

22/10/2020
V1

PRD Connectomes

Etude de l'existant

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<https://en.wikipedia.org/wiki/Connectome>

Plan

1. Aspect visuel
2. Aspect structurel
3. Aspect technique
4. Formats d'entrées
5. Conclusion

1. Aspect visuel

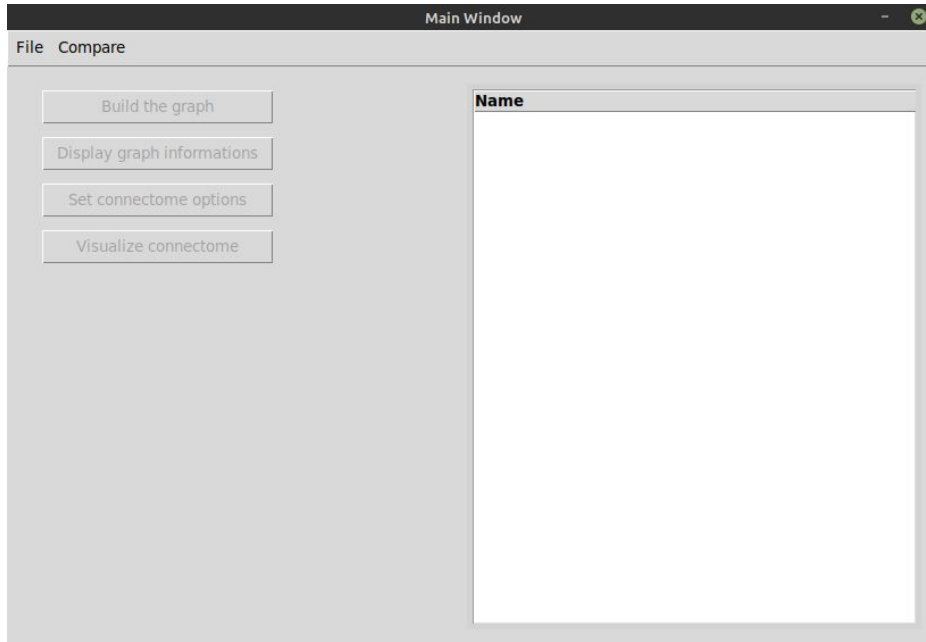


Figure 2: Ecran d'accueil

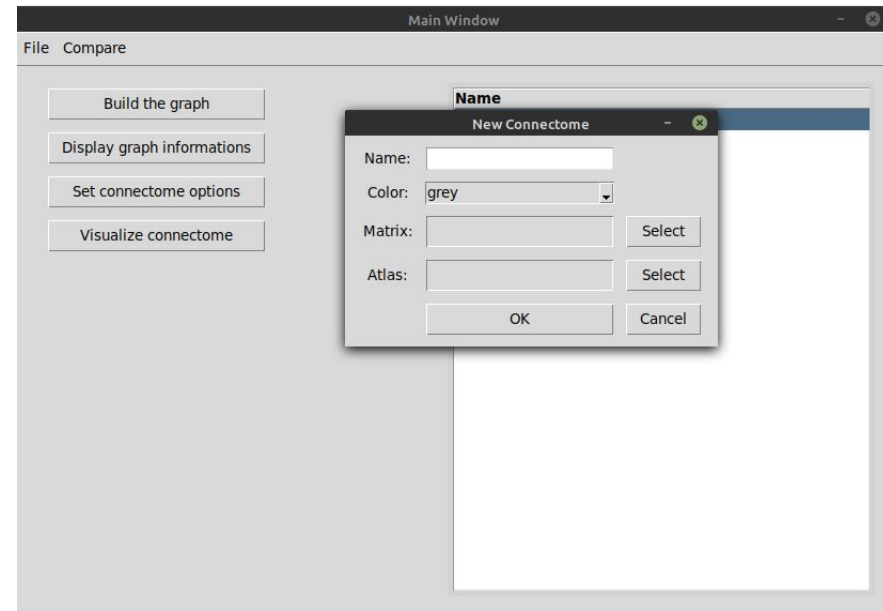


Figure 3: Création d'un nouveau connectome

