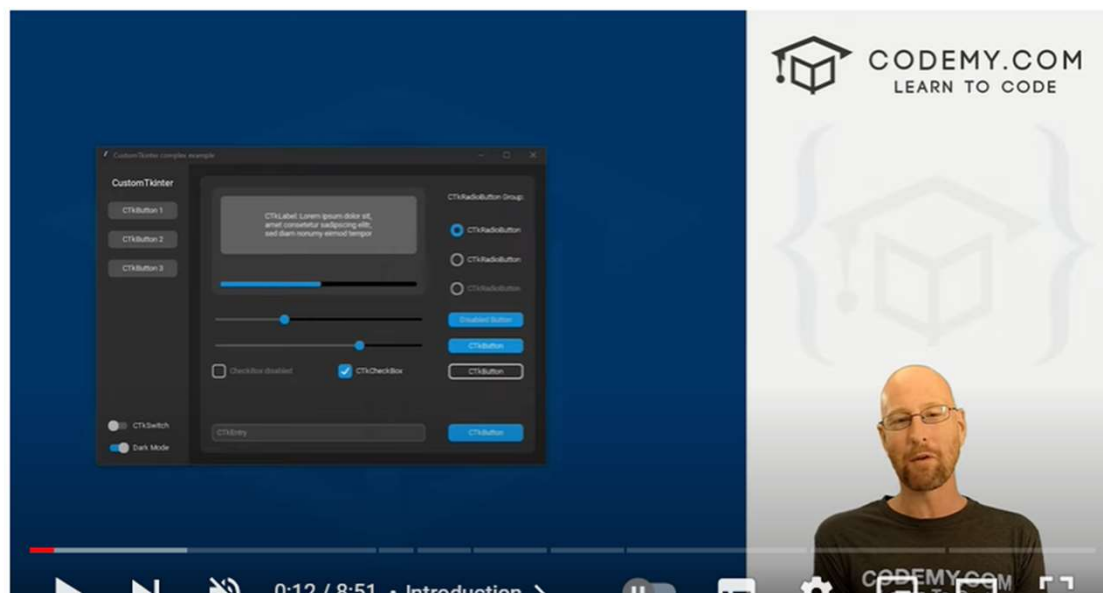
CTkOptionMenu

StringVar

CTkTextbox

CTkScrollableFrame

This is the official CustomTkinter documentation, where you can find detailed information on all



