#### Real

	education	sex income native.country wor		workclass	vorkclass race marital.status relation			occupation	SUM(capital) COUNT(*		
16031	Some-college	Male	<=50K	Puerto-Rico	Private	White	Divorced	Own-child	Tech-support	nan	nan
3443	Assoc-acdm	Female	<=50K	Scotland	Private	White	Divorced	Not-in-family	Prof-specialty	nan	nan
958	11th	Female	<=50K	United-States	Private	White	Divorced	Unmarried	Sales	0.000000	6.000000
4633	Assoc-voc	Male	<=50K	Columbia	Local-gov	White	Divorced	Not-in-family	Machine-op-inspct	nan	nan
12351	Masters	Female	<=50K	?	Local-gov	White	Never-married	Unmarried	Prof-specialty	nan	nan

# Synthetic

	education sex income native.country w		workclass race marital.status			relationship	occupation	SUM(capital)	COUNT(*)		
16031	Some-college	Male	<=50K	Puerto-Rico	Private	White	Divorced	Own-child	Tech-support	-90.607329	2
3443	Assoc-acdm	Female	<=50K	Scotland	Private	White	Divorced	Not-in-family	Prof-specialty	4.231951	1
958	11th	Female	<=50K	United-States	Private	White	Divorced	Unmarried	Sales	-250.396775	2
4633	Assoc-voc	Male	<=50K	Columbia	Local-gov	White	Divorced	Not-in-family	Machine-op-inspct	152.754300	1
12351	Masters	Female	<=50K	?	Local-gov	White	Never-married	Unmarried	Prof-specialty	-48.858825	1

SQL for Real:

SELECT education, sex, income, `native.country`, workclass, race, `marital.status`, relationship, occupation, SUM(capital), COUNT(\*) FROM C1 WHERE (`native.country` <>

'United-States' AND fnlwgt = 167868) AND (`marital.status` <> 'Married-civ-spouse' AND 'hours.per.week` < 49) OR (sex = 'Male' OR capital < -2377) AND (occupation <> 'Prof-specialty' AND education <> 'Bachelors') OR (relationship IN ('Not-in-family', 'Wife', 'Unmarried', 'Husband') OR age BETWEEN 31 AND 46) OR (race = 'White' OR workclass LIKE 'Private') GROUP BY education, sex, income, `native.country`, workclass, race, `marital.status`, relationship, occupation

Resulted in 12552 records

#### SQL for Synthetic:

SELECT education, sex, income, `native.country`, workclass, race, `marital.status`, relationship, occupation, SUM(capital), COUNT(\*) FROM C1\_syn\_06 WHERE (`native.country` <> 'United-States' AND filwgt = 167868) AND ('marital.status' <> 'Married-civ-spouse' AND 'hours.per.week' < 49) OR (sex = 'Male' OR capital <-2377) AND (occupation <> 'Prof-specialty' AND education <> 'Bachelors') OR (relationship IN ('Not-in-family', 'Wife', 'Unmarried', 'Husband') OR age BETWEEN 31 AND 46) OR (race = 'White' OR workclass LIKE 'Private') GROUP BY education, sex, income, `native.country`, workclass, race, `marital.status`, relationship, occupation

Resulted in 17007 records

Normalized Euclidean distance for (capital): 64.44

Hellinger Distance: 0.252

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#### Real

	race	occupation	relationship MAX(`	hours.per.week')	COUNT(*)
<b>75</b>	Black	?	Not-in-family	60.000000	36.000000
95	Black	Farming-fishing	Own-child	60.000000	12.000000
77	Black	?	Own-child	48.000000	88.000000
1	Amer-Indian-Eskimo	?	Unmarried	40.000000	2.000000
131	Black	Transport-moving	Not-in-family	80.000000	34.000000

# Synthetic

	race	occupation	relationship MAX(	`hours.per.week`)	COUNT(*)
75	Black	?	Not-in-family	40.049650	28
95	Black	Farming-fishing	Own-child	40.050697	11
77	Black	?	Own-child	40.058926	91
1	Amer-Indian-Eskimo	?	Unmarried	39.956267	1
131	Black	Transport-moving	Not-in-family	40.070279	18

# SQL for Real:

SELECT race, occupation, relationship, MAX(`hours.per.week'), COUNT(\*) FROM C1 WHERE (`marital.status` = 'Never-married') GROUP BY race, occupation, relationship Resulted in 253 records

# SQL for Synthetic:

SELECT race,occupation,relationship,MAX(`hours.per.week`), COUNT(\*) FROM C1\_syn\_06 WHERE (`marital.status` = 'Never-married') GROUP BY race,occupation,relationship

Resulted in 258 records

Normalized Euclidean distance for ('hours.per.week'): 14.8

Hellinger Distance: 0.078

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# Real

	workclass	native.country	occupation	race	income	marital.status	sex	relationship	SUM(fnlwgt)	COUNT(*)
8422	State-gov	Puerto-Rico	Adm-clerical	White	<=50K	Never-married	Female	Unmarried	nan	nan
262	?	Puerto-Rico	?	White	<=50K	Separated	Female	Unmarried	nan	nan
7283	Self-emp-inc	United-States	Handlers-cleaners	White	<=50K	Divorced	Male	Not-in-family	nan	nan
7158	Self-emp-inc	Puerto-Rico	Sales	Black	<=50K	Divorced	Female	Unmarried	nan	nan
8339	State-gov	Iran	Prof-specialty	White	<=50K	Never-married	Male	Not-in-family	nan	nan

# Synthetic

	workclass	native.country	occupation	race	income	marital.status	sex	relationship	SUM(fnlwgt)	COUNT(*)
842	22 State-gov	Puerto-Rico	Adm-clerical	White	<=50K	Never-married	Female	Unmarried	690949.800936	4
26	2 ?	Puerto-Rico	?	White	<=50K	Separated	Female	Unmarried	1384577.296412	8
728	3 Self-emp-inc	United-States	Handlers-cleaners	White	<=50K	Divorced	Male	Not-in-family	140976.038166	1
715	8 Self-emp-inc	Puerto-Rico	Sales	Black	<=50K	Divorced	Female	Unmarried	169416.911395	1
833	9 State-gov	Iran	Prof-specialty	White	<=50K	Never-married	Male	Not-in-family	198805.723353	1

# SQL for Real:

SELECT workclass, `native.country`,occupation,race,income, `marital.status`,sex,relationship,SUM(fnlwgt), COUNT(\*) FROM C1 WHERE (`marital.status` = 'Married-civspouse' AND sex = 'Male') OR (workclass IN ('Self-emp-inc', 'Local-gov', 'Self-emp-not-inc', 'Federal-gov', '?', 'State-gov', 'Private') OR fnlwgt BETWEEN 120471 AND 234460) OR (age <> 43 OR income = '>50K') OR (occupation <> 'Adm-clerical' OR `hours.per.week` BETWEEN 36 AND 70) GROUP BY workclass, `native.country`,occupation,race,income, `marital.status`,sex,relationship

# SQL for Synthetic:

SELECT workclass, `native.country`,occupation,race,income, `marital.status`,sex,relationship,SUM(fnlwgt), COUNT(\*) FROM C1\_syn\_06 WHERE (`marital.status` = 'Married-civ-spouse' AND sex = 'Male') OR (workclass IN ('Self-emp-inc', 'Local-gov', 'Self-emp-not-inc', 'Federal-gov', '?', 'State-gov', 'Private') OR fnlwgt BETWEEN 120471 AND 234460) OR (age <> 43 OR income = '>50K') OR (occupation <> 'Adm-clerical' OR `hours.per.week` BETWEEN 36 AND 70) GROUP BY workclass, `native.country`,occupation,race,income, `marital.status`,sex,relationship

Resulted in 8900 records

Normalized Euclidean distance for (fnlwgt): 49.69

Hellinger Distance: 0.303

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					Real				
	marital.status	income	education	workclass	occupation	relationship	native.country	MIN(capital)	COUNT(*)
11954	Separated	<=50K	Masters	Local-gov	Prof-specialty	Not-in-family	Scotland	nan	nan
12018	Separated	<=50K	Some-college	Local-gov	Other-service	Unmarried	Puerto-Rico	nan	nan
9887	Never-married	<=50K	HS-grad	Private	Sales	Unmarried	?	nan	nan
3283	Married-civ-spouse	<=50K	Assoc-acdm	Local-gov	Craft-repair	Husband	Columbia	nan	nan
1369	Divorced	<=50K	HS-grad	Private	Machine-op-inspct	Other-relative	Columbia	nan	nan

					Synthetic				
	marital.status	income	education	workclass	occupation	relationship	native.country	MIN(capital)	COUNT(*)
11954	Separated	<=50K	Masters	Local-gov	Prof-specialty	Not-in-family	Scotland	-83.530398	1
12018	Separated	<=50K	Some-college	Local-gov	Other-service	Unmarried	Puerto-Rico	42.156971	1
9887	Never-married	<=50K	HS-grad	Private	Sales	Unmarried	?	-169.286342	1
3283	Married-civ-spouse	<=50K	Assoc-acdm	Local-gov	Craft-repair	Husband	Columbia	-193.545215	2
1369	Divorced	<=50K	HS-grad	Private	Machine-op-inspct	Other-relative	Columbia	60.661955	1

### SQL for Real:

SELECT `marital.status`,income,education,workclass,occupation,relationship, `native.country`,MIN(capital), COUNT(\*) FROM C1 WHERE (race IN ('Black', 'Amer-Indian-Eskimo', 'Other', 'White', 'Asian-Pac-Islander') AND `hours.per.week` BETWEEN 30 AND 60) OR (`marital.status` <> 'Never-married' OR occupation <> '?') AND ((age BETWEEN 20 AND 31) AND capital BETWEEN 0 AND 0) OR (sex LIKE 'Male' OR workclass <> 'Private') AND (education LIKE 'HS-grad' AND `native.country` <> 'United-States') AND ((fnlwgt BETWEEN 132551 AND 68006) AND relationship LIKE 'Not-in-family') GROUP BY

`marital.status`,income,education,workclass,occupation,relationship, `native.country`

Resulted in 8339 records

# SQL for Synthetic:

SELECT `marital.status`,income,education,workclass,occupation,relationship, `native.country`,MIN(capital), COUNT(\*) FROM C1\_syn\_06 WHERE (race IN ('Black', 'Amer-Indian-Eskimo', 'Other', 'White', 'Asian-Pac-Islander') AND `hours.per.week` BETWEEN 30 AND 60) OR (`marital.status` <> 'Never-married' OR occupation <> '?') AND ((age BETWEEN 20 AND 31) AND capital BETWEEN 0 AND 0) OR (sex LIKE 'Male' OR workclass <> 'Private') AND (education LIKE 'HS-grad' AND `native.country` <> 'United-States') AND ((fnlwgt BETWEEN 132551 AND 68006) AND relationship LIKE 'Not-in-family') GROUP BY `marital.status`, income, education, workclass, occupation, relationship, `native.country`

Resulted in 12979 records

Normalized Euclidean distance for (capital): 58.05

Hellinger Distance: 0.267

	workclass	occupation	relationship	native.country	AVG(`hours.per.week`)	COUNT(*)
132	Local-gov	Tech-support	Husband	United-States	42.600000	5.000000
125	Local-gov	Protective-serv	Not-in-family	Philippines	nan	nan
113	Local-gov	Prof-specialty	Own-child	Scotland	nan	nan
454	Private	Tech-support	Wife	United-States	39.555556	9.000000
169	Private	Adm-clerical	Own-child	Nicaragua	nan	nan

# Synthetic

	workclass	occupation	relationship	native.country	AVG( hours.per.week	) COUNT(*)
1	32 Local-gov	Tech-support	Husband	United-States	40.026417	1
1	25 Local-gov	Protective-serv	Not-in-family	Philippines	40.064246	1
1	13 Local-gov	Prof-specialty	Own-child	Scotland	40.048953	1
4	<b>54</b> Private	Tech-support	Wife	United-States	39.972136	5
1	<b>69</b> Private	Adm-clerical	Own-child	Nicaragua	39.474984	1

# SQL for Real:

SELECT workclass,occupation,relationship, `native.country`,AVG(`hours.per.week`), COUNT(\*) FROM C1 WHERE (education LIKE 'Assoc-acdm') OR (workclass = 'Private' AND race <> 'White') AND (`native.country` = 'United-States' AND age > 32) OR (income = '>50K' OR `hours.per.week` BETWEEN 32 AND 40) AND (fnlwgt = 67001 AND occupation IN ('?', 'Adm-clerical', 'Farming-fishing', 'Transport-moving', 'Tech-support', 'Other-service', 'Handlers-cleaners', 'Machine-op-inspct', 'Protective-serv', 'Priv-house-serv', 'Prof-specialty', 'Armed-Forces', 'Craft-repair', 'Exec-managerial', 'Sales')) AND ((capital BETWEEN 0 AND 0) AND relationship IN ('Husband', 'Unmarried', 'Other-relative')) GROUP BY workclass,occupation,relationship, `native.country`

Resulted in 343 records

# SQL for Synthetic:

SELECT workclass, occupation, relationship, `native.country`, AVG(`hours.per.week`), COUNT(\*) FROM C1\_syn\_06 WHERE (education LIKE 'Assoc-acdm') OR (workclass = 'Private' AND race <> 'White') AND (`native.country` = 'United-States' AND age > 32) OR (income = '>50K' OR `hours.per.week` BETWEEN 32 AND 40) AND (fnlwgt = 67001 AND occupation IN ('?', 'Adm-clerical', 'Farming-fishing', 'Transport-moving', 'Tech-support', 'Other-service', 'Handlers-cleaners', 'Machine-op-inspct', 'Priv-house-serv', 'Prof-specialty', 'Armed-Forces', 'Craft-repair', 'Exec-managerial', 'Sales')) AND ((capital BETWEEN 0 AND 0) AND relationship IN ('Husband', 'Unmarried', 'Other-relative')) GROUP BY workclass, occupation, relationship, `native.country`

