

Sub-cellular localization in a cell

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“To visualize biological cells and highlight by a user selected sub-cellular compartments in a way that they stand out from the un-selected ones”

GUI mockups I

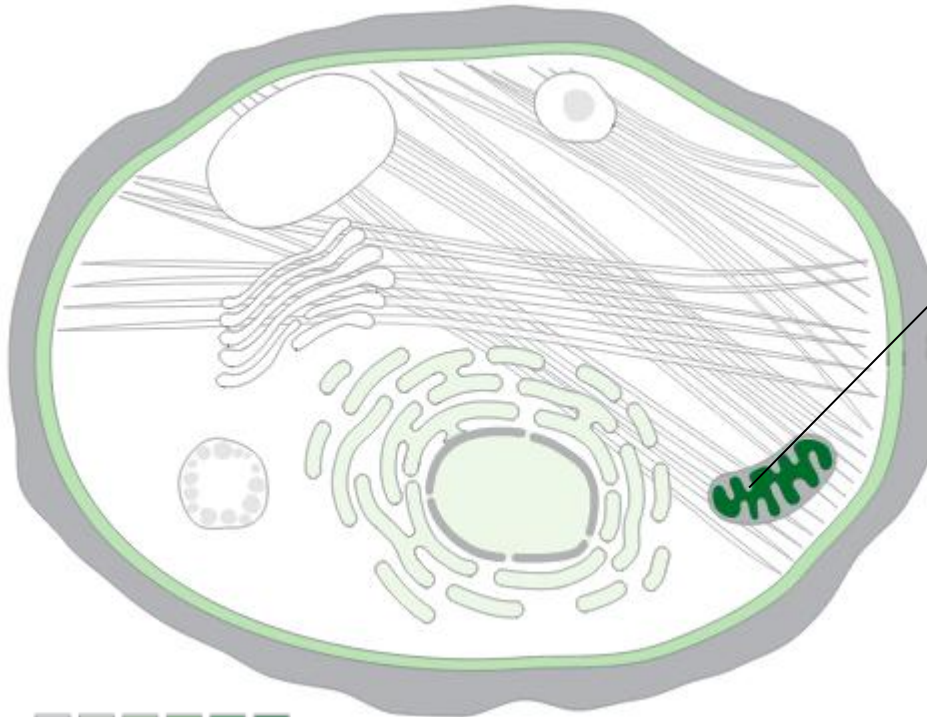
Please upload your "txt" file

/protein.txt

Browse

Upload

Archaea / Bacteria / **Eukaryota**



Prot 1
Prot 2
Prot 3
Prot 4

Min Max
Number of Proteins

GUI mockups II

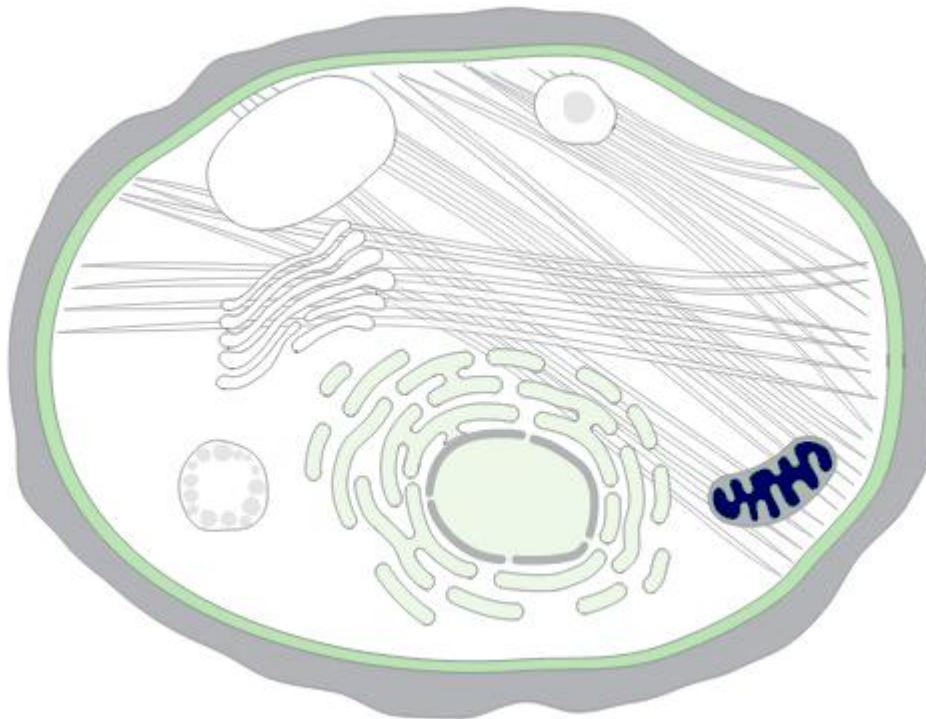
Please upload your "txt" file

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Browse

Upload

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Min  Max
score

- User experience
 - Interactivity
 - Easy identification of the number of proteins in cell compartment
 - Good visualization of data
- Functionality
 - Parsing the user input “txt” file
 - Mapping the file content into visualization
- Features
 - Good color scheme to highlight :
 - Number of proteins in a compartment
 - Score of each protein (confidence)

- Expected technical difficulties
 - Wrong file input format
 - Correct identification of localization
- Libraries
 - D3 - Zoomdata
 - <https://live.zoomdata.com/zoomdata/visualization#51db7ad4e4b04caf9ab346db-51db7ad4e4b04caf9ab346d5>

- Remarks about input format
 - Text file must contain proteins of only one type of cell
 - Text file format :
 - Protein name
 - Score (certainty of existence of particular protein within a cell compartment)
 - Localization (component)
 - Gene Ontology Terms

| Protein id | Score | Localization | Gene Ontology Terms |
|----------------------|-------|--------------|--------------------------------|
| sp P34795 G6PI_ARATH | 100 | cytoplasm | cytosol GO:0005829(IDA) |
| sp O24621 SIGC_ARATH | 30 | chloroplast | chloroplast GO:0009507(IDA) |

1

- Researching Biology literature in order to identify proteins belonging to different cells (Archaea / Bacteria / Eukaryota)

2

- Identify existing tools or libraries which can help us in visualizing input data

3

- Parsing input file

4

- Visualization by :
 - Grouping proteins based on localization in the cell component
 - Updating cell's compartments based on particular protein's score (Confidence)

5

- Development of deployable component for reuse by BioJS

Thank you for your attention