全部 「Codemy.com」上傳的影片 相關內容 >



Python Tkinter GUI 【Free】

Bro Code ✓  
觀看次數：19萬次 · 2 年前



Using tkinter with classes

Atlas  
觀看次數：3269次 · 5 個月前



Modern Graphical User Interfaces in Python

NeuralNine  
觀看次數：79萬次 · 6 個月前





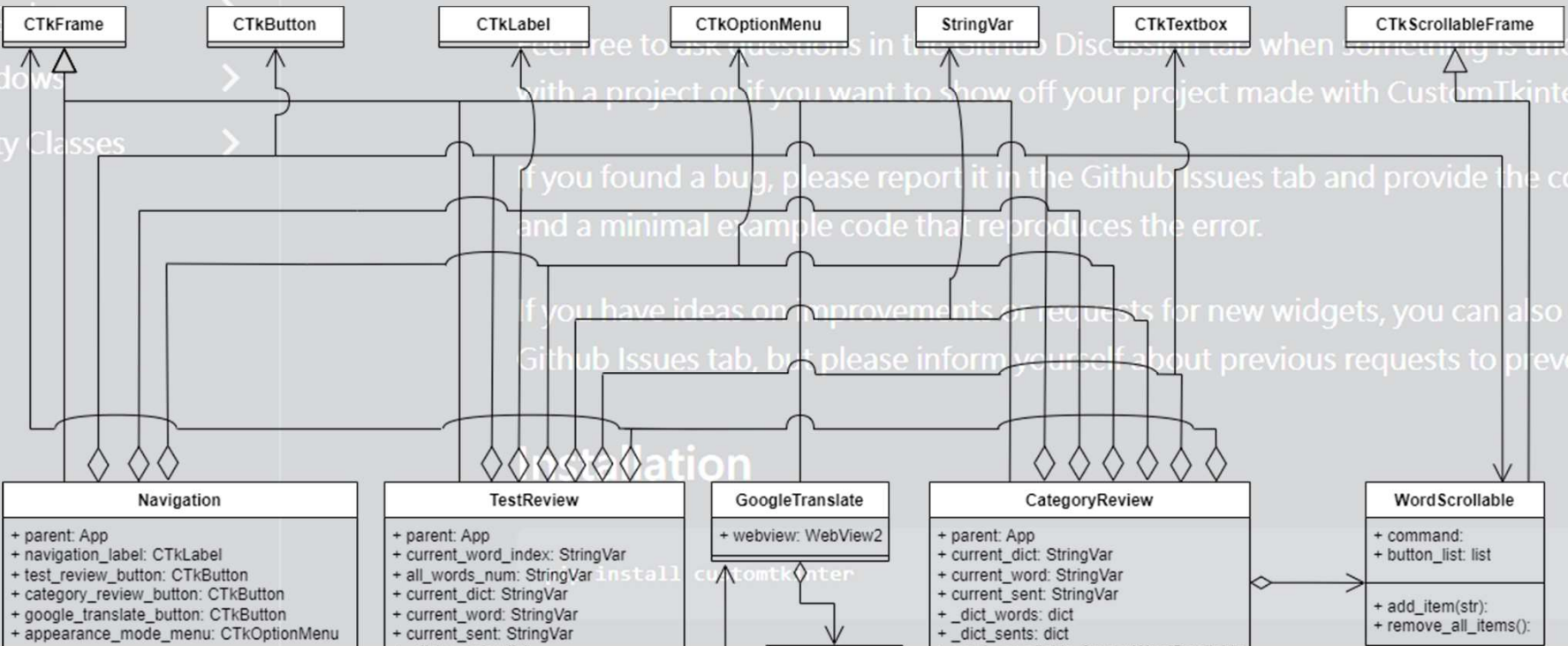
# Introduction

This is the official CustomTkinter documentation, where you can find detailed information on all available widgets and some more information on how the themes and the appearance mode work.