Resulted in 599 records

Normalized Euclidean distance for ('hours.per.week'): 13.27

Hellinger Distance: 0.128

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						Real					
	workclass	sex	relationship	race	education	marital.status	native.country	income	occupation	MIN(fnlwgt)	COUNT(*)
1550	Local-gov	Male	Husband	White	Assoc-voc	Married-civ-spouse	United-States	<=50K	Tech-support	242150	1
5473	Private	Male	Other-relative	Amer-Indian-Eskimo	Some-college	Never-married	United-States	<=50K	Craft-repair	21755	1
1290	Local-gov	Female	Unmarried	White	Assoc-acdm	Divorced	United-States	<=50K	Prof-specialty	119199	1
4072	Private	Male	Husband	Asian-Pac-Islander	Bachelors	Married-civ-spouse	Thailand	>50K	Sales	190319	1
1858	Local-gov	Male	Own-child	White	Masters	Never-married	United-States	<=50K	Prof-specialty	110965	3

	workclass	sex	relationship	race	education	marital.status	native.country	income	occupation	MIN(fnlwgt)	COUNT(*)
1550	Local-gov	Male	Husband	White	Assoc-voc	Married-civ-spouse	United-States	<=50K	Tech-support	nan	nan
<b>5473</b>	Private	Male	Other-relative	Amer-Indian-Eskimo	Some-college	Never-married	United-States	<=50K	Craft-repair	nan	nan
1290	Local-gov	Female	Unmarried	White	Assoc-acdm	Divorced	United-States	<=50K	Prof-specialty	nan	nan
4072	Private	Male	Husband	Asian-Pac-Islander	Bachelors	Married-civ-spouse	Thailand	>50K	Sales	nan	nan
1858	Local-gov	Male	Own-child	White	Masters	Never-married	United-States	<=50K	Prof-specialty	nan	nan

### SQL for Real:

SELECT workclass,sex,relationship,race,education, `marital.status`, `native.country`, income,occupation,MIN(fnlwgt), COUNT(\*) FROM C1 WHERE (capital BETWEEN 0 AND 0) AND (fnlwgt > 188436 OR age > 33) AND (`native.country` LIKE 'United-States' AND relationship IN ('Other-relative', 'Unmarried', 'Not-in-family', 'Own-child', 'Wife', 'Husband')) OR (education LIKE 'Doctorate' OR race <> 'White') AND (workclass <> '?' AND `hours.per.week` BETWEEN 35 AND 40) GROUP BY workclass,sex,relationship,race,education, `marital.status`, `native.country`,income,occupation

Resulted in 8303 records

# SQL for Synthetic:

SQL for Synthetic:
SELECT workclass,sex,relationship,race,education, `marital.status`, `native.country`,income,occupation,MIN(fnlwgt), COUNT(\*) FROM C1\_syn\_06 WHERE (capital BETWEEN 0 AND 0) AND (fnlwgt > 188436 OR age > 33) AND (`native.country` LIKE 'United-States' AND relationship IN ('Other-relative', 'Unmarried', 'Not-in-family', 'Own-child', 'Wife', 'Husband')) OR (education LIKE 'Doctorate' OR race <> 'White') AND (workclass <> '?' AND `hours.per.week` BETWEEN 35 AND 40) GROUP BY workclass,sex,relationship,race,education, `marital.status`, `native.country`,income,occupation

Resulted in 2136 records

Normalized Euclidean distance for (fnlwgt): 22.36

Hellinger Distance: 0.265

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#### Real

	income	marital.status	education	native.country	race	sex	MIN(`hours.per.week`)	COUNT(*)
1	<b>64</b> <=50K	Widowed	5th-6th	United-States	White	Female	40	3
2	<b>68</b> >50K	Never-married	Some-college	United-States	White	Female	12	16
1	<b>31</b> <=50K	Separated	11th	United-States	White	Male	20	16
1	<b>02</b> <=50K	Never-married	1st-4th	United-States	White	Female	24	1
2	<b>65</b> >50K	Never-married	Masters	United-States	White	Male	32	42

# Synthetic

	income	marital.status	education	native.country	race sex	MIN(`hours.per.week`)	COUNT(*)
164	<=50K	Widowed	5th-6th	United-States	White Femal	e nan	nan
268	>50K	Never-married	Some-college	United-States	White Femal	e nan	nan
131	<=50K	Separated	11th	United-States	White Male	nan	nan
102	<=50K	Never-married	1st-4th	United-States	White Femal	e nan	nan
265	>50K	Never-married	Masters	United-States	White Male	nan	nan

# SQL for Real:

SELECT income, `marital.status`,education, `native.country`,race,sex,MIN(`hours.per.week'), COUNT(\*) FROM C1 WHERE (`native.country` LIKE 'United-States') AND (race = 'White' AND capital BETWEEN 0 AND 0) GROUP BY income, `marital.status`,education, `native.country`,race,sex

Resulted in 298 records

# SQL for Synthetic:

SELECT income, `marital.status`,education, `native.country`,race,sex,MIN(`hours.per.week'), COUNT(\*) FROM C1\_syn\_06 WHERE (`native.country` LIKE 'United-States') AND (race = 'White' AND capital BETWEEN 0 AND 0) GROUP BY income, `marital.status`,education, `native.country`,race,sex

Resulted in 0 records

Normalized Euclidean distance for (`hours.per.week`): nan

Hellinger Distance: nan

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		Real		
	workclass	marital.status	SUM(capital)	COUNT(
<b>39</b> S	elf-emp-not-inc	Widowed	160168	127
5	?	Separated	9070	97
32	Self-emp-inc	Widowed	196084	41
40	State-gov	Divorced	126774	316
<b>33</b> S	elf-emp-not-inc	Divorced	864447	432

# Synthetic

	workclass	marital.status	SUM(capital)	COUNT(*)
<b>39</b>	Self-emp-not-inc	Widowed	-2147.345970	144.000000
5	?	Separated	462.292496	85.000000
32	Self-emp-inc	Widowed	-95.740013	44.000000
40	State-gov	Divorced	215.444758	348.000000
33	Self-emp-not-inc	Divorced	-3529 007438	412 000000

# SOL for Real:

SELECT workclass, marital.status, SUM(capital), COUNT(\*) FROM C1 WHERE (sex IN ('Female', 'Male') OR race <> 'White') GROUP BY workclass, marital.status Resulted in 47 records

### SQL for Synthetic:

SELECT workclass, `marital.status`, SUM(capital), COUNT(\*) FROM C1\_syn\_06 WHERE (sex IN ('Female', 'Male') OR race <> 'White') GROUP BY workclass, `marital.status` Resulted in 47 records

Normalized Euclidean distance for (capital): 6.86

Hellinger Distance: 0.018

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#### Real

income	sex	relationship	education	marital.status	SUM(fnlwgt)	COUNT(*)
<b>258</b> <=50K	Female	Unmarried	Bachelors	Married-spouse-absent	1875306	12
<b>505</b> <=50K	Male	Own-child	Assoc-acdm	Divorced	1347024	7
<b>491</b> <=50K	Male	Own-child	12th	Married-civ-spouse	814377	3
<b>170</b> <=50K	Female	Own-child	7th-8th	Separated	446467	2
<b>165</b> <=50K	Female	Own-child	5th-6th	Never-married	1861128	9

### Synthetic

iı	ncome	sex	relationship	education	marital.status	SUM(fnlwgt)	COUNT(*)
258 <	<=50K	Female	Unmarried	Bachelors	Married-spouse-absent	2113435.429239	12.000000
505 <	<=50K	Male	Own-child	Assoc-acdm	Divorced	2538802.443326	14.000000
491 <	<=50K	Male	Own-child	12th	Married-civ-spouse	746505.900045	4.000000
170 <	<=50K	Female	Own-child	7th-8th	Separated	nan	nan
165 <	<=50K	Female	Own-child	5th-6th	Never-married	721228.099998	4.000000

#### SQL for Real:

SELECT income, sex, relationship, education, `marital.status`, SUM(fnlwgt), COUNT(\*) FROM C1 WHERE (`hours.per.week` = 40) OR ((capital BETWEEN 4386 AND 0) OR relationship = 'Not-in-family') OR (education LIKE '7th-8th' OR 'marital.status' LIKE 'Married-civ-spouse') AND (sex <> 'Male' AND occupation = '4dm-clerical') OR (income = '<=50K' OR race = 'White') OR (`native.country` LIKE 'United-States' OR fnlwgt = 271466) GROUP BY income, sex, relationship, education, `marital.status`

Resulted in 870 records

#### SOL for Synthetic:

SELECT income, sex, relationship, education, `marital.status`, SUM(fnlwgt), COUNT(\*) FROM C1 syn 06 WHERE (`hours.per.week` = 40) OR ((capital BETWEEN 4386 AND 0) OR relationship = 'Not-in-family') OR (education LIKE '7th-8th' OR `marital.status` LIKE 'Married-civ-spouse') AND (sex <> 'Male' AND occupation = 'Adm-clerical') OR (income = '<=50K' OR race = 'White') OR (`native.country` LIKE 'United-States' OR fnlwgt = 271466) GROUP BY income, sex, relationship, education, `marital.status'

Resulted in 836 records

Normalized Euclidean distance for (fnlwgt): 25.77

Hellinger Distance: 0.171

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# Real

	occupation	sex	native.country	marital.status	race	workclass	income	MAX(age)	COUNT(*)
78	?	Female	Peru	Divorced	White	Local-gov	<=50K	nan	nan
4305	Prof-specialty	Female	United-States	Widowed	Black	Local-gov	<=50K	66.000000	5.000000
1295	Craft-repair	Male	Puerto-Rico	Married-civ-spouse	Black	Federal-gov	<=50K	nan	nan
991	Craft-repair	Female	Puerto-Rico	Married-civ-spouse	White	Private	<=50K	nan	nan
2231	Farming-fishing	Female	Puerto-Rico	Divorced	White	State-gov	<=50K	nan	nan

# Synthetic

	occupation	sex	native.country	marital.status	race	workclass	income	MAX(age)	COUNT(*)
78	?	Female	Peru	Divorced	White	Local-gov	<=50K	41	1
4305	Prof-specialty	Female	United-States	Widowed	Black	Local-gov	<=50K	84	5
1295	Craft-repair	Male	Puerto-Rico	Married-civ-spouse	Black	Federal-gov	<=50K	55	1
991	Craft-repair	Female	Puerto-Rico	Married-civ-spouse	White	Private	<=50K	60	2
2231	Farming-fishing	Female	Puerto-Rico	Divorced	White	State-gov	<=50K	51	1

# SQL for Real:

SELECT occupation,sex, `native.country` , `marital.status`,race,workclass,income,MAX(age), COUNT(\*) FROM C1 WHERE (`native.country` <> 'United-States') OR (capital <> -2457 OR `marital.status` LIKE 'Never-married') AND (`hours.per.week` = 60 AND education = 'Some-college') OR (age = 41 OR occupation <> 'Adm-clerical') GROUP BY occupation,sex, `native.country`, `marital.status`,race,workclass,income

Resulted in 4526 records

# SQL for Synthetic:

SELECT occupation, sex, `native.country`, `marital.status`, race, workclass, income, MAX(age), COUNT(\*) FROM C1 syn 06 WHERE (`native.country` <> 'United-States') OR (capital <> -2457 OR `marital.status` LIKE 'Never-married') AND (`hours.per.week' = 60 AND education = 'Some-college') OR (age = 41 OR occupation <> 'Adm-clerical') GROUP BY occupation, sex, 'native.country', 'marital.status', race, workclass, income

Resulted in 6148 records

Normalized Euclidean distance for (age): 42.41

Hellinger Distance: 0.328

# Real

race	income	native.country	MIN(age)	COUNT(*)
<b>198</b> White	>50K	Jamaica	31.000000	1.000000
<b>163</b> White	<=50K	Jamaica	21.000000	4.000000
103 Black	>50K	Peru	nan	nan
116 Other	<=50K	Guatemala	19.000000	8.000000
63 Black	<=50K	?	18.000000	113.000000

### race income native.country MIN(age) COUNT(\*)

<b>198</b> White	>50K	Jamaica	55	2
<b>163</b> White	<=50K	Jamaica	31	42
103 Black	>50K	Peru	41	6
<b>116</b> Other	<=50K	Guatemala	33	2
63 Black	<=50K	?	18	113

#### SQL for Real:

SELECT race, income, `native.country`, MIN(age), COUNT(\*) FROM C1 WHERE (income = '<=50K') OR (workclass IN ('Self-emp-not-inc', 'Self-emp-inc', 'Federal-gov', '?', 'Private', 'Local-gov') OR `hours.per.week` BETWEEN 40 AND 40) OR (relationship IN ('Husband', 'Unmarried', 'Wife', 'Other-relative', 'Own-child') OR race IN ('White', 'Asian-Pac-Islander', 'Other')) GROUP BY race, income, `native.country`

Resulted in 199 records

# SQL for Synthetic:

SELECT race,income, `native.country`,MIN(age), COUNT(\*) FROM C1\_syn\_06 WHERE (income = '<=50K') OR (workclass IN ('Self-emp-not-inc', 'Self-emp-inc', 'Federal-gov', '?', 'Private', 'Local-gov') OR `hours.per.week` BETWEEN 40 AND 40) OR (relationship IN ('Husband', 'Unmarried', 'Wife', 'Other-relative', 'Own-child') OR race IN ('White', 'Asian-Pac-Islander', 'Other')) GROUP BY race,income, `native.country`

