2.4 Recommender Systems: Evaluation

15. Considering the log1 binary data, evaluate different recommendation strategies.

(a) Set the seed to 2021. Use the function evaluationScheme to define an evaluation scheme that splits the data into train and test set (80%-20% proportion) and establishes that 2 items of test cases are already known. In case one or more users do not comply with this setting, you can disregard them.

(b) Check how the data was split according to the previous evaluation scheme, using the function.

(c) getData on the evaluation scheme with the argument's "train", "known" and "unknown".

(d) Define the list of methods that will be used to obtain the top N recommendations, as follows:

```
methods <- list(
    "popular" = list(name="POPULAR", param = NULL), "user-based
    CF" = list(name="UBCF", param = NULL) "item-based CF" =
    list(name="IBCF", param = NULL)
)
```

(e) Use the function evaluate with the previously defined evaluation scheme, methods and considering top 1, 3 and 5 recommendations for each of the models.

(f) Explore the obtained object.

(g) Use the function getConfusionMatrix as one of the methods to obtain the corresponding confusion matrices. Be critical regarding the values that are shown.

(h) Plot the ROC curves for each of the methods and different values of N. What can you conclude?

(i) Plot the precision/recall curves for each of the methods and different values of N. What can you conclude?