FFI LIBRARY MANAGEMENT SYSTEM

A guide to using the library management interface

ABSTRACT

The FFIreland Library System Application functions as a management system to keep track of the book inventory of our library.

EyeCode4You
Systems Administrator

High Level Information

The "FFI Library App" was developed with Python with the aim of creating a comprehensive and easy-to-use management interface for our library services.

***Python Dependencies:**

- tkinter

- sqlite3 (Intrinsic)

- docxtpl

- docx2pdf

- jinja2

The main structure of the app is as follows:

- Book data is contained within SQLite3 local database file

- This database is loaded into Python GUI app (TKinter)

- Python GUI app displays database entries with functionality to:

    - Search through database

    - Update, Add, and Delete entries

    - Export data from database to PDF file for sharing (Web, email, etc...)

    - Export data to html file

Program consists of various Python scripts and resource files:

- ***library_gui.py*** (Main Program): Displays Python GUI for interacting with database

- ***init_libgui_db.py***: Creates the initial database file for use within main program.

- ***export_docx_pdf.py***: Convert library database to pdf

- export_html.py: Convert library database to html

- ***schema.sql:*** SQL structure of database

- ***book_data.txt:*** txt file of initial book list, used in ***init_libgui_db.py*** to create database

- ***book-list-template.docx***: Word doc template for formatting PDF created

Example Run-Through of Program

The interface is divided into 3 parts: Book List, Options, and Book Data

FFIreland Library System

Book List

ID	Book Title	Book Author	Availablity
1	Owls	Paul Sterry	yes
2	Irish Garden Vol 13	Mar 2004	yes
3	Crann Spr/Sum	2018	yes
4	Wildlife of Briton 3	N/A	yes
5	Irish Wildlife Vol 2	2019	yes
6	Irish Wildlife Winter	2009	yes
7	Dried Flower Ideas	N/A	yes
8	The Look of the Century	Michael Tambini	yes
9	Jungles	Frans Lanting	yes
10	The Illustrated Book of Birds	Octopus	yes
11	Geldof in Africa	BBC	yes
12	Canadian Wilderness	Reader's Digest	yes
13	Yorkshire Dales	Guide	yes
14	Heritage Outlook	2010	yes

Options

Search: [   ] [Search] [Clear]   Options: [Export as PDF]

Book Data

Book ID: [   ]

Book Title: [   ]

Book Author: [   ]

Availability: [   ]

[Update]   [Add New]   [Delete] [Save Changes]

Double-Clicking an entry populates the Book Data fields

ID	Book Title	Book Author	Availablity
70	Butterflies and Moths	I. Novak	yes
71	Living Downstream	Sandra Steingraber	yes
72	Protecting our World	Usborne	yes
73	Herbaceous Perennials	David Squire	yes
74	The Life of Birds	David Attenborough	yes
75	Illustrated Encyclopedia of Butterflies	N/A	yes
76	Growing Broadleaves	Padraig Joyce	yes
77	Riding the Dragan	Jack Doyle	yes
78	Out of the Darkness	Chris Ferris	yes
79	Once upon a Planet	Jonathan Porrit	yes
80	One Thousand Chestnut Trees	Mira Stout	yes
81	Partners, Pests, and Parasites	Hilda Simon	yes
82	Seeing the Ocean Through the Trees	N/A	yes
83	Sustaining the Forests of the Pacific	N/A	yes

Options

Search: [   ] Search Clear Options: Export as PDF

Book Data

Book ID: 74

Book Title: The Life of Birds

Book Author: David Attenborough

Availability: yes

Update   Add New   Delete   Save Changes

SEARCHING: To search for a specific book, enter its title and click the search button. To clear the filtered view, press the clear button.

