Rapport de projet: Phase 1

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Lien Github du code: **Branche Phase 1 du projet**

```
Main.workspace326.plot_graph
```

```
. begin
.     include("node.jl")
.     include("edge.jl")
.     include("graph.jl")
.     include("read_stsp.jl")
. end
```

On pointe vers un des fichier sources de façon à ce que le code fonctionne sur différent poste de travail

```
"C:\\Users\\lppro\\OneDrive\\Documents\\Poly\\Cours\\MTH6412B\\code\\project\\mth6412b-starter-code\\instances\\stsp\\bayg29.tsp"
```

```
. begin
.     filename_stsp = "bayg29.tsp"
.     root = normpath(joinpath(@__FILE__,"..","..",".."))
.     filepath_to_stsp = "instances\\stsp"
.     filepath = joinpath(root, filepath_to_stsp)
.     filepath = joinpath(filepath, filename_stsp)
. end
```

Lecture du fichier, on retourne également un dictionnaire contenant les poids des arrêtes

```
(Dict(18 => Float64[460.0, 860.0], 2 => Float64[630.0, 1660.0], 16 => Float64[1280.0,
```

```
. graph_nodes, graph_edges, edges_weight = read_stsp(filepath)
```

Création de notre graph vide. On lui donne le nom du fichier source (.tsp)

```
my_graph =  Graph{Array{Float64,1}}("bayg29.tsp", Node[], Edge[])
```

```
. my_graph = Graph(filename_stsp,Node{Array{Float64,1}}[],Edge{Array{Float64,1}}[])
```