Resulted in 211 records

Normalized Euclidean distance for (age): 11.92

Hellinger Distance: 0.416

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Real

### income SUM(fnlwgt) COUNT(\*)

**1** >50K 1968158268 10436 **0** <=50K 6383479598 33659

Synthetic

# income SUM(fnlwgt) COUNT(\*)

1 >50K 203087643.548069 1154.000000

**0** <=50K 3978757941.296477 22069.000000

### SQL for Real:

SELECT income, SUM(fnlwgt), COUNT(\*) FROM C1 WHERE (education IN ('Preschool', '5th-6th', '12th', '7th-8th', 'Some-college', 'Masters', 'Assoc-acdm', 'Assoc-acdm', 'Assoc-acdm', 'Assoc-acdm', 'Prof-school', '10th', 'Doctorate', 'Bachelors', 'HS-grad') AND capital >= 0) OR (race <> 'White' OR workclass IN ('Self-emp-inc', 'Federal-gov', 'Local-gov', 'Self-emp-not-inc', '?', 'State-gov')) AND (sex = 'Female' AND `hours.per.week` > 50) AND (occupation <> 'Other-service' AND `marital.status` IN ('Divorced', 'Married-civ-spouse', 'Never-married', 'Married-spouse-absent', 'Widowed', 'Separated', 'Married-AF-spouse')) GROUP BY income

Resulted in 2 records

#### SQL for Synthetic:

SELECT income, SUM(fnlwgt), COUNT(\*) FROM C1\_syn\_06 WHERE (education IN ('Preschool', '5th-6th', '12th', '7th-8th', 'Some-college', 'Masters', 'Assoc-acdm', 'Assoc-voc', '1st-4th', 'Prof-school', '10th', 'Doctorate', 'Bachelors', 'HS-grad') AND capital >= 0) OR (race <> 'White' OR workclass IN ('Self-emp-inc', 'Federal-gov', 'Local-gov', 'Self-emp-not-inc', '?', 'State-gov')) AND (sex = 'Female' AND `hours.per.week` > 50) AND (occupation <> 'Other-service' AND `marital.status` IN ('Divorced', 'Married-civ-spouse', 'Never-married', 'Married-spouse-absent', 'Widowed', 'Separated', 'Married-AF-spouse')) GROUP BY income

Resulted in 2 records

Normalized Euclidean distance for (fnlwgt): 1.41

Hellinger Distance: 0.2

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# Real

	education	workclass	sex	occupation	marital.status	relationship	AVG(age)	COUNT(*)
5119	Some-college	Private	Female	Adm-clerical	Married-spouse-absent	Other-relative	18.000000	1.000000
5535	Some-college	Self-emp-inc	Male	Exec-managerial	Married-civ-spouse	Husband	47.375000	104.000000
3902	HS-grad	Self-emp-inc	Female	Sales	Never-married	Own-child	nan	nan
3778	B HS-grad	Private	Male	Other-service	Married-spouse-absent	Not-in-family	52.000000	5.000000
1202	7th-8th	Local-gov	Female	Other-service	Divorced	Unmarried	51.000000	1.000000

# Synthetic

		education	workclass	sex	occupation	marital.status	relationship	AVG(age)	COUNT(*)
	5119	Some-college	Private	Female	Adm-clerical	Married-spouse-absent	Other-relative	51.000000	1
	5535	Some-college	Self-emp-inc	Male	Exec-managerial	Married-civ-spouse	Husband	46.690722	97
:	3902	HS-grad	Self-emp-inc	Female	Sales	Never-married	Own-child	22.000000	1
:	3778	HS-grad	Private	Male	Other-service	Married-spouse-absent	Not-in-family	37.428571	7
	1202	7th-8th	Local-gov	Female	Other-service	Divorced	Unmarried	47.000000	3

# SQL for Real:

SELECT education, workclass, sex, occupation, `marital.status`, relationship, AVG(age), COUNT(\*) FROM C1 WHERE (education <> 'Bachelors' OR fnlwgt BETWEEN 180920 AND 401623) GROUP BY education, workclass, sex, occupation, `marital.status`, relationship

Resulted in 5745 records

# SQL for Synthetic:

SELECT education, workclass, sex, occupation, `marital.status`, relationship, AVG(age), COUNT(\*) FROM C1\_syn\_06 WHERE (education <> 'Bachelors' OR fnlwgt BETWEEN 180920 AND 401623) GROUP BY education, workclass, sex, occupation, `marital.status`, relationship

Resulted in 5807 records

Normalized Euclidean distance for (age): 59.53

Hellinger Distance: 0.134

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#### Real marital.status native.country MIN(age) COUNT(\*) workclass education 2098 Some-college Married-civ-spouse Thailand Private nan nan 638 Local-gov 12th United-States 56.000000 1.000000 Divorced 895 Local-gov Masters Divorced Ireland nan nan 10th ? 33.000000 3.000000 2404 Self-emp-not-inc Married-civ-spouse 893 Divorced England Local-gov Masters nan

Synthetic

	workclass	education	marital.status	native.country	MIN(age)	COUNT(*)
2098	Private	Some-college	Married-civ-spouse	Thailand	25	6
638	Local-gov	12th	Divorced	United-States	31	3
895	Local-gov	Masters	Divorced	Ireland	30	1
2404	Self-emp-not-inc	10th	Married-civ-spouse	?	48	3
893	Local-gov	Masters	Divorced	England	46	1

### SQL for Real:

SELECT workclass, education, `marital.status`, `native.country`, MIN(age), COUNT(\*) FROM C1 WHERE (workclass = 'Private' AND `native.country` LIKE 'United-States') OR ((capital BETWEEN 0 AND 0) OR age > 28) OR (occupation IN ('Tech-support', 'Farming-fishing', 'Adm-clerical') OR `marital.status` IN ('Married-civ-spouse', 'Married-spouse-absent', 'Never-married', 'Married-AF-spouse')) OR (sex <> 'Male' OR `hours.per.week` BETWEEN 40 AND 40) GROUP BY workclass, education, `marital.status`, `native.country`

Resulted in 2389 records

# SQL for Synthetic:

SELECT workclass,education, `marital.status`, `native.country`, MIN(age), COUNT(\*) FROM C1\_syn\_06 WHERE (workclass = 'Private' AND `native.country` LIKE 'United-States') OR ((capital BETWEEN 0 AND 0) OR age > 28) OR (occupation IN ('Tech-support', 'Farming-fishing', 'Adm-clerical') OR `marital.status` IN ('Married-civ-spouse', 'Married-spouse-absent', 'Never-married', 'Married-AF-spouse')) OR (sex <> 'Male' OR `hours.per.week` BETWEEN 40 AND 40) GROUP BY workclass,education, `marital.status`, `native.country`

Resulted in 2987 records

Normalized Euclidean distance for (age): 33.53

Hellinger Distance: 0.344

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### Real

	income	sex	AVG(`hours.per.week`)	COUNT(*)
1	<=50K	Male	39.941628	7812
0	<=50K	Female	39.840917	5846
3	>50K	Male	39.933242	2187
2	>50K	Female	39.846575	730

### Synthetic

	income	sex	AVG(`hours.per.week`)	COUNT(*)
1	<=50K	Male	39.821012	8376.000000
0	<=50K	Female	39.766481	8582.000000
3	>50K	Male	39.915380	654.000000
2	>50K	Female	39.928961	358.000000

# SQL for Real:

SELECT income,sex,AVG(`hours.per.week`), COUNT(\*) FROM C1 WHERE (fnlwgt < 176683 OR relationship <> 'Husband') AND (race IN ('Amer-Indian-Eskimo', 'Asian-Pac-Islander', 'Other', 'White') AND `hours.per.week` BETWEEN 37 AND 40) GROUP BY income,sex

Resulted in 4 records

# SQL for Synthetic:

SELECT income,sex,AVG(`hours.per.week`), COUNT(\*) FROM C1\_syn\_06 WHERE (fnlwgt < 176683 OR relationship <> 'Husband') AND (race IN ('Amer-Indian-Eskimo', 'Asian-Pac-Islander', 'Other', 'White') AND `hours.per.week` BETWEEN 37 AND 40) GROUP BY income,sex

Resulted in 4 records

Normalized Euclidean distance for ('hours.per.week'): 2.0

Hellinger Distance: 0.148

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# Real

	native.country	education	marital.status	occupation	race	MIN(age)	COUNT(*)
5398	United-States	9th	Separated	Other-service	Black	46.000000	5.000000
2240	Japan	HS-grad	Divorced	Adm-clerical	Black	nan	nan
5281	United-States	7th-8th	Married-spouse-absent	Other-service	White	47.000000	2.000000
5547	United-States	Assoc-voc	Married-civ-spouse	Craft-repair	White	21.000000	211.000000
2527	' Laos	Bachelors	Never-married	Sales	Asian-Pac-Islander	nan	nan

# Synthetic

	native.country	education	marital.status	occupation	race	MIN(age)	COUNT(*)
53	98 United-States	9th	Separated	Other-service	Black	33	3
22	<b>40</b> Japan	HS-grad	Divorced	Adm-clerical	Black	37	2
52	81 United-States	7th-8th	Married-spouse-absent	Other-service	White	36	1
55	47 United-States	Assoc-voc	Married-civ-spouse	Craft-repair	White	21	118
25	27 Laos	Bachelors	Never-married	Sales	Asian-Pac-Islander	27	2

# SQL for Rea

SELECT `native.country`, education, `marital.status`, occupation, race, MIN(age), COUNT(\*) FROM C1 WHERE (`marital.status` LIKE 'Never-married' AND age = 19) OR (`native.country` = 'United-States' OR relationship IN ('Wife', 'Husband', 'Not-in-family', 'Unmarried')) GROUP BY `native.country`, education, `marital.status`, occupation, race Resulted in 4528 records

# SQL for Synthetic:

SELECT `native.country`,education, `marital.status`,occupation,race,MIN(age), COUNT(\*) FROM C1\_syn\_06 WHERE (`marital.status` LIKE 'Never-married' AND age = 19)

OR (`native.country` = 'United-States' OR relationship IN ('Wife', 'Husband', 'Not-in-family', 'Unmarried')) GROUP BY `native.country`,education, `marital.status`,occupation,race

Resulted in 6546 records

Normalized Euclidean distance for (age): 43.49

Hellinger Distance: 0.254

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	relationship	education	workclass	marital.status	occupation	race	income	native.country 1	MIN(capital)	COUNT(*)
2439	Husband	Prof-school	Self-emp-not-inc	Married-civ-spouse	Farming-fishing	White	<=50K	United-States	0	2
4594	Not-in-family	HS-grad	Federal-gov	Separated	Exec-managerial	Black	<=50K	United-States	0	1
3968	Not-in-family	Bachelors	Federal-gov	Divorced	Tech-support	Amer-Indian-Eskimo	<=50K	United-States	0	1
6057	Other-relative	10th	?	Separated	?	White	<=50K	Puerto-Rico	0	1
8617	Unmarried	12th	Private	Divorced	Other-service	White	<=50K	United-States	0	2

#### Synthetic

	relationship	education	workclass	marital.status	occupation	race	income	native.country	MIN(capital)	COUNT(*)	
2439	Husband	Prof-school	Self-emp-not-inc	Married-civ-spouse	Farming-fishing	White	<=50K	United-States	-191.937311	2.000000	
4594	Not-in-family	HS-grad	Federal-gov	Separated	Exec-managerial	Black	<=50K	United-States	nan	nan	
3968	Not-in-family	Bachelors	Federal-gov	Divorced	Tech-support	Amer-Indian-Eskimo	<=50K	United-States	17.205487	1.000000	
6057	Other-relative	10th	?	Separated	?	White	<=50K	Puerto-Rico	nan	nan	
8617	Unmarried	12th	Private	Divorced	Other-service	White	<=50K	United-States	nan	nan	

#### SOL for Real:

SELECT relationship,education,workclass, 'marital.status',occupation,race,income, 'native.country',MIN(capital), COUNT(\*) FROM C1 WHERE (education LIKE 'Bachelors') OR ((capital BETWEEN 0 AND 0) OR 'hours.per.week' BETWEEN 40 AND 70) GROUP BY relationship,education,workclass, 'marital.status',occupation,race,income, 'native.country'

Resulted in 11159 records

#### SOL for Synthetic:

SELECT relationship,education,workclass, 'marital.status',occupation,race,income, 'native.country',MIN(capital), COUNT(\*) FROM C1\_syn\_06 WHERE (education LIKE 'Bachelors') OR ((capital BETWEEN 0 AND 0) OR 'hours.per.week' BETWEEN 40 AND 70) GROUP BY relationship,education,workclass, 'marital.status',occupation,race,income, 'native.country'

Resulted in 10177 records

Normalized Euclidean distance for (capital): 53.77

Hellinger Distance: 0.302

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### Real

	marital.status	education	income	MIN(capital)	COUNT(*)
8	Never-married	Assoc-acdm	<=50K	0	1
4	Divorced	Some-college	<=50K	0	2
18	Widowed	Assoc-acdm	<=50K	0	1
19	Widowed	Bachelors	<=50K	0	1
10	Never-married	Bachelors	<=50K	0	11

# Synthetic

	marital.status	education	income	MIN(capital)	COUNT(*
8	Never-married	Assoc-acdm	<=50K	nan	nan
4	Divorced	Some-college	<=50K	nan	nan
18	Widowed	Assoc-acdm	<=50K	nan	nan
19	Widowed	Bachelors	<=50K	nan	nan
10	Never-married	Bachelors	<=50K	nan	nan