UPDATING: Double-click the entry to change

Fill the book data entries with updated information and select "Update" (Note: ID cannot be changed)

Once the update is confirmed you will see the updated entry in Book List

FFIreland Library System

Book List

ID	Book Title	Book Author	Availablity
290	Native American Songs & Poems	Dover	yes
291	Astrobiology	Andrew May	yes
292	The Vikings	Jonathan Clements	yes
293	The Keelings Book of Fruit	Keelings	yes
294	Organic Gardening Techniques	Nick Hamilton	yes
295	The Rock & Water Garden Expert	D. G. Hessayon	yes
296	Your Gardening Questions Answered	Reader's Digest	yes
297	Grow Your Own	Marshall Cavendish	yes
298	Successful Gardening 1	N/A	yes
299	Successful Gardening 5	N/A	yes
300	The Gardening Year	Caxton	yes
301	Empowering Communities	The Cavan Centre	yes
302	Seeing the Wood and the Trees	Forest Friends Ireland	yes
303	The Universe-new text	new-text	yes

Options

Search: [ ] Search Clear   Options: Export as PDF

Book Data

Book ID: 303

Book Title: The Universe-new text

Book Author: new-text

Availability: yes

Update   Add New   Delete   Save Changes

ADDING: To add a new entry to the list, fill in details in Book Data section and select "Add New" button. The newly created entry will be added to the end of the list. (Note: ID is incremented from current highest in list and cannot be changed – can be left blank)

DELETING: Double-click the entry to delete and select "Delete" button

SAVING CHANGES: Any changes made within this interface need to be saved before exporting or closing the application!!!

| | FFIreland Library System | | | — □ ✕ |

Book List

ID	Book Title	Book Author	Availablity
290	Native American Songs & Poems	Dover	yes
291	Astrobiology	Andrew May	yes
292	The Vikings	Jonathan Clements	yes
293	The Keelings Book of Fruit	Keelings	yes
294	Organic Gardening Techniques	Nick Hamilton	yes
295	The Rock & Water Garden Expert	D. G. Hessayon	yes
296	Your Gardening Questions Answered	Reader's Digest	yes
297	Grow Your Own	Marshall Cavendish	yes
298	Successful Gardening 1	N/A	yes
299	Successful Gardening 5	N/A	yes
300	The Gardening Year	Caxton	yes
301	Empowering Communities	The Cavan Centre	yes
302	Seeing the Wood and the Trees	Forest Friends Ireland	yes
303	The Universe-new text	new-text	yes

Options

Search: [   ] [Search] [Clear] Options: [Export as PDF]