On ajoute les noeuds et les arrête à notre objet "my_graph" en itérant sur les données récoltées du fichier

```
. for k = 1 : length(graph_edges)
      new_node1 = Node(string(k),graph_nodes[k])
```

```
    add_node!(my_graph, new_node1)
    for j in graph_edges[k]
        new_node2 = Node(string(j),graph_nodes[j])
        edge_name = "("*string(k)*","*string(j)*")"
        new_edge = Edge(edge_name, edges_weight[k,j], (new_node1 , new_node2))
        add_edge!(my_graph, new_edge)
    end
end
```

```
md" Voici le graph..."
```

```
Graph{Array{Float64,1}}(
name = "bayg29.tsp"
nodes =   Node[
          1:   Node{Array{Float64,1}}("1",  Float64[1150.0,  1760.0])
          2:   Node{Array{Float64,1}}("2",  Float64[630.0,  1660.0])
          3:   Node{Array{Float64,1}}("3",  Float64[40.0,  2090.0])
          4:   Node{Array{Float64,1}}("4",  Float64[750.0,  1100.0])
          5:   Node{Array{Float64,1}}("5",  Float64[750.0,  2030.0])
          6:   Node{Array{Float64,1}}("6",  Float64[1030.0,  2070.0])
          7:   Node{Array{Float64,1}}("7",  Float64[1650.0,  650.0])
          8:   Node{Array{Float64,1}}("8",  Float64[1490.0,  1630.0])
          9:   Node{Array{Float64,1}}("9",  Float64[790.0,  2260.0])
          10:   Node{Array{Float64,1}}("10",  Float64[710.0,  1310.0])
          11:   Node{Array{Float64,1}}("11",  Float64[840.0,  550.0])
          12:   Node{Array{Float64,1}}("12",  Float64[1170.0,  2300.0])
          13:   Node{Array{Float64,1}}("13",  Float64[970.0,  1340.0])
          14:   Node{Array{Float64,1}}("14",  Float64[510.0,  700.0])
          15:   Node{Array{Float64,1}}("15",  Float64[750.0,  900.0])
          16:   Node{Array{Float64,1}}("16",  Float64[1280.0,  1200.0])
          17:   Node{Array{Float64,1}}("17",  Float64[230.0,  590.0])
          18:   Node{Array{Float64,1}}("18",  Float64[460.0,  860.0])
          19:   Node{Array{Float64,1}}("19",  Float64[1040.0,  950.0])
          20:   Node{Array{Float64,1}}("20",  Float64[590.0,  1390.0])
          21:   Node{Array{Float64,1}}("21",  Float64[830.0,  1770.0])
          22:   Node{Array{Float64,1}}("22",  Float64[490.0,  500.0])
          23:   Node{Array{Float64,1}}("23",  Float64[1840.0,  1240.0])
          24:   Node{Array{Float64,1}}("24",  Float64[1260.0,  1500.0])
          25:   Node{Array{Float64,1}}("25",  Float64[1280.0,  790.0])
          26:   Node{Array{Float64,1}}("26",  Float64[490.0,  2130.0])
          27:   Node{Array{Float64,1}}("27",  Float64[1460.0,  1420.0])
          28:   Node{Array{Float64,1}}("28",  Float64[1260.0,  1910.0])
          29:   Node{Array{Float64,1}}("29",  Float64[360.0,  1980.0])
        ]
edges =
  Edge[
  1:
    Edge{Array{Float64,1}}("(1,2)",  97.0,  (Node{Array{Float64,1}}("1",  Float64[1150.0,
  2:
    Edge{Array{Float64,1}}("(1,3)",  205.0,  (Node{Array{Float64,1}}("1",  Float64[1150.0
  3:
    Edge{Array{Float64,1}}("(1,4)",  139.0,  (Node{Array{Float64,1}}("1",  Float64[1150.0
  4:
    Edge{Array{Float64,1}}("(1,5)",  86.0,  (Node{Array{Float64,1}}("1",  Float64[1150.0,
  5:
    Edge{Array{Float64,1}}("(1,6)",  60.0,  (Node{Array{Float64,1}}("1",  Float64[1150.0,
  6:
```

```
 Edge{Array{Float64,1}}("(1,7)",  220.0,  (Node{Array{Float64,1}}("1",  Float64[1150.0
 Edge{Array{Float64,1}}("(1,8)",  65.0,  (Node{Array{Float64,1}}("1",  Float64[1150.0,
 Edge{Array{Float64,1}}("(1,9)",  111.0,  (Node{Array{Float64,1}}("1",  Float64[1150.0
 Edge{Array{Float64,1}}("(1,10)",  115.0,  (Node{Array{Float64,1}}("1",  Float64[1150.
 Edge{Array{Float64,1}}("(1,11)",  227.0,  (Node{Array{Float64,1}}("1",  Float64[1150.