1. Aspect visuel

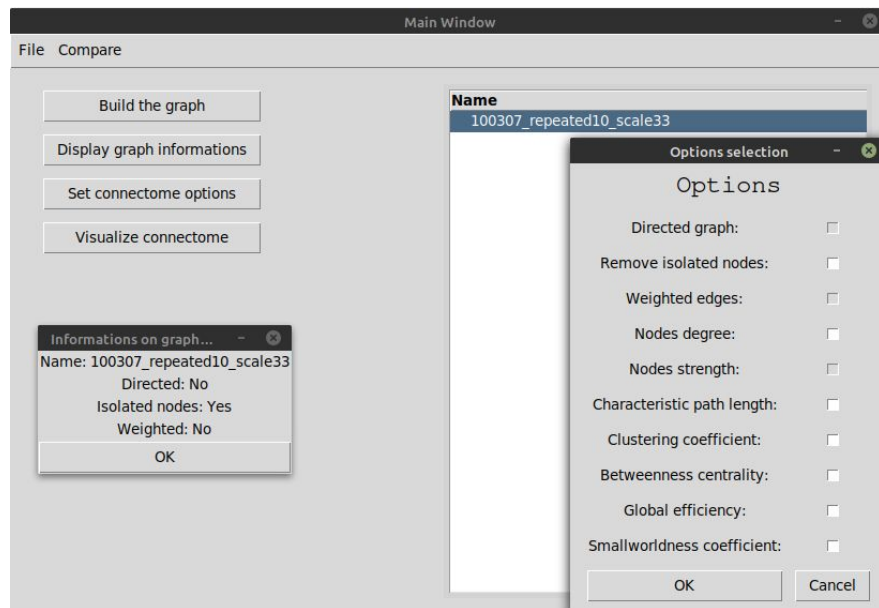


Figure 4: Options d'un connectome



Figure 5: Visualisation d'un connectome

2. Aspect Structurel

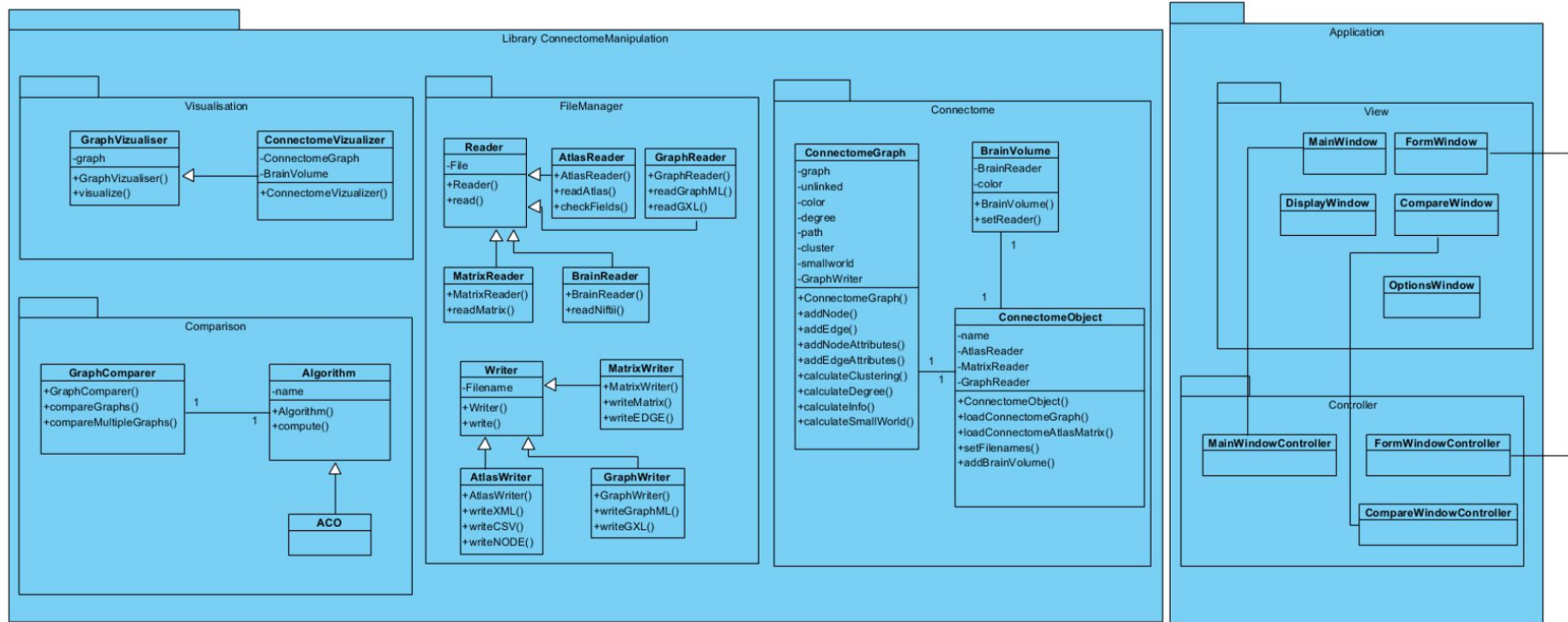