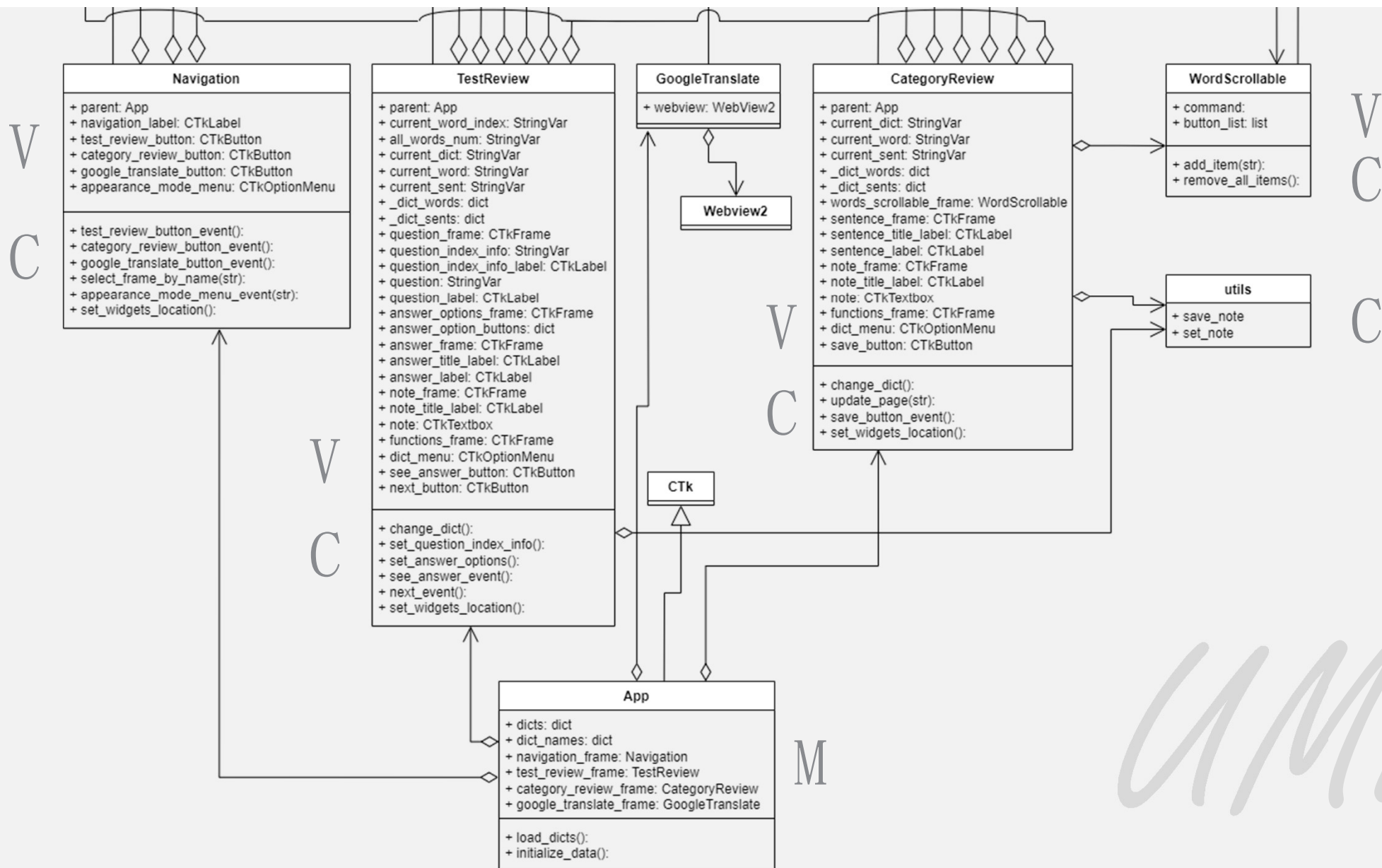
Feel free to ask questions in the Github Discussion tab when something is unclear, if you need help with a project or if you want to show off your project made with CustomTkinter.

If you found a bug, please report it in the Github Issues tab and provide the complete error message and a minimal example code that reproduces the error.

If you have ideas on improvements or requests for new widgets, you can also report these in the Github Issues tab, but please inform yourself about previous requests to prevent duplicates.