# SQL for Real:

SELECT `marital.status`,education,income,MIN(capital), COUNT(\*) FROM C1 WHERE (`hours.per.week` = 50) AND (education LIKE 'Some-college' OR workclass IN ('Stategov', 'Self-emp-not-inc', 'Private')) AND (race = 'White' AND sex = 'Female') AND (`native.country` IN ('China', 'Cambodia', 'Italy', 'Philippines', 'Japan', 'Trinadad&Tobago', 'Jamaica', 'Nicaragua', 'Taiwan', 'Iran', 'El-Salvador', 'Peru', 'Guatemala', 'Scotland', 'Puerto-Rico', 'Honduras', 'Haiti', 'Holand-Netherlands', 'South', 'United-States', 'Hungary', 'Mexico', 'France', 'Canada', 'Germany', 'Columbia', 'Laos', 'Greece', 'Portugal', 'India', 'Hong', 'England', 'Vietnam') AND capital = 0) AND (occupation = 'Prof-specialty' AND income <> '>50K') GROUP BY `marital.status`,education,income

Resulted in 20 records

# SQL for Synthetic:

SELECT marital.status`,education,income,MIN(capital), COUNT(\*) FROM C1\_syn\_06 WHERE (`hours.per.week` = 50) AND (education LIKE 'Some-college' OR workclass IN ('State-gov', 'Self-emp-not-inc', 'Private')) AND (race = 'White' AND sex = 'Female') AND (`native.country` IN ('China', 'Cambodia', 'Italy', 'Philippines', 'Japan', 'Trinadad&Tobago', 'Jamaica', 'Nicaragua', 'Taiwan', 'Iran', 'El-Salvador', 'Peru', 'Guatemala', 'Scotland', 'Puerto-Rico', 'Honduras', 'Haiti', 'Holand-Netherlands', 'South', 'United-States', 'Hungary', 'Mexico', 'France', 'Canada', 'Germany', 'Columbia', 'Laos', 'Greece', 'Portugal', 'India', 'Hong', 'England', 'Ireland', 'Vietnam') AND capital = 0) AND (occupation = 'Prof-specialty' AND income <> '>50K') GROUP BY `marital.status`,education,income

Resulted in 0 records

Normalized Euclidean distance for (capital): nan

Hellinger Distance: nan

# Real

# sex SUM(capital) COUNT(\*)

**0** Female 7806422 16063 **1** Male 2887029 22770

### sex SUM(capital) COUNT(\*)

**0** Female 20424.064231 17063.000000

1 Male 202630.857775 27731.000000

#### SQL for Real:

SELECT sex,SUM(capital), COUNT(\*) FROM C1 WHERE (income = '<=50K') OR ((fnlwgt BETWEEN 308365 AND 221581) OR age < 59) AND (sex <> 'Male' AND race IN ('Other', 'Asian-Pac-Islander', 'Amer-Indian-Eskimo', 'Black', 'White')) OR (`marital.status` <> 'Married-civ-spouse' OR `hours.per.week` BETWEEN 60 AND 40) AND (workclass LIKE 'Private' AND education LIKE 'Prof-school') GROUP BY sex

Resulted in 2 records

#### **SQL for Synthetic:**

SELECT sex,SUM(capital), COUNT(\*) FROM C1\_syn\_06 WHERE (income = '<=50K') OR ((fnlwgt BETWEEN 308365 AND 221581) OR age < 59) AND (sex <> 'Male' AND race IN ('Other', 'Asian-Pac-Islander', 'Amer-Indian-Eskimo', 'Black', 'White')) OR (`marital.status` <> 'Married-civ-spouse' OR `hours.per.week` BETWEEN 60 AND 40) AND (workclass LIKE 'Private' AND education LIKE 'Prof-school') GROUP BY sex

Resulted in 2 records

Normalized Euclidean distance for (capital): 1.41

Hellinger Distance: 0.024

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#### Real

	sex	income	relationship	native.country	AVG(age)	COUNT(*
485	Male	>50K	Unmarried	France	47.000000	1
159	Female	<=50K	Wife	Portugal	32.000000	2
<b>390</b>	Male	<=50K	Unmarried	Mexico	31.275862	29
399	Male	<=50K	Unmarried	United-States	37.848907	503
218	Female	>50K	Wife	Iran	38.000000	2

#### Synthetic

# sex income relationship native.country AVG(age) COUNT(\*)

485	Male	>50K	Unmarried	France	nan	nan
159	Female	<=50K	Wife	Portugal	nan	nan
390	Male	<=50K	Unmarried	Mexico	nan	nan
399	Male	<=50K	Unmarried	United-States	nan	nan
218	Female	>50K	Wife	Iran	30 666667	3 000000

# SQL for Real:

SELECT sex,income,relationship, `native.country`,AVG(age), COUNT(\*) FROM C1 WHERE (`hours.per.week` = 40) OR (education IN ('11th', 'HS-grad', '7th-8th', 'Bachelors', 'Doctorate', '5th-6th', '12th', 'Assoc-voc', 'Prof-school', '1st-4th', 'Some-college', 'Masters') AND `native.country` IN ('China', 'Yugoslavia', 'Greece', 'Poland', 'Trinadad&Tobago', 'England', 'Canada', 'Ireland', 'Dominican-Republic', 'Haiti', 'El-Salvador', 'Italy', 'Jamaica')) OR (occupation = 'Machine-op-inspct' OR workclass LIKE 'Private') AND (finlwgt = 50149 AND sex = 'Male') AND (`marital.status` IN ('Widowed', 'Married-civ-spouse', 'Separated', 'Never-married', 'Married-spouse-absent') AND capital >= 0) OR ((age BETWEEN 37 AND 21) OR income LIKE '>50K') GROUP BY sex,income,relationship, `native.country`

Resulted in 493 records

# SQL for Synthetic:

Select sex, income, relationship, `native.country`, AVG(age), COUNT(\*) FROM C1\_syn\_06 WHERE (`hours.per.week` = 40) OR (education IN ('11th', 'HS-grad', '7th-8th', 'Bachelors', 'Doctorate', '5th-6th', '12th', 'Assoc-voc', 'Prof-school', '1st-4th', 'Some-college', 'Masters') AND `native.country` IN ('China', 'Yugoslavia', 'Greece', 'Poland', 'Trinadad&Tobago', 'England', 'Canada', 'Ireland', 'Dominican-Republic', 'Haiti', 'El-Salvador', 'Italy', 'Jamaica')) OR (occupation = 'Machine-op-inspct' OR workclass LIKE 'Private') AND (fnlwgt = 50149 AND sex = 'Male') AND (`marital.status` IN ('Widowed', 'Married-civ-spouse', 'Married-AF-spouse', 'Separated', 'Never-married', 'Married-spouse-absent') AND capital >= 0) OR ((age BETWEEN 37 AND 21) OR income LIKE '>50K') GROUP BY sex,income, relationship, `native.country`

Resulted in 205 records

Normalized Euclidean distance for (age): 12.37

Hellinger Distance: 0.404

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# Real

	workclass	education	relationship	marital.status	occupation	income	sex	MAX(fnlwgt)	COUNT(*)
34	Self-emp-not-inc	Bachelors	Own-child	Never-married	Craft-repair	<=50K	Male	216178	2
18	Private	Bachelors	Own-child	Never-married	Craft-repair	>50K	Male	31493	1
4	Local-gov	Bachelors	Not-in-family	Never-married	Craft-repair	>50K	Male	158291	1
13	Private	Bachelors	Not-in-family	Widowed	Craft-repair	>50K	Male	244605	1
1	Local-gov	Bachelors	Husband	Married-civ-spouse	Craft-repair	<=50K	Male	523910	6

# Synthetic

	workclass	education	relationship	marital.status	occupation	income	sex	MAX(fnlwgt)	COUNT(*)
34	Self-emp-not-inc	Bachelors	Own-child	Never-married	Craft-repair	<=50K	Male	nan	nan
18	Private	Bachelors	Own-child	Never-married	Craft-repair	>50K	Male	nan	nan
4	Local-gov	Bachelors	Not-in-family	Never-married	Craft-repair	>50K	Male	nan	nan
13	Private	Bachelors	Not-in-family	Widowed	Craft-repair	>50K	Male	nan	nan
1	Local-gov	Bachelors	Husband	Married-civ-spouse	Craft-repair	<=50K	Male	193107.003786	4.000000

# SQL for Real:

SELECT workclass,education,relationship, `marital.status`,occupation,income,sex,MAX(fnlwgt), COUNT(\*) FROM C1 WHERE (`native.country` LIKE 'United-States' OR relationship IN ('Other-relative', 'Wife')) AND (capital >= 0 AND sex = 'Male') AND (occupation LIKE 'Craft-repair' AND education LIKE 'Bachelors') GROUP BY workclass,education,relationship, `marital.status`,occupation,income,sex

Resulted in 41 records

# SQL for Synthetic:

SELECT workclass, education, relationship, `marital.status`, occupation, income, sex, MAX(fnlwgt), COUNT(\*) FROM C1\_syn\_06 WHERE (`native.country` LIKE 'United-States' OR relationship IN ('Other-relative', 'Wife')) AND (capital >= 0 AND sex = 'Male') AND (occupation LIKE 'Craft-repair' AND education LIKE 'Bachelors') GROUP BY workclass, education, relationship, `marital.status`, occupation, income, sex

Resulted in 23 records

Normalized Euclidean distance for (fnlwgt): 4.47

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#### Real

	native.country	race	relationship	sex	income	marital.status	workclass	occupation	education	MIN(`hours.per.week`)	COUNT(*)
14825	United-States	White	Other-relative	Female	<=50K	Divorced	Private	Exec-managerial	HS-grad	40.000000	3.000000
1678	Columbia	White	Not-in-family	Male	<=50K	Widowed	Private	Transport-moving	HS-grad	nan	nan
11124	United-States	Black	Husband	Male	<=50K	Married-civ-spouse	Private	Tech-support	Some-college	14.000000	4.000000
9302	Puerto-Rico	White	Unmarried	Female	<=50K	Married-spouse-absent	Private	Adm-clerical	10th	nan	nan
9971	Scotland	White	Husband	Male	<=50K	Married-civ-spouse	Private	Other-service	HS-grad	nan	nan

### Synthetic

	native.country	race	relationship	sex	income	marital.status	workclass	occupation	education	MIN('hours.per.week')	COUNT(*)
14825	United-States	White	Other-relative	Female	<=50K	Divorced	Private	Exec-managerial	HS-grad	39.991997	1
1678	Columbia	White	Not-in-family	Male	<=50K	Widowed	Private	Transport-moving	HS-grad	39.994779	2
11124	United-States	Black	Husband	Male	<=50K	Married-civ-spouse	Private	Tech-support	Some-college	39.916384	2
9302	Puerto-Rico	White	Unmarried	Female	<=50K	Married-spouse-absent	Private	Adm-clerical	10th	40.032068	1
9971	Scotland	White	Husband	Male	<=50K	Married-civ-spouse	Private	Other-service	HS-grad	40.014116	1

#### SOL for Real:

SELECT `native.country`,race,relationship,sex,income, `marital.status`,workclass,occupation,education,MIN(`hours.per.week`), COUNT(\*) FROM C1 WHERE ('hours.per.week` BETWEEN 45 AND 55) OR (occupation <> 'Priv-house-serv' AND income LIKE '>50K') OR (sex IN ('Female', 'Male') OR workclass = 'Private') OR (race IN ('White', 'Black', 'Amer-Indian-Eskimo', 'Asian-Pac-Islander', 'Other') OR education IN ('Some-college', 'Preschool', 'Bachelors', '1st-4th', '9th', 'Prof-school', 'HS-grad', '11th', '5th-6th', '10th', '12th', 'Masters', 'Assoc-acdm', '7th-8th', 'Doctorate')) OR (`native.country` IN ('Japan', 'China', 'England') OR capital = 0) GROUP BY `native.country`, race,relationship,sex,income, `marital.status`,workclass,occupation,education

Resulted in 12664 records

# SQL for Synthetic:

SELECT 'native.country', race, relationship, sex, income, 'marital.status', workclass, occupation, education, MIN( 'hours.per.week'), COUNT(\*) FROM C1\_syn\_06 WHERE ('hours.per.week') BETWEEN 45 AND 55) OR (occupation <> 'Priv-house-serv' AND income LIKE '>50K') OR (sex IN ('Female', 'Male') OR workclass = 'Private') OR (race IN ('White', 'Black', 'Amer-Indian-Eskimo', 'Asian-Pac-Islander', 'Other') OR education IN ('Some-college', 'Preschool', 'Bachelors', '1st-4th', '9th', 'Prof-school', '11th', '10th', '12th', 'Masters', 'Assoc-acdm', '7th-8th', 'Doctorate')) OR ('native.country` IN ('Japan', 'China', 'England') OR capital = 0) GROUP BY 'native.country', race, relationship, sex, income, 'marital.status', workclass, occupation, education

Resulted in 17127 records

Normalized Euclidean distance for (`hours.per.week`): 64.61

Hellinger Distance: 0.252

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### Real

sex	native.country	occupation	race	education	marital.status	AVG(fnlwgt)	COUNT(*)
<b>5605</b> Male	United-States	Prof-specialty	Amer-Indian-Eskimo	HS-grad	Never-married	nan	nan
<b>5533</b> Male	United-States	Other-service	Asian-Pac-Islander	Some-college	Separated	nan	nan
<b>4312</b> Male	Puerto-Rico	Craft-repair	Black	HS-grad	Never-married	nan	nan
<b>5599</b> Male	United-States	Other-service	White	Some-college	Separated	63602.500000	2.000000
<b>5242</b> Male	United-States	Exec-managerial	Amer-Indian-Eskimo	Some-college	Married-civ-spouse	32587.000000	1.000000

