### Sets

**Indices & Sets:**

- **ORIGINS**: 1..3/
- **RORO_TERMINALS**: 1..4/
- **TRAIN_TERMINALS**: 1..6/
- **DESTINATIONS**: 1..49/
- **PERIODS**: 1..12/

**Results:**

- **COST**: 1, 2, 3, 4, 5, 6/
- **SHIPPMENT_EXP**: ORIGINS, DESTINATIONS, PERIODS:
  - X_EXP, DE_EXP, C_SP_EXP, SP_EXP/
- **MARILINK1**: ORIGINS, RORO_TERMINALS:
  - TT_IJ/
- **MARILINK2**: RORO_TERMINALS, ORIGINS:
  - TT_JI/
- **SEMI_INTERMODAL_IMP**: MARILINK1, DESTINATIONS, PERIODS:
  - Y_IMP/
- **SEMI_INTERMODAL_EXP**: DESTINATIONS, MARILINK2, PERIODS:
  - Y_EXP/
- **MARIRAILLINK1**: ORIGINS, RORO_TERMINALS, TRAIN_TERMINALS:
  - TR_JK/
- **MARIRAILLINK2**: TRAIN_TERMINALS, RORO_TERMINALS:
  - TR_KJ/
- **INTERMODAL_IMP**: MARIRAILLINK1, DESTINATIONS, PERIODS:
  - Z_IMP/
- **INTERMODAL_EXP**: DESTINATIONS, MARIRAILLINK2, PERIODS:
  - Z_EXP/
- **LINK_IJ1**: ORIGINS, RORO_TERMINALS:
  - D_IJ/
- **LINK_JI1**: RORO_TERMINALS, ORIGINS:
  - D_JI/
- **LINK_IJ11**: ORIGINS, RORO_TERMINALS:
  - U_IJ/
- **SHIPPMENT_IJ_IMP1**: LINK_IJ1, PERIODS:
  - N_IMP, OWN_IMP, SIJ_IMP/
- **SHIPPMENT_IJ_IMP11**: LINK_IJ11, PERIODS:
  - UTI_IMP/
- **SHIPPMENT_IJ_IMP2**: LINK_IJ2, PERIODS:
  - PUB_IJ_IMP/
- **SHIPPMENT_JI_EXP1**: LINK_JI1, PERIODS:
  - N_EXP, OWN_EXP, SJI_EXP/
- **SHIPPMENT_JI_EXP11**: LINK_JI11, PERIODS:
  - UTI_EXP/
- **SHIPPMENT_JI_EXP2**: LINK_JI2, PERIODS:
  - PUB_JI_EXP/
- **FULLTRAIN_IMP**: RORO_TERMINALS, TRAIN_TERMINALS:
  - TR_JK/
- **FULLTRAIN_EXP**: TRAIN_TERMINALS, RORO_TERMINALS:
  - TR_KJ/
- **LINK_JK**: RORO_TERMINALS, TRAIN_TERMINALS:
  - DD_JK/
- **LINK_KJ**: TRAIN_TERMINALS, RORO_TERMINALS:
  - DD_KJ/
- **PUBTRAINLINK1**: TRAIN_TERMINALS, TRAIN_TERMINALS:
  - DS_JK/
- **PUBTRAINLINK2**: TRAIN_TERMINALS, TRAIN_TERMINALS:
  - DS_KJ/
- **TRAINLINK1**: RORO_TERMINALS, TRAIN_TERMINALS:
  - T_IJ/
- **TRAINLINK2**: TRAIN_TERMINALS, RORO_TERMINALS:
  - T_KJ/
- **JIMP**: TRAIN_TERMINALS, PERIODS:
  - SKJ_IMP, M_IMP/
- **JEXP**: TRAIN_TERMINALS, PERIODS:
  - SKJ_EXP, M_EXP/
- **KIMP**: TRAIN_TERMINALS, PERIODS:
  - PUB_SK_IMP/
- **KEXP**: TRAIN_TERMINALS, PERIODS:
  - PUB_SK_EXP/
- **COST_IJ1**: ORIGINS, RORO_TERMINALS:
  - C_IJ, CAP_RORO_IMP/
- **COST_IJ2**: ORIGINS, RORO_TERMINALS:
  - C_IJ2/
- **COST_JI1**: RORO_TERMINALS, ORIGINS:
  - C_IJ, CAP_RORO_EXP/
- **COST_JI2**: RORO_TERMINALS, ORIGINS:
  - C_IJ2/
- **COST_JK1**: RORO_TERMINALS, TRAIN_TERMINALS:
  - C_JK, CAP_TRAIN_IMP, MU_IMP/
- **COST_JK2**: RORO_TERMINALS, TRAIN_TERMINALS:
  - C_JK2, C_JK2P, C_JK2O/
- **COST_KJ1**: TRAIN_TERMINALS, RORO_TERMINALS:
  - C_KJ, CAP_TRAIN_EXP, MU_EXP/
- **COST_KJ2**: TRAIN_TERMINALS, RORO TERMINALS:
  - C_KJ2/
- **COST_KK1**: TRAIN_TERMINALS, TRAIN_TERMINALS:
  - C_KK1/
COST_KK2(TRAIN_TERMINALS,TRAIN_TERMINALS)/5 4, 6 4]/C_KKK2;
DISTANCE_JL (RORO_TERMINALS, DESTINATIONS): D_JL, T_JL;
DISTANCE_LJ (DESTINATIONS, RORO_TERMINALS): D_LJ, T_LJ;
DISTANCE_LK (DESTINATIONS, TRAIN_TERMINALS): D_LK, T_LK;
DISTANCE_JL (ORIGINS, DESTINATIONS): D_JL, T_JL;
DISTANCE_LI (DESTINATIONS, ORIGINS): D_LI, T_LI;

ENDSETS

DATA:

!Data set of the real-life application:

DE_IMP, DE_EXP, C_SP_IMP, C_SP_EXP, N_IMP, N_EXP, AYLIK_MALIYE, Y_SP_IMP, Y_SP_EXP, ZCOST, Z1, Z2, Z3, Z4, AYLIK_SURE, AYLIK_CO2, ZTIME, ZT1, ZT2, ZT3, ZT4, Z_ENVIRONMENT, ZE_1, ZE_2, ZE_3, ZE_4=

Writting the values of decision variables on Excel files.

@OLE('C:\Users\kemal.subulan\Desktop\San-Tez_Toplanti_2(12_Aralık)\guncel_veri.xlsx'),'DE_IMP','DE_EXP','C_SP_IMP','C_SP_EXP','N_IMP','N_EXP','African_Malaye',Y_SP_IMP,Y_SP_EXP,AYLIK_MALIYE,ZCOST,Z1,Z2,Z3,Z4,AYLIK_SURE,AYLIK_CO2,ZTIME,ZT1,ZT2,ZT3,ZT4,Z_ENVIRONMENT,ZE_1,ZE_2,ZE_3,ZE_4=

Writing the values of decision variables on Excel files;