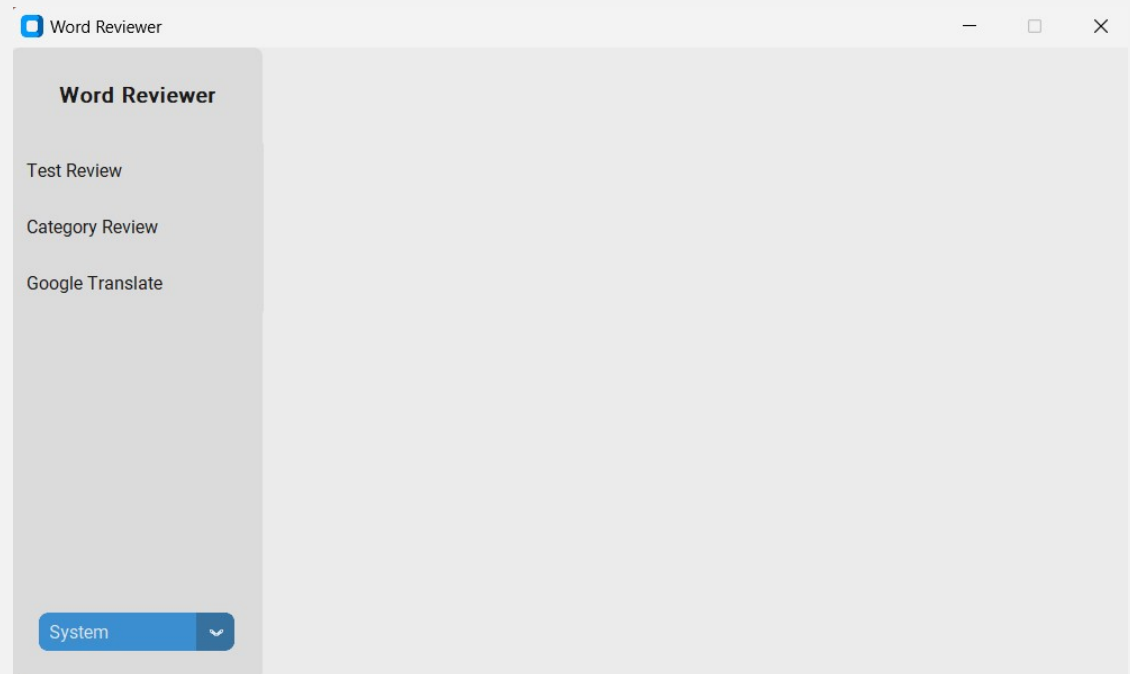
UML



UML

# Home Page

```
WordReviewer.py > ...
3  import os
4
5  from Navigation import Navigation
6  from TestReview import TestReview
7  from CategoryReview import CategoryReview
8  from GoogleTranslate import GoogleTranslate
9
10
11  class App(ctk.CTk):
12  >  def __init__(self): ...
41
42
43  >  def load_dicts(self): ...
64
65
66  >  def initialize_data(self): ...
86
87
88  if __name__ == '__main__':
89      app = App()
90      app.mainloop()
91
```



# Test Review Page

```
TestReview.py > ...
1 import customtkinter as ctk
2 import tkinter as tk
3 import random
4
5 from utils import save_note, set_note
6
7
8 class TestReview(ctk.CTkFrame):
9 > def __init__(self, parent): ...
143
144
145 > def change_dict(self, *args): ...
170
171
172 > def set_question_index_info(self): ...
178
179
180 > def set_answer_options(self): ...
199
200
201 > def see_answer_event(self): ...
203
204
205 > def next_event(self): ...
225
226
227 > def set_widgets_location(self): ...
```

The screenshot shows a window titled "Word Reviewer" with a sidebar on the left containing the following menu items: "Word Reviewer", "Test Review", "Category Review", and "Google Translate". The main content area displays "1 / 43" at the top right. Below this, a sentence reads: "The \_\_\_\_ of the company made an announcement about the new product launch." To the right of the sentence is a text area labeled "Note" with a vertical cursor. Below the sentence, there are four radio button options: "president" (selected), "specialist", "operator", and "employer". Below these options is a box labeled "Answer" containing the text "president". At the bottom of the window, there are four buttons: "System" (with a dropdown arrow), "11" (with a dropdown arrow), "See Answer", and "Next".