Figure 1 – Diagramme de classe final du projet de recherche et développement

3. Aspect Technique

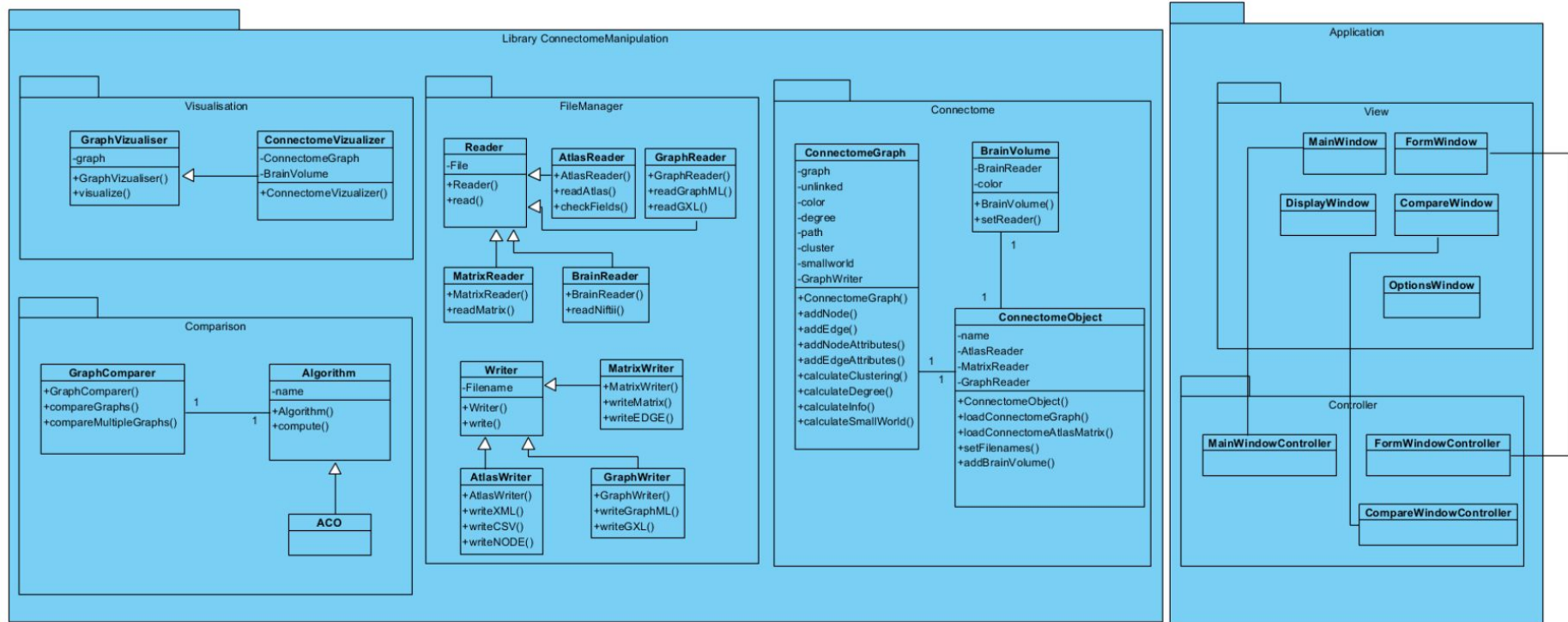
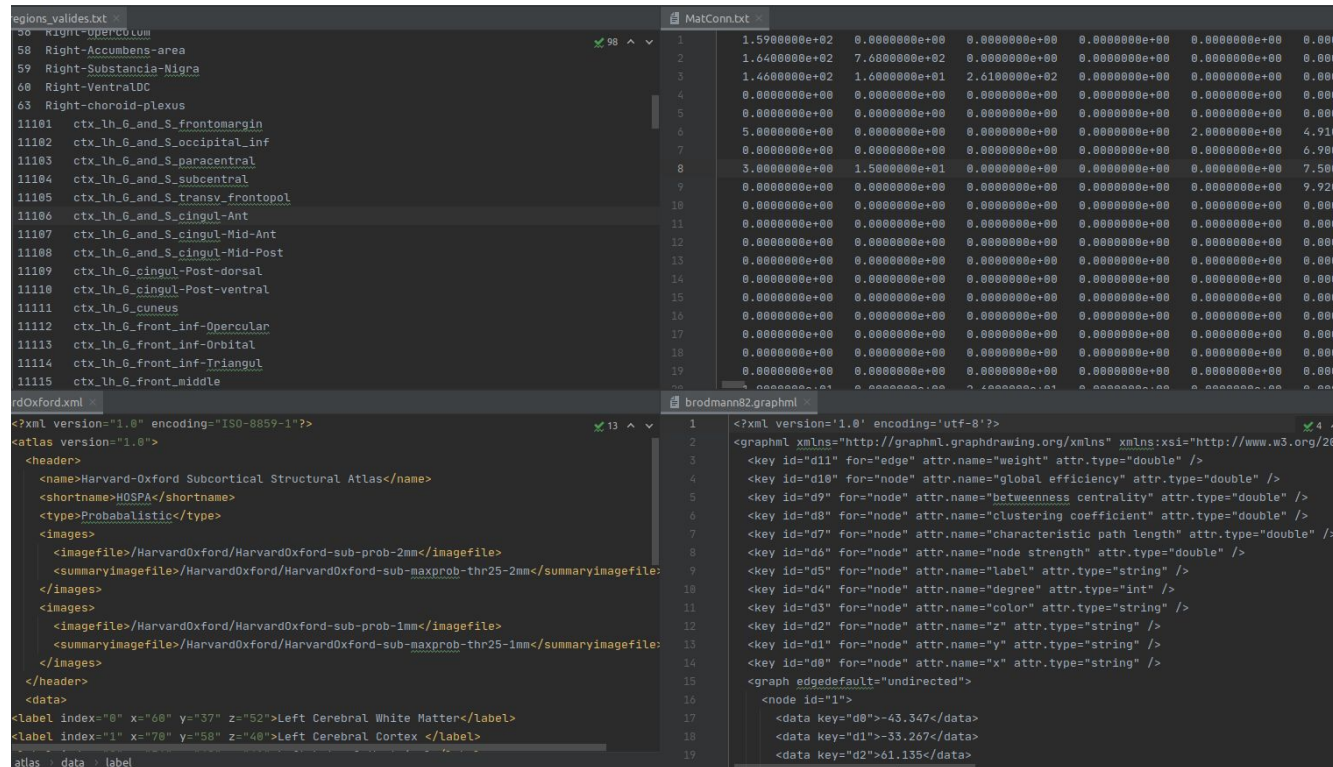


