COL380 ASSIGNMENT 3

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- **Total Runtime (for 10,000 users)**

K=5			C		
			5	**10**	**24**
		2	25.897s	24.756s	25.095s
	N	**5**	23.468s	23.264s	23.408s
		10	22.275s	22.498s	22.923s

K=10			C		
			5	**10**	**24**
		2	30.288s	28.414s	27.525s
	N	**5**	25.405s	24.793s	24.434s
		10	24.374s	23.593s	24.668s

K=15			C		
			5	**10**	**24**
		2	33.617s	31.228s	29.724s
	N	**5**	27.057s	26.053s	23.288s
		10	26.016s	25.786s	26.758s

- **Average Prediction time per user**

K=5			C		
			5	**10**	**24**
		2	2.589ms	2.475ms	2.509ms
	N	**5**	2.346ms	2.326ms	2.340ms
		10	2.227ms	2.249ms	2.292ms

K=10			C		
			5	**10**	**24**
		2	3.028ms	2.841ms	2.752ms
	N	**5**	2.540ms	2.479ms	2.443ms
		10	2.437ms	2.359ms	2.466ms

K=15			C		
			5	**10**	**24**
		2	3.361ms	3.122ms	2.972ms
	N	**5**	2.705ms	2.605ms	2.328ms
		10	2.601ms	2.578ms	2.675ms

- Runtime for ```./compile.sh``` = 2.710s
- Runtime for ```./DataSetup.sh``` = 4m36.000s
- Runtimes for ```./HNSWpred.sh``` reported on previous page

- **<u>Accuracy</u>**
  - **K=5** (for all combinations of N & C)
    - Precision: 17.42 %
    - Recall: 12.32 %
  - **K=10** (for all combinations of N & C)
    - Precision: 16.35 %
    - Recall: 18.80 %
  - **K=15** (for all combinations of N & C)
    - Precision: 15.01 %
    - Recall: 22.84 %

Precision@k = {items in top K prediction} $\cap$ {Items in ground truth} / k

Recall @k = {items in top K prediction} $\cap$ {Items in ground truth} / total items in ground truth

- **<u>Max Memory Usage</u>**
  - Reported values are for **Maximum resident set size (kbytes)** during the execution of the program.

K=5			C		
			5	10	24
		2	13724652	14077384	15064780
	N	5	11060576	11413548	11938100
		10	10175100	11413760	10652544

K=10			C		
			5	10	24
		2	13725384	14077664	15064644
	N	5	11060580	11413744	12205688
		10	10175232	10528200	10927668

K=15			C		
			5	10	24
		2	13725016	14077536	15064696
	N	5	11060764	11413760	12401832
		10	10175168	10528096	11123408