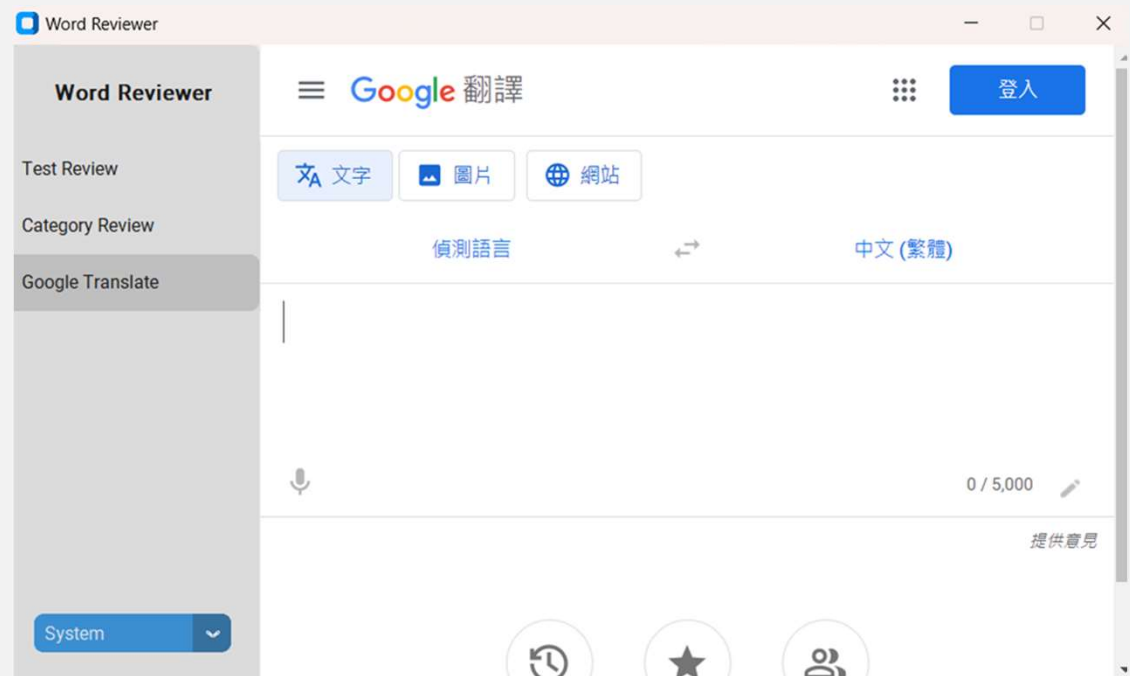
# Category Review Page

```
CategoryReview.py > CategoryReview > set_widgets_location
1 import customtkinter as ctk
2 import tkinter as tk
3
4 from utils import save_note, set_note
5 from WordScrollable import WordScrollable
6
7
8 class CategoryReview(ctk.CTkFrame):
9 > def __init__(self, parent):...
84
85
86 > def update_page(self, current_word_str=None):...
110
111
112 > def save_button_event(self):...
114
115
116 > def change_dict(self, *args):...
130
131
132 > def set_widgets_location(self):...
```

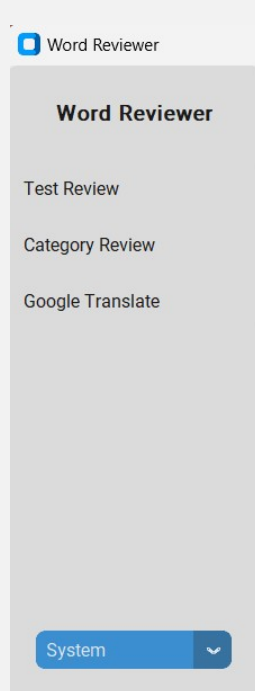
The screenshot shows a window titled "Word Reviewer". On the left is a sidebar with a "Word Reviewer" header and three menu items: "Test Review", "Category Review" (which is highlighted), and "Google Translate". The main area is divided into three sections. The top section, "Sentence", contains the text "The president of the company made an announcement about the new product launch." The middle section, "Note", contains a large text input field with a cursor. To the left of this field is a vertical list of roles: "president", "manager", "director", "supervisor", and "leader", with "president" selected. The bottom section contains three controls: a "System" dropdown menu, a "11" dropdown menu, and a "Save" button.

# GoogleTranslate Page

```
GoogleTranslate.py > ...
1  import customtkinter as ctk
2  from tkwebview2.tkwebview2 import WebView2
3
4
5  class GoogleTranslate(ctk.CTkFrame):
6      def __init__(self, parent):
7          super().__init__(parent)
8
9          self.parent = parent
10
11          # Set grid layout
12          self.rowconfigure(0, weight=1)
13          self.columnconfigure(0, weight=1)
14
15          # browser frame
16          self.webview = WebView2(self, width=100, height=100)
17          self.webview.grid(row=0, column=0, sticky=ctk.NSEW)
18
19          url = 'https://translate.google.com.tw/?hl=zh-TW'
20          self.webview.load_url(url)
21
```