Figure 1 – Diagramme de classe final du projet de recherche et développement

4. Formats d'entrées



```
regions_valides.txt
58 Right-Accumbens-area
59 Right-Substancia-Nigra
60 Right-VentralDC
63 Right-choroid-plexus
11101 ctx_lh_6_and_S_fronmargin
11102 ctx_lh_6_and_S_occipital_inf
11103 ctx_lh_6_and_S_paracentral
11104 ctx_lh_6_and_S_subcentral
11105 ctx_lh_6_and_S_transv_frontopol
11106 ctx_lh_6_and_S_cingul-Ant
11107 ctx_lh_6_and_S_cingul-Mid-Ant
11108 ctx_lh_6_and_S_cingul-Mid-Post
11109 ctx_lh_6_cingul-Post-dorsal
11110 ctx_lh_6_cingul-Post-ventral
11111 ctx_lh_6_cuneus
11112 ctx_lh_6_front_inf-Opercular
11113 ctx_lh_6_front_inf-Orbital
11114 ctx_lh_6_front_inf-Triangul
11115 ctx_lh_6_front_middle

MatCom.txt
1 1.590000e+02 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00
2 1.640000e+02 7.600000e+02 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00
3 1.460000e+02 1.600000e+01 2.610000e+02 0.000000e+00 0.000000e+00 0.000000e+00
4 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00
5 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00
6 5.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00 2.000000e+00 4.910000e+00
7 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00 6.900000e+00
8 3.000000e+00 1.500000e+01 0.000000e+00 0.000000e+00 0.000000e+00 7.500000e+00
9 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00 9.720000e+00
10 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00
11 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00
12 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00
13 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00
14 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00
15 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00
16 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00
17 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00
18 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00
19 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00
20 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00 0.000000e+00

rdOxford.xml
<?xml version="1.0" encoding="ISO-8859-1"?>
<atlas version="1.0">
<header>
<name>Harvard-Oxford Subcortical Structural Atlas</name>
<shortname>HOSPAC</shortname>
<type>Probabilistic</type>
<images>
<imagefile>/HarvardOxford/HarvardOxford-sub-prob-2mm</imagefile>
<summaryimagefile>/HarvardOxford/HarvardOxford-sub-maxprob-thr25-2mm</summaryimagefile>
</images>
<images>
<imagefile>/HarvardOxford/HarvardOxford-sub-prob-1mm</imagefile>
<summaryimagefile>/HarvardOxford/HarvardOxford-sub-maxprob-thr25-1mm</summaryimagefile>
</images>
</header>
<data>
<Label index="0" x="60" y="37" z="52">Left Cerebral White Matter</Label>
<Label index="1" x="70" y="58" z="48">Left Cerebral Cortex </Label>
atlas : data > label

brodmann82.graphml
<?xml version="1.0" encoding="utf-8"?>
<graphml xmlns="http://graphml.graphdrawing.org/xmlns" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://graphml.graphdrawing.org/xmlns http://www.w3.org/2001/XMLSchema-instance graphml.xsd">
<graph id="d11" for="edge" attr.name="weight" attr.type="double" />
<key id="d10" for="node" attr.name="global efficiency" attr.type="double" />
<key id="d9" for="node" attr.name="betweenness centrality" attr.type="double" />
<key id="d8" for="node" attr.name="clustering coefficient" attr.type="double" />
<key id="d7" for="node" attr.name="characteristic path length" attr.type="double" />
<key id="d6" for="node" attr.name="node strength" attr.type="double" />
<key id="d5" for="node" attr.name="label" attr.type="string" />
<key id="d4" for="node" attr.name="degree" attr.type="int" />
<key id="d3" for="node" attr.name="color" attr.type="string" />
<key id="d2" for="node" attr.name="z" attr.type="string" />
<key id="d1" for="node" attr.name="y" attr.type="string" />
<key id="d0" for="node" attr.name="x" attr.type="string" />
<graph edgedefault="undirected">
<node id="1">
<data key="d0">43.347</data>
<data key="d1">33.267</data>
<data key="d2">61.135</data>
</node>
</graph>
</graphml>
```

Atlas: .txt .csv .node .xml

Matrices d'adjacence: .txt .edge

Graphes: .graphml (GXL)

5. Conclusion

- Le projet fonctionne et répond au cahier des spécifications
- La reprise du projet est facilité par sa structure
- Le programme a été conçu pour pouvoir ajouter simplement des fonctionnalités