# Synthetic

sex	native.country	occupation	race	education	marital.status	AVG(fnlwgt)	COUNT(*)
<b>5605</b> Male	United-States	Prof-specialty	Amer-Indian-Eskimo	HS-grad	Never-married	185170.626323	1
<b>5533</b> Male	United-States	Other-service	Asian-Pac-Islander	Some-college	Separated	173240.210958	1
<b>4312</b> Male	Puerto-Rico	Craft-repair	Black	HS-grad	Never-married	176524.388731	2
<b>5599</b> Male	United-States	Other-service	White	Some-college	Separated	175588.422500	2
<b>5242</b> Male	United-States	Exec-managerial	Amer-Indian-Eskimo	Some-college	Married-civ-spouse	171862.046118	2

# SQL for Real

SELECT sex, 'native.country',occupation,race,education, 'marital.status',AVG(fnlwgt), COUNT(\*) FROM C1 WHERE (capital < 0) GROUP BY sex, 'native.country',occupation,race,education, 'marital.status'

Resulted in 756 records

# SQL for Synthetic:

SELECT sex, `native.country`,occupation,race,education, `marital.status`,AVG(fnlwgt), COUNT(\*) FROM C1\_syn\_06 WHERE (capital < 0) GROUP BY sex, `native.country`,occupation,race,education, `marital.status`

Resulted in 5927 records

Normalized Euclidean distance for (fnlwgt): 22.87

Hellinger Distance: 0.268

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# Real

	workclass	MAX(`hours.per.week`)	COUNT(*
3	Private	99	32689
5	Self-emp-not-inc	99	3862
0	?	99	2830
1	Federal-gov	99	1432
6	State-gov	99	1981

	workclass	MAX(`hours.per.week`)	COUNT(*)
3	Private	40.592070	32654.000000
5	Self-emp-not-inc	40.527407	3818.000000
0	?	40.382698	2844.000000
1	Federal-gov	40.128197	1426.000000
6	State-gov	40.128433	1982.000000

#### SQL for Real

SELECT workclass, MAX(`hours.per.week`), COUNT(\*) FROM C1 WHERE (capital > 0) AND (relationship = 'Husband' OR income LIKE '<=50K') OR (`native.country` IN ('Jamaica', 'Thailand', 'England', 'Nicaragua', 'Puerto-Rico', 'Japan', 'United-States', 'Laos') OR occupation LIKE '?') OR (age < 39 OR workclass <> 'Private') GROUP BY workclass

Resulted in 7 records

# SQL for Synthetic:

SELECT workclass, MAX(`hours.per.week`), COUNT(\*) FROM C1\_syn\_06 WHERE (capital > 0) AND (relationship = 'Husband' OR income LIKE '<=50K') OR (`native.country` IN ('Jamaica', 'Thailand', 'England', 'Nicaragua', 'Puerto-Rico', 'Japan', 'United-States', 'Laos') OR occupation LIKE '?') OR (age < 39 OR workclass <> 'Private') GROUP BY workclass

Resulted in 7 records

Normalized Euclidean distance for ('hours.per.week'): 2.65

Hellinger Distance: 0.002

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	marital.status	Real race	MIN(age)	COUNT(*)
5	Married-civ-spouse	Asian-Pac-Islander	30	3
0	Divorced	Amer-Indian-Eskimo	30	1
9	Married-spouse-absent	White	30	1
3	Divorced	White	30	13
6	Married-civ-spouse	Black	31	1

### Synthetic

	marital.status	race	MIN(age)	COUNT(*)
5	Married-civ-spouse	Asian-Pac-Islander	nan	nan
0	Divorced	Amer-Indian-Eskimo	nan	nan
9	Married-spouse-absent	White	nan	nan
3	Divorced	White	nan	nan
6	Married-civ-spouse	Black	nan	nan

#### SQL for Real:

SELECT `marital.status`,race,MIN(age), COUNT(\*) FROM C1 WHERE (sex <> 'Male' OR `marital.status` IN ('Married-AF-spouse', 'Married-spouse-absent')) AND (capital = 0 AND age BETWEEN 30 AND 33) AND (income = '<=50K' AND occupation LIKE 'Sales') AND (workclass = 'Private' AND relationship <> 'Not-in-family') GROUP BY `marital.status`,race

Resulted in 16 records

# SQL for Synthetic:

SELECT 'marital.status', race, MIN(age), COUNT(\*) FROM C1\_syn\_06 WHERE (sex <> 'Male' OR 'marital.status' IN ('Married-AF-spouse', 'Married-spouse-absent')) AND (capital = 0 AND age BETWEEN 30 AND 33) AND (income = '<=50K' AND occupation LIKE 'Sales') AND (workclass = 'Private' AND relationship <> 'Not-in-family') GROUP BY 'marital.status', race

Resulted in 0 records

Normalized Euclidean distance for (age): nan

Hellinger Distance: nan

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Real

# income MAX(age) COUNT(\*)

**0** <=50K 90 35461 **1** >50K 90 11557

Synthetic

# income MAX(age) COUNT(\*)

**0** <=50K 90.000000 42168.000000

**1** >50K 90.000000 4707.000000

# SQL for Real:

SELECT income,MAX(age), COUNT(\*) FROM C1 WHERE (occupation <> 'Handlers-cleaners') OR (sex <> 'Male' AND capital >= 0) GROUP BY income Resulted in 2 records

# SQL for Synthetic:

SELECT income, MAX(age), COUNT(\*) FROM C1\_syn\_06 WHERE (occupation <> 'Handlers-cleaners') OR (sex <> 'Male' AND capital >= 0) GROUP BY income Resulted in 2 records

Normalized Euclidean distance for (age): 1.41

Hellinger Distance: 0.139

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					Real			
	race	education	sex	workclass	marital.status	occupation	MIN(capital)	COUNT(*)
246	Black	Some-college	Female	Private	Never-married	Protective-serv	99999	1
115	Asian-Pac-Islander	Some-college	Male	Federal-gov	Married-civ-spouse	Exec-managerial	0	1
180	Black	HS-grad	Male	Local-gov	Married-civ-spouse	Protective-serv	0	4
191	Black	HS-grad	Male	Private	Married-civ-spouse	Transport-moving	-1887	11
228	Black	Masters	Male	Private	Never-married	Exec-managerial	-1564	3

	race	education	sex	workclass	marital.status	occupation	MIN(capital)	COUNT(*)
246	Black	Some-college	Female	Private	Never-married	Protective-serv	nan	nan
<b>115</b> Asi	an-Pac-Islander	Some-college	Male	Federal-gov	Married-civ-spouse	Exec-managerial	nan	nan
180	Black	HS-grad	Male	Local-gov	Married-civ-spouse	Protective-serv	-243.928161	2.000000
191	Black	HS-grad	Male	Private	Married-civ-spouse	Transport-moving	-270.066186	5.000000
228	Black	Masters	Male	Private	Never-married	Exec-managerial	nan	nan

### SQL for Real:

SELECT race, education, sex, workclass, `marital.status`, occupation, MIN(capital), COUNT(\*) FROM C1 WHERE (occupation <> 'Craft-repair' AND income LIKE '>50K') AND (relationship IN ('Own-child', 'Other-relative', 'Not-in-family', 'Wife', 'Unmarried', 'Husband') AND race <> 'White') AND (age <> 25 AND education IN ('Doctorate', '1st-4th', '9th', 'Some-college', '12th', '10th', 'Assoc-voc', 'Preschool', 'HS-grad', '5th-6th', 'Masters')) GROUP BY race, education, sex, workclass, `marital.status`, occupation

Resulted in 300 records

### SQL for Synthetic:

SELECT race,education,sex,workclass, `marital.status`,occupation,MIN(capital), COUNT(\*) FROM C1\_syn\_06 WHERE (occupation <> 'Craft-repair' AND income LIKE '>50K')
AND (relationship IN ('Own-child', 'Other-relative', 'Not-in-family', 'Wife', 'Unmarried', 'Husband') AND race <> 'White') AND (age <> 25 AND education IN ('Doctorate', '1st-4th', '9th', 'Some-college', '12th', '10th', 'Assoc-voc', 'Preschool', 'HS-grad', '5th-6th', 'Masters')) GROUP BY race,education,sex,workclass, `marital.status`,occupation

Resulted in 125 records

Normalized Euclidean distance for (capital): 7.81

Hellinger Distance: 0.216

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	native.country	occupation	race	sex	marital.status	education	relationship	income	workclass	MAX(age)	COUNT(*)
7688	United-States	Machine-op-inspct	Asian-Pac-Islander	Male	Never-married	HS-grad	Own-child	<=50K	Private	nan	nan
4140	Puerto-Rico	Exec-managerial	White	Male	Married-civ-spouse	Assoc-acdm	Husband	>50K	Local-gov	nan	nan
208	?	Exec-managerial	White	Male	Married-civ-spouse	Some-college	Husband	>50K	Private	52.000000	1.000000
7194	United-States	Exec-managerial	White	Male	Widowed	Bachelors	Not-in-family	<=50K	State-gov	nan	nan
1297	Germany	Machine-op-inspct	White	Male	Married-civ-spouse	7th-8th	Husband	<=50K	Private	nan	nan

### Synthetic

	native.country	occupation	race	sex	marital.status	education	relationship	income	workclass	MAX(age)	COUNT(*)
7688	United-States	Machine-op-inspct	Asian-Pac-Islander	Male	Never-married	HS-grad	Own-child	<=50K	Private	23	2
4140	Puerto-Rico	Exec-managerial	White	Male	Married-civ-spouse	Assoc-acdm	Husband	>50K	Local-gov	60	1
208	?	Exec-managerial	White	Male	Married-civ-spouse	Some-college	Husband	>50K	Private	62	6
7194	United-States	Exec-managerial	White	Male	Widowed	Bachelors	Not-in-family	<=50K	State-gov	58	2
1297	Germany	Machine-op-inspct	White	Male	Married-civ-spouse	7th-8th	Husband	<=50K	Private	33	2

# SQL for Real:

SELECT `native.country`,occupation,race,sex, `marital.status`,education,relationship,income,workclass,MAX(age), COUNT(\*) FROM C1 WHERE (sex = 'Male') OR (fnlwgt <= 181130 AND income LIKE '>50K') AND ((age BETWEEN 43 AND 28) AND occupation = 'Sales') GROUP BY `native.country`,occupation,race,sex, `marital.status`,education,relationship,income,workclass

Resulted in 7386 records

# SQL for Synthetic:

SELECT `native.country`, occupation, race, sex, `marital.status`, education, relationship, income, workclass, MAX(age), COUNT(\*) FROM C1\_syn\_06 WHERE (sex = 'Male') OR (fnlwgt <= 181130 AND income LIKE '>50K') AND ((age BETWEEN 43 AND 28) AND occupation = 'Sales') GROUP BY `native.country`, occupation, race, sex, `marital.status`, education, relationship, income, workclass

Resulted in 9548 records

Normalized Euclidean distance for (age): 49.57

Hellinger Distance: 0.274

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# Real

# relationship native.country SUM(`hours.per.week`) COUNT(\*)

**0** Unmarried United-States 466 12

# Synthetic

# relationship native.country SUM(`hours.per.week`) COUNT(\*)

**0** Unmarried United-States 239.608729 6.00000

# SQL for Real:

SELECT relationship, `native.country`, SUM(`hours.per.week`), COUNT(\*) FROM C1 WHERE (sex LIKE 'Male' AND education IN ('Doctorate', 'Prof-school', 'Some-college', '5th-6th')) AND (occupation <> 'Adm-clerical' AND workclass IN ('?', 'Private', 'Local-gov')) AND (relationship LIKE 'Unmarried' AND capital <= 0) AND ((age BETWEEN 21 AND 48) AND `native.country` LIKE 'United-States') AND (race LIKE 'Black' AND income IN ('>50K', '<=50K')) GROUP BY relationship, `native.country`

Resulted in 1 records

# SQL for Synthetic:

SELECT relationship, `native.country`, SUM(`hours.per.week`), COUNT(\*) FROM C1\_syn\_06 WHERE (sex LIKE 'Male' AND education IN ('Doctorate', 'Prof-school', 'Some-college', '5th-6th')) AND (occupation <> 'Adm-clerical' AND workclass IN ('?', 'Private', 'Local-gov')) AND (relationship LIKE 'Unmarried' AND capital <= 0) AND ((age BETWEEN 21 AND 48) AND `native.country` LIKE 'United-States') AND (race LIKE 'Black' AND income IN ('>50K', '<=50K')) GROUP BY relationship, `native.country`

Resulted in 1 records

Normalized Euclidean distance for ('hours.per.week'): 0.0

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Real
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income	native.country	race	relationship	sex	marital.status	MAX(capital)	COUNT(*)
<b>909</b> <=50K	United-States	Asian-Pac-Islander	Wife	Female	Married-civ-spouse	3464.000000	3.000000
<b>358</b> <=50K	Hungary	White	Own-child	Female	Never-married	nan	nan
<b>731</b> <=50K	Puerto-Rico	Other	Wife	Female	Married-civ-spouse	nan	nan
<b>200</b> <=50K	Ecuador	White	Own-child	Female	Never-married	0.000000	2.000000
<b>603</b> <=50K Out	tlying-US(Guam-USVI-etc)	White	Other-relative	Male	Divorced	nan	nan