# Navigation frame / Utils / WordScrollable



```
Navigation.py > ...
1 import customtkinter as ctk
2
3
4 class Navigation(ctk.CTkFrame):
5 > def __init__(self, parent): ...
59
60
61 > def test_review_button_event(self): ...
63
64
65 > def category_review_button_event(self): ...
67
68
69 > def google_translate_button_event(self): ...
71
72
73 > def select_frame_by_name(self, name): ...
106
107
108 > def appearance_mode_menu_event(self, new_appearance_mode): ...
110
111
112 > def set_widgets_location(self): ...
124
```

```
utils.py > set_note
1 import tkinter as tk
2 import json
3
4
5 > def save_note(frame): ...
21
22
23 > def set_note(frame, clear=False):|...
```

```
WordScrollable.py > ...
1 import customtkinter as ctk
2
3
4 class WordScrollable(ctk.CTkScrollableFrame):
5 > def __init__(self, master, command=None, **kwargs): ...
12
13
14 > def add_item(self, word_str): ...
36
37
38 > def remove_all_items(self): ...
45
```



## 花費時間與進度

時間	進度	小時
5/05第一周	舊介面GUI+google translate頁面	10
5/12第二周	test review頁面+部分category頁面	10
5/19第三周	完成category頁面+修改架構	15
5/26第四周	全部改成CTK+排版	12
6/02第五周	製作ppt	5





## 參考文獻

- tkinter —— Tcl/Tk 的 Python 接口 —— 可选配置项、部件与变量的关联、窗口管理器

<https://docs.python.org/zh-tw/3/library/tkinter.html>

- tkinter.ttk —— Tk 主題小部件 —— Ttk 樣式

<https://docs.python.org/3/library/tkinter.ttk.html>

- CustomTkinter Documentation

<https://customtkinter.tomschimansky.com/documentation/>

- CustomTkinter Tutorial

<https://customtkinter.tomschimansky.com/tutorial/>

- CustomTkinter GitHub

<https://github.com/TomSchimansky/CustomTkinter>



# 參考文獻



<https://geek-docs.com/tkinter/tkinter-samples>

- 使用 `Label.configure()` 动态更改 Tkinter Label 文本
- 使用Python Tkinter创建Combobox小部件
- 如何在Tkinter窗口中打开网站？



– Tracing Tkinter variables in Python

<https://www.geeksforgeeks.org/tracing-tkinter-variables-in-python/>

– Python Tkinter Grid布局管理器详解

<https://www.cnblogs.com/ruo-li-suo-yi/p/7425307.html>

– tkinter浏览器组件

[https://blog.csdn.net/tinga\\_kilin/article/details/108291802](https://blog.csdn.net/tinga_kilin/article/details/108291802)

– STEAM學習教育網

<https://steam.oxxostudio.tw/category/python/tkinter/scrollbar.html>

– Getting a value from Tkinter OptionMenu in Python

<https://stackoverflow.com/questions/46831855>

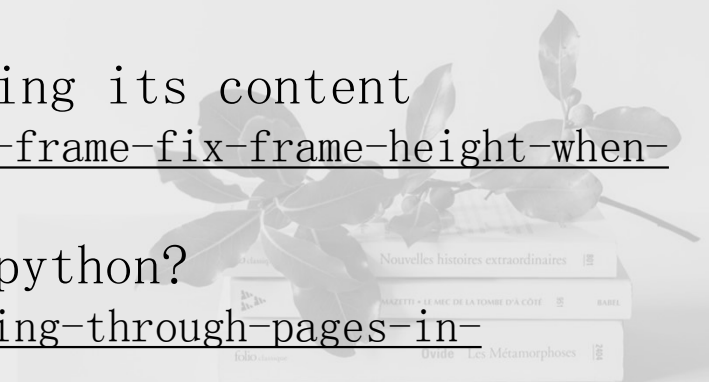
– tkinter frame: fix frame height when changing its content  
(<https://stackoverflow.com/questions/28653312/tkinter-frame-fix-frame-height-when-changing-its-content>)

– Navigating through pages in customtkinter python?

(<https://stackoverflow.com/questions/74739063/navigating-through-pages-in-customtkinter-python>)

– Tkinter button expand using grid

(<https://stackoverflow.com/questions/53073534/tkinter-button-expand-using-grid>)



T h a n k  
—  
Y o u

END