**Take Home Challenge:**
**Deadline: 12/15/2022**

**Task:** Train different session (contextual, sequential) based product recommendation recommenders for E-commerce use case and compare the performance of the recommenders.

**Requirements:**
In the deliverables and experiments, one of the recommenders needs to be a Deep RL recommender [DRL2, DRL1, or DRL3] and at least two different datasets are used for training/testing. Also, at least two offline evaluation metrics are used for benchmarking.

**Deliverable/submission:**
A link to your well organized Github open source repository including
1.Introduction (overview)
2.Instructions (how to run the code)
3.Results (benchmarking)
4.Source Code (please organize your code)

No report or presentation is required.

****Please specify the contribution of each member in your team (who did what and who implemented what).****

**Datasets:**
1.Retailrocket, https://www.kaggle.com/datasets/retailrocket/ecommerce-dataset
2.Diginetica, https://competitions.codalab.org/competitions/11161#learn_the_details
3.Amazon, https://nijianmo.github.io/amazon/index.html
4.H&M,
https://www.kaggle.com/competitions/h-and-m-personalized-fashion-recommendations/data?select=transactions_train.csv
5.Others, https://github.com/RUCAIBox/RecSysDatasets

**Deep RL models:**
(the locations of the source code can be found in the papers):
1.https://arxiv.org/abs/2111.03474 [DRL2]
2.https://arxiv.org/abs/2006.05779 [DRL1]
3.https://arxiv.org/abs/2206.07353 [DRL3]

**Offline evaluation metrics:**
1.NDCG
2.Hit ratio
3.MRR
4.MAP
5.etc.

**Repositories for session (contextual, sequential) based recommenders:**
1.Microsoft Recommenders, https://github.com/microsoft/recommenders
2.RecBole, https://github.com/RUCAIBox/RecBole

**Repositories from Duke students:**
**(Class 2022):**
1.MIDS, https://github.com/gamecicn/Kaggle_HM
2.AIPI A, https://github.com/omartinez182/recommenders
3.AIPI B, https://github.com/omartinez182/Sequence-Based-Recommenders

**Papers With Code benchmarks:**
https://paperswithcode.com/task/session-based-recommendations

**Troubleshooting:**
Please contact TA if you have any questions or issues installing the packages. You need to do the work, but TA may help you resolve the packages' installation issues.