

Protein PDF (PPDF) reader

using Android

Biomedical Databases

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Resources Contribution

- Two open source applications:
 - MuPDF reader
 - ESMol protein viewer

PPDF reader

- Initiates from 'Downloads' folder in /sdcard/
- Functionalities:
 - Finds all hyperlinks
 - When function selected → hyperlinks enabled
 - Text selection
 - Amplified text → Raw text
 - Search Function

Protein hyperlinking

- Finds in PDF file all text words relevant to:
 - Proteins' names
 - Proteins' pdb files
- Using HashMapping
 - connects the above two with the URL link for the relevant pdb file download
 - Hyperlinks the above names

Hyperlinks function

- If hyperlink is a download link of a pdb file
 - Opens ESMol
- Else
 - opens hyperlink with preselected Application

ESMol

- Features functionalities:
 - Rotation/Translation/Zooming of the model by finger
 - Representations using:
 - Lines
 - Sticks
 - Spheres (van der Waals radius)
 - Alpha carbon traces
 - Thick ribbons
 - Thin ribbons
 - Strands
 - B factor tubes
 - Nucleic acid ladders
 - Nucleic acid lines
 - Solvent 'stars'
 - Smoothing of beta sheets
- Coloring:
 - By chain
 - By secondary structure (when defined in SHEET/HELIX records)
 - By Elements
 - Gradation (chainbow)
 - Temperature factor (B factor)
 - Polar/Nonpolar
- Crystallographies:
 - Using unit cell display
 - Showing crystal packing (when defined in REMARK section)
 - Displaying biological assembly (when defined in REMARK section)

Future Work

- Creation of a new button for the Protein Viewer
- Color differently new button
- Use NDKmol instead of ESMol