Book Data

Book ID: 304

Book Title: Newly Added Book

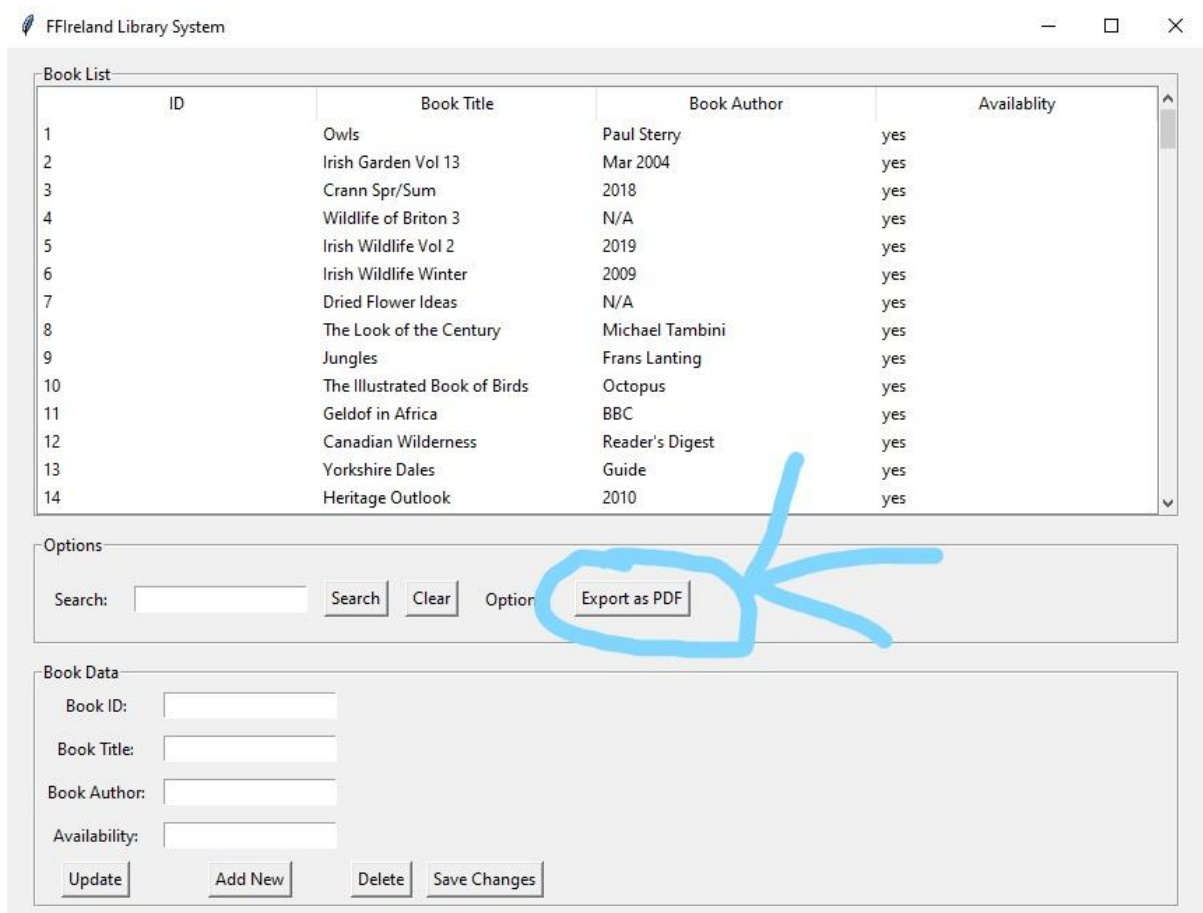Book Author: Giuseppe Gillespie

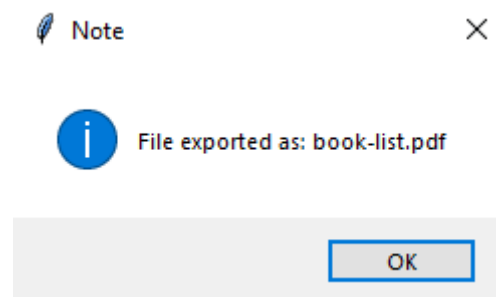Availability: yes

[Update] [Add New] [Delete] [Save Changes]

EXPORTING TO PDF: To export all data from the database to a PDF file, ensure all changes have been made & saved and select "Export as PDF"

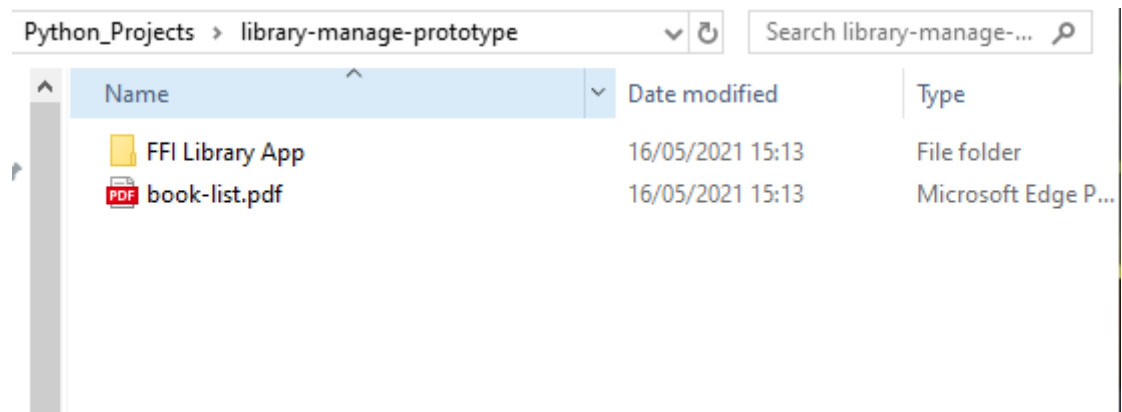After a second you should get a success message:

Browse to the application directory(One above the program's files) to retrieve the created PDF file:

Forest Friends Ireland Library Book List
Sun May 16 17:30:34 2021

BOOK ID	BOOK TITLE	BOOK AUTHOR	AVAILABLE?
1	Owls	Paul Sterry	yes
2	Irish Garden Vol 13	Mar 2004	yes
3	Crann Spr/Sum	2018	yes
4	Wildlife of Briton 3	N/A	yes
5	Irish Wildlife Vol 2	2019	yes
6	Irish Wildlife Winter	2009	yes
7	Dried Flower Ideas	N/A	yes
8	The Look of the Century	Michael Tambini	yes
9	Jungles	Frans Lanting	yes
10	The Illustrated Book of Birds	Octopus	yes

ADDITIONAL INFO 22/05/2021

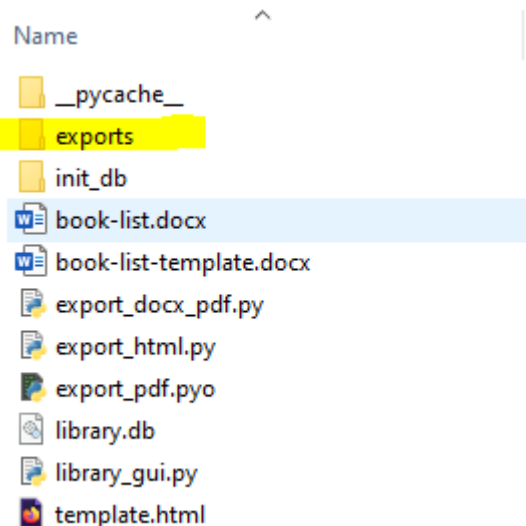**Clear Button**

Button to clear all entries

Export Options

Options to export database data as PDF (Requires Microsoft Word) or HTML (No requirement), exports are stored in "*exports*" folder in program directory.

Docx Template Structure

Forest Friends Ireland Library Book List
{{datetime}}

BOOK ID	BOOK TITLE	BOOK AUTHOR	AVAILABLE?
{%tr for item in table_contents %}			
{{item.index}}	{{item.title}}	{{item.author}}	{{item.available}}
{%tr endfor %}			

HTML Template Structure

```html
1  <!DOCTYPE html>
2  <html>
3  <head lang="en">
4      <meta charset="UTF-8">
5      <title>{{ title }}</title>
6      <link rel="stylesheet" type="text/css" href="style.css">
7      <link rel="stylesheet" href="https://fonts.googleapis.com/css?family=Sofia">
8  </head>
9
10 <body>
11     <img src="owl-47.png">
12     <h2>Forest Friends Ireland Library List<br>{{ datetime }}<br>Press Ctrl + F to search</h2>
13     <table style="width:80%; margin:auto;">
14         <tr class="t_headers">
15             <th>Book ID</th>
16             <th>Book Title</th>
17             <th>Book Author</th>
18             <th>Available?</th>
19         </tr>
20         {% for item in table_contents %}
21         <tr>
22             <td>{{item.index}}</td>
23             <td>{{item.title}}</td>
24             <td>{{item.author}}</td>
25             <td>{{item.available}}</td>
26         </tr>
27         {% endfor %}
28     </table>
29 </body>
30 </html>
```