 Edge{Array{Float64,1}}("(1,12)",  95.0,  (Node{Array{Float64,1}}("1",  Float64[1150.0
 Edge{Array{Float64,1}}("(1,13)",  82.0,  (Node{Array{Float64,1}}("1",  Float64[1150.0
 Edge{Array{Float64,1}}("(1,14)",  225.0,  (Node{Array{Float64,1}}("1",  Float64[1150.
 Edge{Array{Float64,1}}("(1,15)",  168.0,  (Node{Array{Float64,1}}("1",  Float64[1150.
 Edge{Array{Float64,1}}("(1,16)",  103.0,  (Node{Array{Float64,1}}("1",  Float64[1150.
 Edge{Array{Float64,1}}("(1,17)",  266.0,  (Node{Array{Float64,1}}("1",  Float64[1150.
 Edge{Array{Float64,1}}("(1,18)",  205.0,  (Node{Array{Float64,1}}("1",  Float64[1150.
 Edge{Array{Float64,1}}("(1,19)",  149.0,  (Node{Array{Float64,1}}("1",  Float64[1150.
 Edge{Array{Float64,1}}("(1,20)",  120.0,  (Node{Array{Float64,1}}("1",  Float64[1150.
 Edge{Array{Float64,1}}("(1,21)",  58.0,  (Node{Array{Float64,1}}("1",  Float64[1150.0
 Edge{Array{Float64,1}}("(1,22)",  257.0,  (Node{Array{Float64,1}}("1",  Float64[1150.
 Edge{Array{Float64,1}}("(1,23)",  152.0,  (Node{Array{Float64,1}}("1",  Float64[1150.
 Edge{Array{Float64,1}}("(1,24)",  52.0,  (Node{Array{Float64,1}}("1",  Float64[1150.0
 Edge{Array{Float64,1}}("(1,25)",  180.0,  (Node{Array{Float64,1}}("1",  Float64[1150.
 Edge{Array{Float64,1}}("(1,26)",  136.0,  (Node{Array{Float64,1}}("1",  Float64[1150.
 Edge{Array{Float64,1}}("(1,27)",  82.0,  (Node{Array{Float64,1}}("1",  Float64[1150.0
 Edge{Array{Float64,1}}("(1,28)",  34.0,  (Node{Array{Float64,1}}("1",  Float64[1150.0
 Edge{Array{Float64,1}}("(1,29)",  145.0,  (Node{Array{Float64,1}}("1",  Float64[1150.
 Edge{Array{Float64,1}}("(2,3)",  129.0,  (Node{Array{Float64,1}}("2",  Float64[630.0,
 Edge{Array{Float64,1}}("(2,4)",  103.0,  (Node{Array{Float64,1}}("2",  Float64[630.0,
 Edge{Array{Float64,1}}("(2,5)",  71.0,  (Node{Array{Float64,1}}("2",  Float64[630.0,
 Edge{Array{Float64,1}}("(2,6)",  105.0,  (Node{Array{Float64,1}}("2",  Float64[630.0,
 Edge{Array{Float64,1}}("(2,7)",  258.0,  (Node{Array{Float64,1}}("2",  Float64[630.0,
 Edge{Array{Float64,1}}("(2,8)",  154.0,  (Node{Array{Float64,1}}("2",  Float64[630.0,
 Edge{Array{Float64,1}}("(2,9)",  112.0,  (Node{Array{Float64,1}}("2",  Float64[630.0,
 Edge{Array{Float64,1}}("(2,10)",  65.0,  (Node{Array{Float64,1}}("2",  Float64[630.0,
```

```
    Edge{Array{Float64,1}}("(2,11)",  204.0,  (Node{Array{Float64,1}}("2",  Float64[630.0
 38:
    Edge{Array{Float64,1}}("(2,12)",  150.0,  (Node{Array{Float64,1}}("2",  Float64[630.0
 39:
    Edge{Array{Float64,1}}("(2,13)",  87.0,  (Node{Array{Float64,1}}("2",  Float64[630.0,
 40:
    Edge{Array{Float64,1}}("(2,14)",  176.0,  (Node{Array{Float64,1}}("2",  Float64[630.0
 ⋮
 397:
    Edge{Array{Float64,1}}("(25,26)",  281.0,  (Node{Array{Float64,1}}("25",  Float64[128
 398:
    Edge{Array{Float64,1}}("(25,27)",  120.0,  (Node{Array{Float64,1}}("25",  Float64[128
 399:
    Edge{Array{Float64,1}}("(25,28)",  205.0,  (Node{Array{Float64,1}}("25",  Float64[128
 400:
    Edge{Array{Float64,1}}("(25,29)",  270.0,  (Node{Array{Float64,1}}("25",  Float64[128
 401:
    Edge{Array{Float64,1}}("(26,27)",  213.0,  (Node{Array{Float64,1}}("26",  Float64[490
 402:
    Edge{Array{Float64,1}}("(26,28)",  145.0,  (Node{Array{Float64,1}}("26",  Float64[490
 403:
    Edge{Array{Float64,1}}("(26,29)",  36.0,  (Node{Array{Float64,1}}("26",  Float64[490.
 404:
    Edge{Array{Float64,1}}("(27,28)",  94.0,  (Node{Array{Float64,1}}("27",  Float64[1460
 405:
    Edge{Array{Float64,1}}("(27,29)",  217.0,  (Node{Array{Float64,1}}("27",  Float64[146
 406:
    Edge{Array{Float64,1}}("(28,29)",  162.0,  (Node{Array{Float64,1}}("28",  Float64[126
  ]
)
```

```
. my_graph
```