### Synthetic

income	native.country	race	relationship	sex	marital.status	MAX(capital)	COUNT(*)
<b>909</b> <=50K	United-States	Asian-Pac-Islander	Wife	Female	Married-civ-spouse	120.832636	3
<b>358</b> <=50K	Hungary	White	Own-child	Female	Never-married	156.738520	18
<b>731</b> <=50K	Puerto-Rico	Other	Wife	Female	Married-civ-spouse	-244.557949	1
<b>200</b> <=50K	Ecuador	White	Own-child	Female	Never-married	278.022809	8
<b>603</b> <=50K	Outlying-US(Guam-USVI-etc)	White	Other-relative	Male	Divorced	213.469716	1

#### SOL for Real:

SELECT income, `native.country`,race,relationship,sex,`marital.status`,MAX(capital), COUNT(\*) FROM C1 WHERE (race = 'White') OR (education = 'HS-grad' AND `hours.per.week` < 40) GROUP BY income, `native.country`,race,relationship,sex,`marital.status`

Resulted in 886 records

# SQL for Synthetic:

SELECT income, `native.country`,race,relationship,sex, `marital.status`,MAX(capital), COUNT(\*) FROM C1\_syn\_06 WHERE (race = 'White') OR (education = 'HS-grad' AND `hours.per.week` < 40) GROUP BY income, `native.country`,race,relationship,sex, `marital.status`

Resulted in 1238 records

Normalized Euclidean distance for (capital): 21.79

Hellinger Distance: 0.408

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#### Real

	occupation	sex	income	race	education	marital.status	native.country	SUM(fnlwgt)	COUNT(*)
383	Transport-moving	Male	<=50K	White	10th	Separated	United-States	182237	1
372	Tech-support	Male	>50K	White	Some-college	Married-civ-spouse	Mexico	441949	1
56	Adm-clerical	Male	>50K	White	Assoc-acdm	Married-civ-spouse	United-States	114937	1
99	Craft-repair	Male	>50K	White	Bachelors	Married-civ-spouse	United-States	408700	2
337	Sales	Male	<=50K	White	HS-grad	Divorced	United-States	19491	1

# Synthetic

	occupation	sex	income	race	education	marital.status	native.country	SUM(fnlwgt)	COUNT(*)
383	Transport-moving	Male	<=50K	White	10th	Separated	United-States	nan	nan
372	2 Tech-support	Male	>50K	White	Some-college	Married-civ-spouse	Mexico	nan	nan
56	Adm-clerical	Male	>50K	White	Assoc-acdm	Married-civ-spouse	United-States	nan	nan
99	Craft-repair	Male	>50K	White	Bachelors	Married-civ-spouse	United-States	nan	nan
337	Sales	Male	<=50K	White	HS-grad	Divorced	United-States	nan	nan

# SQL for Real:

SELECT occupation, sex, income, race, education, `marital.status`, `native.country`, SUM(fnlwgt), COUNT(\*) FROM C1 WHERE (`marital.status` <> 'Never-married' OR education <> 'Bachelors') AND (age = 31 AND `hours.per.week` = 40) GROUP BY occupation, sex, income, race, education, `marital.status`, `native.country`

Resulted in 397 records

# SQL for Synthetic:

SELECT occupation,sex,income,race,education, `marital.status`, `native.country`,SUM(fnlwgt), COUNT(\*) FROM C1\_syn\_06 WHERE (`marital.status` <> 'Never-married' OR education <> 'Bachelors') AND (age = 31 AND `hours.per.week` = 40) GROUP BY occupation,sex,income,race,education, `marital.status`, `native.country`

Resulted in 0 records

Normalized Euclidean distance for (fnlwgt): nan

Hellinger Distance: nan

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# Real

# native.country relationship SUM(fnlwgt) COUNT(\*)

104	Iran	Not-in-family	2149124	12
158	Peru	Wife	727522	3
31	Cuba	Other-relative	1156985	5
48	El-Salvador	Other-relative	5847565	27
34	Cuba	Wife	1295401	6

# Synthetic

	native.country	relationship	SUM(fnlwgt)	COUNT(*)
104	Iran	Not-in-family	10324335.539470	55.000000
158	Peru	Wife	7404141.130616	41.000000
31	Cuba	Other-relative	nan	nan
48	El-Salvador	Other-relative	550881.436875	3.000000
34	Cuba	Wife	nan	nan

# SQL for Rea

SELECT `native.country`,relationship,SUM(fnlwgt), COUNT(\*) FROM C1 WHERE (race LIKE 'White') AND (sex <> 'Male' AND workclass IN ('Private', 'Federal-gov', 'Self-emp-not-inc', 'State-gov')) OR (`marital.status` <> 'Married-civ-spouse' OR occupation = 'Prof-specialty') OR (income = '<=50K' OR education <> 'HS-grad') AND (`native.country` LIKE 'United-States' AND capital = 0) GROUP BY `native.country`, relationship

# SQL for Synthetic:

SELECT `native.country`,relationship,SUM(fnlwgt), COUNT(\*) FROM C1\_syn\_06 WHERE (race LIKE 'White') AND (sex <> 'Male' AND workclass IN ('Private', 'Federal-gov', 'Self-emp-not-inc', 'State-gov')) OR (`marital.status` <> 'Married-civ-spouse' OR occupation = 'Prof-specialty') OR (income = '<=50K' OR education <> 'HS-grad') AND (`native.country` LIKE 'United-States' AND capital = 0) GROUP BY `native.country`, relationship

Resulted in 202 records

Normalized Euclidean distance for (fnlwgt): 13.6

Hellinger Distance: 0.436

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#### Real

	sex	relationship	income	race	education	native.country	SUM(age)	COUNT(*)
1242	Female	Unmarried	<=50K	White	Some-college	?	190.000000	4.000000
2612	Male	Not-in-family	<=50K	White	Assoc-voc	Peru	nan	nan
2496	Male	Not-in-family	<=50K	Other	9th	United-States	31.000000	1.000000
498	Female	Other-relative	<=50K	Black	Bachelors	Hungary	nan	nan
2568	Male	Not-in-family	<=50K	White	7th-8th	Japan	nan	nan

# Synthetic

	sex	relationship	income	race	education	native.country	SUM(age)	COUNT(*)
1242	Female	Unmarried	<=50K	White	Some-college	?	1149	25
2612	Male	Not-in-family	<=50K	White	Assoc-voc	Peru	138	3
2496	Male	Not-in-family	<=50K	Other	9th	United-States	53	2
498	Female	Other-relative	<=50K	Black	Bachelors	Hungary	43	1
2568	Male	Not-in-family	<=50K	White	7th-8th	Iapan	101	2

#### SQL for Real:

SELECT sex, relationship, income, race, education, 'native.country', SUM(age), COUNT(\*) FROM C1 WHERE ('hours.per.week' > 40) OR (relationship <> 'Unmarried' AND sex <> 'Male') AND ((capital BETWEEN 0 AND 0) AND age = 38) OR (workclass LIKE 'Private' OR occupation IN ('Prof-specialty', 'Armed-Forces', 'Tech-support', 'Handlers-cleaners', 'Priv-house-serv', 'Craft-repair', 'Exec-managerial')) GROUP BY sex, relationship, income, race, education, 'native.country'

Resulted in 2739 records

#### SQL for Synthetic:

SELECT sex,relationship,income,race,education, `native.country`,SUM(age), COUNT(\*) FROM C1\_syn\_06 WHERE (`hours.per.week` > 40) OR (relationship <> 'Unmarried' AND sex <> 'Male') AND ((capital BETWEEN 0 AND 0) AND age = 38) OR (workclass LIKE 'Private' OR occupation IN ('Prof-specialty', 'Armed-Forces', 'Tech-support', 'Handlers-cleaners', 'Priv-house-serv', 'Craft-repair', 'Exec-managerial')) GROUP BY sex,relationship,income,race,education, `native.country`

Resulted in 3399 records

Normalized Euclidean distance for (age): 33.9

Hellinger Distance: 0.357

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			Real			
	relationship	occupation	sex	workclass	SUM(age)	COUNT(*)
237	Own-child	Farming-fishing	Female	Private	173	8
323	Own-child	Transport-moving	Male	Self-emp-inc	69	3
91	Not-in-family	Protective-serv	Male	Federal-gov	130	4
105	Not-in-family	Sales	Male	State-gov	38	1
349	Unmarried	Exec-managerial	Male	Private	432	13

# Synthetic

	relationship	occupation	sex	workclass	SUM(age)	COUNT(*)
237	7 Own-child	Farming-fishing	Female	Private	95.000000	4.000000
323	3 Own-child	Transport-moving	Male	Self-emp-inc	nan	nan
91	Not-in-family	Protective-serv	Male	Federal-gov	92.000000	3.000000
105	Not-in-family	Sales	Male	State-gov	154.000000	3.000000
349	• Unmarried	Exec-managerial	Male	Private	356.000000	11.000000

# SQL for Real:

SELECT relationship,occupation,sex,workclass,SUM(age), COUNT(\*) FROM C1 WHERE (`marital.status` = 'Never-married' AND `native.country` = 'United-States') OR ((age BETWEEN 25 AND 26) OR occupation LIKE 'Sales') AND (fnlwgt = 204590 AND workclass IN ('Private', 'Local-gov', 'Self-emp-not-inc', '?', 'Self-emp-inc', 'State-gov', 'Federal-gov')) GROUP BY relationship,occupation,sex,workclass

Resulted in 410 records

# SQL for Synthetic:

SELECT relationship,occupation,sex,workclass,SUM(age), COUNT(\*) FROM C1\_syn\_06 WHERE (`marital.status` = 'Never-married' AND `native.country` = 'United-States') OR ((age BETWEEN 25 AND 26) OR occupation LIKE 'Sales') AND (fnlwgt = 204590 AND workclass IN ('Private', 'Local-gov', 'Self-emp-not-inc', '?', 'Self-emp-inc', 'State-gov', 'Federal-gov')) GROUP BY relationship,occupation,sex,workclass

Resulted in 402 records

Normalized Euclidean distance for (age): 18.11

Hellinger Distance: 0.089

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	relationship	education	marital.status	MIN(age)	COUNT(*)
<b>45</b>	Not-in-family	5th-6th	Never-married	17	61
286	Unmarried	5th-6th	Married-spouse-absent	33	8
85	Not-in-family	HS-grad	Separated	21	225

Real

 210
 Own-child
 1st-4th
 Never-married
 24
 8

 205
 Own-child
 12th
 Married-spouse-absent
 19
 1

	relationship	education	marital.status	MIN(age)	COUNT(*)	
45	Not-in-family	5th-6th	Never-married	18.000000	41.000000	
286	Unmarried	5th-6th	Married-spouse-absent	31.000000	3.000000	
85	Not-in-family	HS-grad	Separated	22.000000	136.000000	
210	Own-child	1st-4th	Never-married	20.000000	6.000000	
205	Own-child	12th	Married-spouse-absent	nan	nan	

#### SOL for Real:

SELECT relationship, education, `marital.status`, MIN(age), COUNT(\*) FROM C1 WHERE (capital >= 0 OR age = 31) OR (`marital.status` = 'Never-married' OR income <> <=50K') GROUP BY relationship, education, marital.status

Resulted in 369 records

# SQL for Synthetic:

SELECT relationship, education, `marital.status`, MIN(age), COUNT(\*) FROM C1 syn 06 WHERE (capital >= 0 OR age = 31) OR (`marital.status` = 'Never-married' OR income <> '<=50K') GROUP BY relationship,education, 'marital.status'

Resulted in 357 records

Normalized Euclidean distance for (age): 17.52

Hellinger Distance: 0.102

# Real

#### education income relationship SUM(fnlwgt) COUNT(\*) 54 7th-8th <=50KOwn-child 12597723

35 1st-4th <=50KHusband 24204163 103 410 101 Bachelors >50K Not-in-family 81195440 24 12th <=50K Not-in-family 22067415 119 19 11th >50K Other-relative 121441 1

### Synthetic

#### education income relationship SUM(fnlwgt) COUNT(\*)

<b>54</b>	7th-8th	<=50K	Own-child	11696985.026486	64.000000
35	1st-4th	<=50K	Husband	10290680.245706	60.000000
101	Bachelors	>50K	Not-in-family	14217814.913736	81.000000
24	12th	<=50K	Not-in-family	23253258.761162	115.000000
19	11th	>50K	Other-relative	nan	nan

### SQL for Real:

SELECT education,income,relationship,SUM(fnlwgt), COUNT(\*) FROM C1 WHERE (fnlwgt = 184682 OR education LIKE 'Bachelors') OR (`native.country` = 'United-States' OR sex = 'Male') OR (income = '<=50K' OR workclass <> 'Private') AND (race = 'White' AND `hours.per.week` BETWEEN 60 AND 40) OR (age >= 37 OR `marital.status` = 'Widowed') GROUP BY education,income,relationship

Resulted in 172 records

SELECT education,income, relationship, SUM(fnlwgt), COUNT(\*) FROM C1 syn 06 WHERE (fnlwgt = 184682 OR education LIKE 'Bachelors') OR (`native.country` = 'United-States' OR sex = 'Male') OR (income = '<=50K' OR workclass <> 'Private') AND (race = 'White' AND `hours.per.week` BETWEEN 60 AND 40) OR (age >= 37 OR 'marital.status' = 'Widowed') GROUP BY education,income,relationship

Resulted in 164 records

Normalized Euclidean distance for (fnlwgt): 12.61

Hellinger Distance: 0.165

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#### Real native.country education relationship marital.status income race occupation White 8895 United-States Not-in-family Prof-specialty Masters Divorced <=50K

workclass AVG(fnlwgt) COUNT(\*) 147786.000000 Private 24 White United-States 7th-8th Husband Married-civ-spouse <=50K Farming-fishing Local-gov 125927.000000 1 10286 United-States Some-college Unmarried Divorced <=50KWhite Craft-repair State-gov 106466.000000 1 10112 United-States Some-college Own-child Never-married <=50K Asian-Pac-Islander Adm-clerical State-gov 96483.000000 1 9561 United-States Some-college Husband Married-civ-spouse >50K White Tech-support Self-emp-inc 106103.000000 1

