Building Interactive PDF documents for assessments

Clement Onime

Information and Communication Technology Section

ICTP

Conference on Open-source tools for enhancing teaching, learning and research in Science, Technology, Engineering and Mathematics (STEM).
UNAH, Tegucigalpa, Honduras – April 11th, 2014

Overview

- Introduction
- PDF viewers
- Building PDF
- Implementing an Examination
- Demo
- Conclusion

Introduction

- The Portable Document Format
  - Started by Acrobat in 1991, Free in 1993 and open standard in 2008, some parts still patented.
- Focus on Portability
  - Independence from Hardware, operating Systems, and application software
- Features
  - Password protection, embed audio & video, interactive and forms and 3D since 2004

PDF viewers

- Acrobat Reader by Adobe - Official free reader since 1993
  - Supports all types, formats and technologies
  - *For Windows, Linux, Macs & Android , iOS & Blackberry*
- Others
  - Implement most types, format and technologies
  - Forms not well supported, 3D is not supported, Adobe JavaScript is not supported
- Example (3D)
  - http://www.tug.org/texshowcase/Laurana.pdf

Building PDF documents

- Basic documents
  - Available from most word processing/office application software.
  - Virtual printer drivers, supporting any document that may be printed
- Advanced features
  - Forms
    - Acrobat Writer
    - LibreOffice

Creating forms in LibreOffice

– Create a normal document containing your test questions as usual.

– Open the document in Libreoffice writer

- Enable Toolbars for forms (View -- Toolbars – "Form Control" and "Form Design").

- Simply drag-and-drop various controls to right location.

  – Right click on each control and set options such as length, name, etc.

- To save Use File -- Export as PDF make sure "Create PDF Form is selected" and set "Submit Format" to PDF

Notes

Objects

- Text boxes
- Check boxes
- Lists
- Buttons
- Labels
- Radio button
- Date and time
- Etc..

Submission

- Formats
  - FDF
  - **PDF**
  - HTML
  - XML
- Note:
  - *Not well supported by official Acrobat PDF viewer earlier than Acrobat XI.*
  - Resulting PDF maybe e-mailed or transferred as needed.

Conclusion

- PDF saving works best with official reader version XI (11) and above as well as non-official viewers.
    - More sophisticated submission available when using Adobe JavaScript, e.g direct e-mail, database entry upload:
    - Complex Scientific/mathematical equations also possible. See
        - http://www.tug.org/texshowcase/macqtexDemo.pdf