testing

May 2, 2025

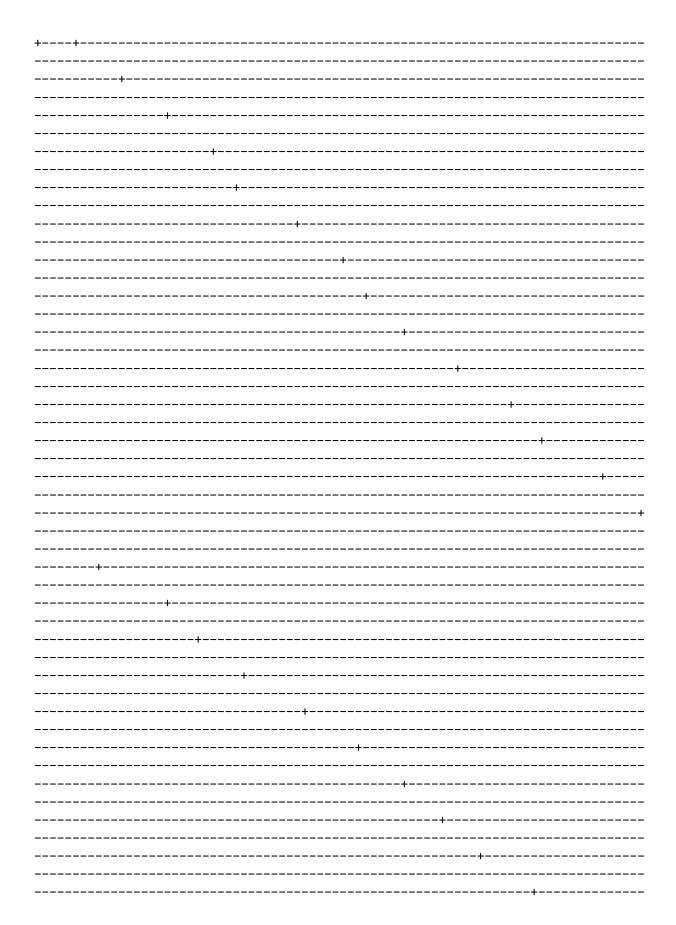
```
[]: # IMPORT PACKAGES, /modules, AND LIBRARIES
    # -----
    # Import functions from modules
    from modules import *
    # DATA SOURCE INIT
    # Input datasource to Master_df
    Master_df = pd.DataFrame(
       pd.read_excel(
           "Datasource/Master Data.xlsx",
           sheet_name="Location Distance",
    )
    # PSO INITIALIZATION
    # -----
    # Base Parameter
    n = 100 # Max Iteration
    N = 25 # Swarm Size
    d = len(Master_df) # Dimention Size
    c1 = 2 # Learning Rates
    c2 = 2 # Learning Rates
    # Inertia Weight
    # here, i use random inertia weight strategy every iteration
    # so, i generate it by function in function_def.py
    # Position Clamping
    X \min = 0
    X_{max} = 1
    # Generate Xj and Initial Position
    Xj = initial_swarm_positions(N, d, X_min, X_max)
    print_df(Xj)
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| 0.40779777129438033, 0.9669641557448677, 0.45494965360960193, |
| 0.9075034014950217, 0.6548761361892665] [0.8115291948203741, |
| $0.22697730177811182,\ 0.9472667888170673,\ 0.017637175716666786,\ 0.84120422512374,$ |
| 0.6744091518382539, 0.01297315696681256, 0.04198178778657746] |
| [0.3564493760911214, 0.08983279901438568, 0.3276653241767967, |
| 0.9557661431727364, 0.4049356645807992, 0.30900919278822625, 0.1442644588274713, |
| 0.35530071680971254] [0.3458342554172802, 0.5457651933309223, |
| 0.8714739502561935, 0.45686527263498133, 0.31654752627859317, |
| 0.5788842350677648, 0.2516630501186641, 0.57434803713745] |
| [0.012347207900821666, 0.054219803751569984, 0.30920561279789804, |
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| 0.6923752693402725, 0.8517573658326271, 0.606462438927474, 0.8119186925063097, |
| 0.09464049523905471] [0.49601468039011365, 0.6280665590502058, 0.35969652455277856, 0.5138314287472429, 0.8005323444654243, 0.9874310710740188 |
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0.39945164367205555,\ 0.7502678588552493,\ 0.3984024563768004,\ 0.5052861748049253,
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0.9690873657876531, 0.9737065438398422 | [0.8233166553989674,
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