Synthetic

	native.country	education	relationship	marital.status	income	race	occupation	workclass	AVG(fnlwgt)	COUNT(*)
8895	United-States	Masters	Not-in-family	Divorced	<=50K	White	Prof-specialty	Private	178838.234166	13.000000
4879	United-States	7th-8th	Husband	Married-civ-spouse	<=50K	White	Farming-fishing	Local-gov	nan	nan
10286	United-States	Some-college	Unmarried	Divorced	<=50K	White	Craft-repair	State-gov	171851.020297	1.000000
10112	United-States	Some-college	Own-child	Never-married	<=50K	Asian-Pac-Islander	Adm-clerical	State-gov	nan	nan
9561	United-States	Some-college	Husband	Married-civ-spouse	>50K	White	Tech-support	Self-emp-inc	149647.783640	1.000000

SELECT `native.country`, education, relationship, `marital.status`, income, race, occupation, workclass, AVG(fnlwgt), COUNT(\*) FROM C1 WHERE (capital <= 0) GROUP BY native.country`,education,relationship,`marital.status`,income,race,occupation,workclass

Resulted in 10686 records

# SQL for Synthetic:

SELECT `native.country`,education,relationship, `marital.status`,income,race,occupation,workclass,AVG(fnlwgt), COUNT(\*) FROM C1\_syn\_06 WHERE (capital <= 0) GROUP  $BY\ `native.country`, education, relationship, `marital.status`, income, race, occupation, work class and the control of the country's country's education, relationship, `marital.status', income, race, occupation, work class are control of the country's education, relationship, `marital.status', income, race, occupation, work class are control of the country's education, relationship, `marital.status', income, race, occupation, work class are control of the country's education, relationship, `marital.status', income, race, occupation, work class are control of the country's education, relationship, `marital.status', income, race, occupation, work class are control of the country's education, relationship, `marital.status', income, race, occupation, work class are control of the country's education, relationship, and r$ 

Resulted in 9656 records

Normalized Euclidean distance for (fnlwgt): 53.36

Hellinger Distance: 0.233

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	sex	race	income	occupation	native.country	education	AVG(age)	COUNT(*)
478	<b>31</b> Mal	e White	e <=50K	Tech-support	United-States	Some-college	34.302326	129.000000
322	28 Mal	e Other	<=50K	Prof-specialty	Ecuador	Bachelors	32.000000	1.000000
143	<b>34</b> Fema	ale White	e <=50K	Handlers-cleaners	Puerto-Rico	11th	nan	nan
53	1 Fema	ale Black	<=50K	Other-service	England	HS-grad	nan	nan
319	96 Mal	e Other	<=50K	Handlers-cleaners	United-States	10th	23.000000	1.000000

### Synthetic

	sex	race	income	occupation	native.country	education	AVG(age)	COUNT(*
4781	Male	White	<=50K	Tech-support	United-States	Some-college	32.173469	98
3228	Male	Other	<=50K	Prof-specialty	Ecuador	Bachelors	29.000000	1
1434	Female	White	<=50K	Handlers-cleaners	Puerto-Rico	11th	62.000000	1
531	Female	Black	<=50K	Other-service	England	HS-grad	40.000000	1
3196	Male	Other	<=50K	Handlers-cleaners	United-States	10th	23.000000	1

### SOL for Real:

SELECT sex, race, income, occupation, `native.country`, education, AVG(age), COUNT(\*) FROM C1 WHERE (education LIKE 'Bachelors' AND `marital.status` = 'Married-civspouse') OR (sex IN ('Female', 'Male') OR `hours.per.week` BETWEEN 48 AND 40) AND ((capital BETWEEN 0 AND 7688) AND workclass IN ('Self-emp-inc', 'Federal-gov', '?', 'State-gov')) AND (race LIKE 'White' AND occupation IN ('Prof-specialty', 'Handlers-cleaners', '?', 'Machine-op-inspct', 'Tech-support', 'Adm-clerical', 'Sales', 'Exec-managerial', 'Protective-serv', 'Other-service', 'Craft-repair', 'Priv-house-serv', 'Transport-moving', 'Farming-fishing')) OR (income = '<=50K' OR fnlwgt <= 109532) GROUP BY sex, race, income, occupation, `native.country`, education

Resulted in 3805 records

# SQL for Synthetic:

SELECT sex\_race,income,occupation, `native.country`, education,AVG(age), COUNT(\*) FROM C1\_syn\_06 WHERE (education LIKE 'Bachelors' AND `marital.status` = 'Married-civ-spouse') OR (sex IN ('Female', 'Male') OR `hours.per.week` BETWEEN 48 AND 40) AND ((capital BETWEEN 0 AND 7688) AND workclass IN ('Self-emp-inc', 'Federal-gov', '?', 'State-gov')) AND (race LIKE 'White' AND occupation IN ('Prof-specialty', 'Handlers-cleaners', '?', 'Machine-op-inspct', 'Tech-support', 'Adm-clerical', 'Sales', 'Execmanagerial', 'Protective-serv', 'Other-service', 'Craft-repair', 'Priv-house-serv', 'Transport-moving', 'Farming-fishing')) OR (income = '<=50K' OR fnlwgt <= 109532) GROUP BY sex,race,income,occupation, `native.country', education

Resulted in 5060 records

Normalized Euclidean distance for (age): 38.83

Hellinger Distance: 0.328

#### Real

	occupation	native.country	sex	income	SUM(capital)	COUNT(*)
262	Craft-repair	Thailand	Male	<=50K	0	2
3	?	?	Male	>50K	0	3
647	Other-service	Philippines	Male	<=50K	10137	26
775	Prof-specialty	Jamaica	Female	<=50K	4101	6
45	?	Mexico	Female	<=50K	0	27

# Synthetic

	occupation	native.country	sex	income	SUM(capital)	COUNT(*)
262	Craft-repair	Thailand	Male	<=50K	26.486360	14.000000
3	?	?	Male	>50K	-90.980955	2.000000
647	Other-service	Philippines	Male	<=50K	-81.814196	1.000000
775	Prof-specialty	Jamaica	Female	<=50K	364.986734	2.000000
45	?	Mexico	Female	<=50K	nan	nan

SELECT occupation, `native.country`, sex,income, SUM(capital), COUNT(\*) FROM C1 WHERE (fnlwgt <> 126614) OR (relationship = 'Not-in-family' AND age BETWEEN 40 AND 22) OR ( native.country '<> 'United-States' OR `marital.status ' = 'Never-married') GROUP BY occupation, `native.country `,sex,income

Resulted in 1074 records

SELECT occupation, `native.country`, sex,income, SUM(capital), COUNT(\*) FROM C1\_syn\_06 WHERE (fnlwgt <> 126614) OR (relationship = 'Not-in-family' AND age BETWEEN 40 AND 22) OR (`native.country` <> 'United-States' OR `marital.status` = 'Never-married') GROUP BY occupation, `native.country`, sex, income Resulted in 964 records

Normalized Euclidean distance for (capital): 25.0

Hellinger Distance: 0.398

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# Real

	education	sex	marital.status	race	relationship	income	workclass	native.country	occupation	SUM(capital)	COUNT(*)
0	Assoc-voc	Female :	Married-civ-spouse	White	Wife	>50K	Private	Japan	Tech-support	nan	nan
2	HS-grad	Female :	Married-civ-spouse	White	Wife	>50K	Local-gov	Puerto-Rico	Adm-clerical	nan	nan
3	HS-grad	Female	Married-civ-spouse	White	Wife	>50K	Private	Puerto-Rico	Adm-clerical	nan	nan
1	Bachelors	Female :	Married-civ-spouse	White	Wife	>50K	Private	Taiwan	Prof-specialty	nan	nan
5	Some-college	Female	Married-civ-spouse	White	Wife	>50K	Self-emp-not-inc	?	Prof-specialty	nan	nan

# Synthetic

	education	sex	marital.status	race	relationship	income	workclass	native.country	occupation	SUM(capital)	COUNT(*)
0	Assoc-voc	Female	Married-civ-spouse	White	Wife	>50K	Private	Japan	Tech-support	20.155352	1
2	HS-grad	Female	Married-civ-spouse	White	Wife	>50K	Local-gov	Puerto-Rico	Adm-clerical	-99.613852	1
3	HS-grad	Female	Married-civ-spouse	White	Wife	>50K	Private	Puerto-Rico	Adm-clerical	-173.661439	1
1	Bachelors	Female	Married-civ-spouse	White	Wife	>50K	Private	Taiwan	Prof-specialty	-14.039921	1
5	Some-college	Female	Married-civ-spouse	White	Wife	>50K	Self-emp-not-inc	?	Prof-specialty	-88.470403	1

### SQL for Real:

SELECT education,sex, marital.status, race, relationship, income, workclass, native.country, occupation, SUM(capital), COUNT(\*) FROM C1 WHERE (race LIKE 'White') AND ((fnlwgt BETWEEN 338320 AND 106552) OR workclass <> 'State-gov') AND (`marital.status` LIKE 'Married-civ-spouse' AND income <> '<=50K') AND (age = 41 AND relationship = 'Wife') AND (sex IN ('Female', 'Male') AND `native.country` <> 'United-States') GROUP BY education, sex, `marital.status`, race, relationship, income, work class, `native.country`, occupation and the second country of t

Resulted in 3 records

# SQL for Synthetic:

SELECT education,sex, 'marital.status',race,relationship,income,workclass, 'native.country',occupation,SUM(capital), COUNT(\*) FROM C1\_syn\_06 WHERE (race LIKE 'White') AND ((finwgt BETWEEN 338320 AND 106552) OR workclass <> 'State-gov') AND ('marital.status' LIKE 'Married-civ-spouse' AND income <> '<=50K') AND (age = 41 AND relationship = 'Wife') AND (sex IN ('Female', 'Male') AND `native.country' <> 'United-States') GROUP BY education,sex, 'marital.status',race,relationship,income,workclass, 'native.country',occupation

Resulted in 6 records

Normalized Euclidean distance for (capital): nan

Hellinger Distance: nan

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					Real			
	workclass	native.country	income	sex	occupation	relationship	MAX(`hours.per.week`)	COUNT(*)
1801	Private	Mexico	<=50K	Male	Transport-moving	Husband	55.000000	14.000000
1747	Private	Laos	<=50K	Male	Other-service	Own-child	nan	nan
2891	Self-emp-not-inc	Puerto-Rico	<=50K	Female	Sales	Other-relative	nan	nan
1470	Private	India	<=50K	Female	Sales	Unmarried	nan	nan
502	Local-gov	Holand-Netherlands	<=50K	Male	Handlers-cleaners	Own-child	nan	nan

	workclass	native.country	income	sex	occupation	relationship	MAX(`hours.per.week`)	COUNT(*)
1801	Private	Mexico	<=50K	Male	Transport-moving	Husband	40.261340	3
1747	Private	Laos	<=50K	Male	Other-service	Own-child	40.105219	9
2891	Self-emp-not-inc	Puerto-Rico	<=50K	Female	Sales	Other-relative	39.010632	1
1470	Private	India	<=50K	Female	Sales	Unmarried	40.088326	1
502	Local-gov	Holand-Netherlands	<=50K	Male	Handlers-cleaners	Own-child	40.001186	1

SELECT workclass, `native.country`,income,sex,occupation,relationship,MAX(`hours.per.week`), COUNT(\*) FROM C1 WHERE (relationship <> 'Not-in-family') GROUP BY workclass, `native.country`, income, sex, occupation, relationship

Resulted in 2571 records

# SQL for Synthetic:

SELECT workclass, `native.country`,income,sex,occupation,relationship,MAX(`hours.per.week`), COUNT(\*) FROM C1\_syn\_06 WHERE (relationship <> 'Not-in-family') GROUP BY workclass, `native.country`, income, sex, occupation, relationship

Resulted in 3331 records

Normalized Euclidean distance for ('hours.per.week'): 34.04

Hellinger Distance: 0.343

				Real				
	native.country	occupation	sex	race	education	income	AVG(fnlwgt)	COUNT(*)
4561	United-States	Farming-fishing	Male	White	Assoc-acdm	<=50K	208004.230769	13.000000
4082	Thailand	Exec-managerial	Female	White	Some-college	<=50K	nan	nan
3513	Puerto-Rico	Prof-specialty	Female	Black	Assoc-voc	<=50K	nan	nan
2321	Laos	Machine-op-inspct	Female	White	10th	<=50K	nan	nan
1038	Germany	Prof-specialty	Female Asian	-Pac-Islander	Assoc-voc	<=50K	nan	nan

				Synthetic				
	native.country	occupation	sex	race	education	income	AVG(fnlwgt)	COUNT(*)
4561	United-States	Farming-fishing	Male	White	Assoc-acdm	<=50K	172474.395027	5
4082	Thailand	Exec-managerial	Female	White	Some-college	<=50K	177340.672565	1
3513	Puerto-Rico	Prof-specialty	Female	Black	Assoc-voc	<=50K	170462.094245	1
2321	Laos	Machine-op-inspct	Female	White	10th	<=50K	178949.079041	1
1038	Germany	Prof-specialty	Female A	Asian-Pac-Islander	Assoc-voc	<=50K	184620.456806	1

# SOL for Real:

SELECT `native.country`,occupation,sex,race,education,income,AVG(fnlwgt), COUNT(\*) FROM C1 WHERE (race IN ('Asian-Pac-Islander', 'Black', 'White', 'Amer-Indian-Eskimo') AND capital <= 0) OR (education = 'HS-grad' OR workclass LIKE 'Private') GROUP BY `native.country`, occupation, sex, race, education, income

