library(frbs)

varinp.mf <- matrix(c(2, 0, 10, 20, NA, 4, 10, 20, 30, 40, 3, 30, 40, 50, NA,

2, 0, 18, 20, NA, 3, 20, 40, 50, NA,

2, 0, 10, 20, NA, 1, 10, 25, 40, NA, 3, 30, 40, 50, NA,

2, 0, 10, 20, NA, 4, 10, 20, 30, 40, 3, 30, 40, 50, NA),

nrow = 5, byrow = FALSE)

num.fvalinput <- matrix(c(3, 2, 3, 3), nrow=1)

## Give the names of the linguistic terms of each input variables.

mentalsecurity <- c("low", "medium", "high")

hopelessness <- c("yes", "no")

selfassertiveness <- c("low", "medium", "high")

mentalflexibility <- c("low", "medium", "high")

names.varinput <- c(mentalsecurity, hopelessness, selfassertiveness, mentalflexibility)

range.data <- matrix(c(0, 50, 0, 50, 0, 50, 0, 50, 0, 50), nrow = 2)

type.defuz <- "WAM"

type.tnorm <- "MIN"

type.snorm <- "MAX"

type.implication.func <- "ZADEH"

name <- "Artificial Psychologist"

newdata<- matrix(c(15, 30, 25, 5, 45, 25, 38, 30), nrow = 2, byrow = TRUE)

colnames.var <- c("mental security ", ", hopelessness ", " self-assertiveness ", " mental flexibility ", "cyber shame")

num.fvaloutput <- matrix(c(3), nrow = 1)

varoutput.1 <- c("low", "medium", "high")

names.varoutput <- c(varoutput.1)

varout.mf <- matrix(c(2, 0, 10, 20, NA, 4, 10, 25, 30, 40, 3, 30, 40, 50, NA),

nrow = 5, byrow = FALSE)

## Set type of model which is "MAMDANI".

type.model <- "MAMDANI"

## "a1", "and", "b1, "->", "e1" means that

## "IF inputvar.1 is a1 and inputvar.2 is b1 THEN outputvar.1 is e1"

## Make sure that each rule has a "->" sign.

rule <- matrix(

c("low", "and", "yes", "and", "low", "and", "low", "->", "high",

"medium", "and", "no", "and", "low", "and", "low", "->", "medium",

"high", "and", "no", "and", "medium", "and", "high", "->", "low"),

nrow = 3, byrow = TRUE)

object <- frbs.gen(range.data, num.fvalinput, names.varinput,

num.fvaloutput, varout.mf, names.varoutput, rule,

varinp.mf, type.model, type.defuz, type.tnorm,

type.snorm, func.tsk = NULL, colnames.var, type.implication.func, name)

plotMF(object)

summary(object)

res <- predict(object, newdata)$predicted.val