Resulted in 4191 records

# SQL for Synthetic:

SELECT `native.country`, occupation, sex, race, education, income, AVG(fnlwgt), COUNT(\*) FROM C1 syn 06 WHERE (race IN ('Asian-Pac-Islander', 'Black', 'White', 'Amer-Indian-Eskimo') AND capital <= 0) OR (education = 'HS-grad' OR workclass LIKE 'Private') GROUP BY native country, occupation, sex, race, education, income

Resulted in 5315 records

Normalized Euclidean distance for (fnlwgt): 40.26

Hellinger Distance: 0.326

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			Real		
	marital.status	education	workclass	MIN(fnlwgt)	COUNT(*)
203	Married-civ-spouse	Preschool	Self-emp-not-inc	227253	3
321	Never-married	9th	?	30140	21
<b>4</b> 77	Widowed	11th	State-gov	159908	1
34	Divorced	9th	Private	22418	75
397	Separated	11th	Self-emp-not-inc	210926	3

	marital.status	education	workclass	MIN(fnlwgt)	COUNT(*)
203	Married-civ-spouse	Preschool	Self-emp-not-inc	157059.527311	2.000000
321	Never-married	9th	?	148353.803745	15.000000
<b>4</b> 77	Widowed	11th	State-gov	149395.201919	1.000000
34	Divorced	9th	Private	156179.028282	80.000000
<b>397</b>	Separated	11th	Self-emp-not-inc	159134.242918	2.000000

# SQL for Real:

SELECT `marital.status`,education,workclass,MIN(fnlwqt), COUNT(\*) FROM C1 WHERE (race IN ('Asian-Pac-Islander', 'White', 'Black')) GROUP BY `marital.status`,education,workclass

Resulted in 558 records

# SQL for Synthetic:

SELECT marital.status, education, workclass, MIN(fnlwgt), COUNT(\*) FROM C1\_syn\_06 WHERE (race IN ('Asian-Pac-Islander', 'White', 'Black')) GROUP BY `marital.status`,education,workclass

Resulted in 546 records

Normalized Euclidean distance for (fnlwgt): 22.29

Hellinger Distance: 0.054

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#### Real

		relationship	occupation	sex	education	workclass	race	AVG(`hours.per.week`)	COUNT(*)
:	3867	Own-child	Prof-specialty	Female	Bachelors	Local-gov	White	36.500000	28
:	2309	Not-in-family	Prof-specialty	Male	Some-college	Self-emp-not-inc	Black	40.000000	1
:	2178	Not-in-family	Prof-specialty	Female	Doctorate	Federal-gov	White	84.500000	2
:	2402	Not-in-family	Sales	Female	Assoc-acdm	Self-emp-inc	White	25.000000	1
	433	Husband	Farming-fishing	Male	7th-8th	?	White	20.000000	1

#### Synthetic

	relationship	occupation	sex	education	workclass	race	AVG(`hours.per.week`)	COUNT(*)
386	7 Own-child	Prof-specialty	Female	Bachelors	Local-gov	White	39.956706	31.000000
2309	9 Not-in-family	Prof-specialty	Male	Some-college	Self-emp-not-inc	Black	nan	nan
2178	<b>3</b> Not-in-family	Prof-specialty	Female	Doctorate	Federal-gov	White	40.022744	1.000000
2402	2 Not-in-family	Sales	Female	Assoc-acdm	Self-emp-inc	White	40.041420	1.000000
433	Husband	Farming-fishing	Male	7th-8th	?	White	nan	nan

# SOL for Real:

Select relationship, occupation, sex, education, workclass, race, AVG(`hours.per.week`), COUNT(\*) FROM C1 WHERE (`hours.per.week` <> 50) OR (relationship = 'Husband' OR age BETWEEN 58 AND 37) AND (workclass = 'Private' AND capital < 0) AND (education IN ('12th', 'HS-grad', '5th-6th', 'Doctorate', 'Prof-school', 'Assoc-voc', 'Some-college', '1st-4th', 'Preschool', 'Assoc-acdm', '11th', 'Bachelors', '10th', '9th', 'Masters') AND income LIKE '<=50K') AND (sex <> 'Male' AND occupation IN ('Tech-support', 'Machine-op-inspct')) GROUP BY relationship, occupation, sex, education, workclass, race

Resulted in 5668 records

# SQL for Synthetic:

SELECT relationship,occupation,sex,education,workclass,race,AVG(`hours.per.week`), COUNT(\*) FROM C1\_syn\_06 WHERE (`hours.per.week` <> 50) OR (relationship = 'Husband' OR age BETWEEN 58 AND 37) AND (workclass = 'Private' AND capital < 0) AND (education IN ('12th', 'HS-grad', '5th-6th', 'Doctorate', 'Prof-school', 'Assoc-voc', 'Some-college', '1st-4th', 'Preschool', 'Assoc-acdm', '11th', 'Bachelors', '10th', '9th', 'Masters') AND income LIKE '<=50K') AND (sex <> 'Male' AND occupation IN ('Tech $support', \, 'Machine-op-inspct')) \,\, GROUP \,\, BY \,\, relationship, occupation, sex, education, workclass, race$ 

Resulted in 5511 records

Normalized Euclidean distance for (`hours.per.week`): 59.16

Hellinger Distance: 0.127

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# Real

	native.country	workclass	race	marital.status	occupation	education AVG	(`hours.per.week`	) COUNT(*)
1086	Ireland	Private	White	Married-civ-spouse	Tech-support	Assoc-voc	nan	nan
234	?	Self-emp-not-inc	White	Married-civ-spouse	Exec-managerial	Bachelors	47.500000	2.000000
1183	Japan	Private	Black	Married-civ-spouse	Sales	Masters	nan	nan
2847	United-States	Federal-gov	White	Married-civ-spouse	Armed-Forces	Bachelors	nan	nan
3171	United-States	Private	Black	Married-civ-spouse	Prof-specialty	HS-grad	45.000000	4.000000

# Synthetic

	native.country	workclass	race	marital.status	occupation	education AVG	(`hours.per.week`)	COUNT(*)
1086	Ireland	Private	White	Married-civ-spouse	Tech-support	Assoc-voc	40.000842	1
234	?	Self-emp-not-inc	White	Married-civ-spouse	Exec-managerial	Bachelors	40.389015	9
1183	Japan	Private	Black	Married-civ-spouse	Sales	Masters	40.447918	1
2847	United-States	Federal-gov	White	Married-civ-spouse	Armed-Forces	Bachelors	39.962412	1
3171	United-States	Private	Black	Married-civ-spouse	Prof-specialty	HS-grad	40.015199	3

# SOL for Real:

SELECT `native.country`, workclass, race, `marital.status`, occupation, education, AVG(`hours, per. week`), COUNT(\*) FROM C1 WHERE (`marital.status` LIKE 'Married-civspouse') GROUP BY `native.country`, workclass, race, `marital.status`, occupation, education

### SQL for Synthetic:

SELECT 'native.country', workclass, race, 'marital.status', occupation, education, AVG('hours.per.week'), COUNT(\*) FROM C1\_syn\_06 WHERE ('marital.status' LIKE 'Marriedciv-spouse') GROUP BY `native.country`, workclass, race, `marital.status`, occupation, education

Normalized Euclidean distance for (`hours.per.week`): 32.25

Hellinger Distance: 0.272

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#### Real

		marital.status	workclass	education	relationship	native.country	race	SUM(fnlwgt)	COUNT(*)
2	2730 N	farried-civ-spouse	Self-emp-inc	Assoc-voc	Husband	Columbia	White	nan	nan
2	766 N	farried-civ-spouse	Self-emp-inc	HS-grad	Husband	Guatemala	White	nan	nan
5	766	Separated	Private	11th	Not-in-family	Puerto-Rico	White	319378.000000	2.000000
3	<b>162</b> N	farried-civ-spouse	State-gov	Masters	Husband	Japan	Black	nan	nan
1	671 N	farried-civ-spouse	Local-gov	Assoc-acdm	Husband	Puerto-Rico	Black	nan	nan

# Synthetic

marital.status	workclass	education	relationship	native.country	race	SUM(fnlwgt)	COUNT(*)
2730 Married-civ-spouse	Self-emp-inc	Assoc-voc	Husband	Columbia	White	355041.439223	2
2766 Married-civ-spouse	Self-emp-inc	HS-grad	Husband	Guatemala	White	187969.829613	1
5766 Separated	Private	11th	Not-in-family	Puerto-Rico	White	850749.111337	5
3162 Married-civ-spouse	State-gov	Masters	Husband	Japan	Black	178175.722695	1
1671 Married-civ-spouse	Local-gov	Assoc-acdm	Husband	Puerto-Rico	Black	171313.754768	1

#### SQL for Real:

SELECT `marital.status`,workclass,education,relationship, `native.country`,race,SUM(fnlwqt), COUNT(\*) FROM C1 WHERE (occupation LIKE 'Adm-clerical') OR (race IN ('Black', 'White', 'Amer-Indian-Eskimo', 'Other', 'Asian-Pac-Islander') AND capital <= 0) OR (workclass LIKE 'Private' OR `native.country` <> 'United-States') OR (age >= 65 OR sex LIKE 'Male') AND ('marital.status' LIKE 'Married-civ-spouse' AND education LIKE 'HS-grad') AND (relationship <> 'Husband' AND income LIKE '<=50K') GROUP BY `marital.status`,workclass,education,relationship,`native.country`,race

Resulted in 4960 records

### SQL for Synthetic:

SELECT `marital.status`,workclass,education,relationship, `native.country`,race,SUM(fnlwgt), COUNT(\*) FROM C1\_syn\_06 WHERE (occupation LIKE 'Adm-clerical') OR (race IN ('Black', 'White', 'Amer-Indian-Eskimo', 'Other', 'Asian-Pac-Islander') AND capital <= 0) OR (workclass LIKE 'Private' OR `native.country` <> 'United-States') OR (age >= 65 OR sex LIKE 'Male') AND (`marital.status` LIKE 'Married-civ-spouse' AND education LIKE 'HS-grad') AND (relationship <> 'Husband' AND income LIKE '<=50K') GROUP BY `marital.status`, workclass, education, relationship, `native.country`, race

Resulted in 6619 records

Normalized Euclidean distance for (fnlwgt): 42.45

Hellinger Distance: 0.34

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### Real

	race	AVG(age)	COUNT(*)
3	Other	33.682927	205
4	White	38.315777	38201
1	Asian-Pac-Islander	37.974901	757
0	Amer-Indian-Eskimo	36.918367	245
2	Black	38.181535	2567

# Synthetic

	race	AVG(age)	COUNT(*)
3	Other	nan	nan
4	White	38.805845	21694.000000
1	Asian-Pac-Islander	65.000000	2.000000
0	Amer-Indian-Eskimo	nan	nan
2	Black	47 500000	2 000000

# SOL for Real:

SELECT race, AVG(age), COUNT(\*) FROM C1 WHERE (race = 'White' OR `hours.per.week` = 40) AND (sex IN ('Female', 'Male') AND capital <= 0) OR (fnlwgt <= 35603 OR age > 45) AND (relationship <> 'Husband' AND education <> 'HS-grad') AND (income LIKE '>50K' AND workclass = 'Self-emp-inc') GROUP BY race

Resulted in 5 records

# SQL for Synthetic:

SELECT race, AVG(age), COUNT(\*) FROM C1\_syn\_06 WHERE (race = 'White' OR `hours.per.week` = 40) AND (sex IN ('Female', 'Male') AND capital <= 0) OR (fnlwgt <= 35603 OR age > 45) AND (relationship <> 'Husband' AND education <> 'HS-grad') AND (income LIKE '>50K' AND workclass = 'Self-emp-inc') GROUP BY race

Resulted in 3 records

Normalized Euclidean distance for (age): 1.73

Hellinger Distance: 0.193

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	race	occupation	marital.status	income	workclass	AVG(age)	COUNT(*)
727	White	Transport-moving	Never-married	>50K	State-gov	41.000000	1
522	White	Craft-repair	Never-married	>50K	Local-gov	60.500000	2
227	Asian-Pac-Islander	Transport-moving	Never-married	<=50K	Private	28.125000	16
<b>354</b>	Black	Protective-serv	Married-civ-spouse	<=50K	Private	41.071429	14
<b>34</b> .	Amer-Indian-Eskimo	Handlers-cleaners	Married-spouse-absent	<=50K	Private	29.500000	2

#### Synthetic income workclass AVG(age) COUNT(\*) race occupation marital.status 727 White >50K State-gov Transport-moving Never-married nan nan 522 White >50K Craft-repair Never-married Local-gov nan 227 Asian-Pac-Islander Transport-moving Never-married <=50KPrivate 25.625000 8.000000 354 Black Protective-serv Married-civ-spouse <=50K40.466667 15.000000 Private 34 Amer-Indian-Eskimo Handlers-cleaners Married-spouse-absent <=50K

SELECT race, occupation, 'marital.status', income, workclass, AVG(age), COUNT(\*) FROM C1 WHERE (occupation = 'Other-service' AND fnlwgt BETWEEN 117789 AND 33811) OR (`marital.status` = 'Never-married' OR workclass = 'Private') GROUP BY race,occupation, `marital.status`,income,workclass

Resulted in 732 records

#### SQL for Synthetic:

SELECT race, occupation, `marital.status`, income, workclass, AVG(age), COUNT(\*) FROM C1\_syn\_06 WHERE (occupation = 'Other-service' AND fnlwgt BETWEEN 117789 AND 33811) OR (`marital.status` = 'Never-married' OR workclass = 'Private') GROUP BY race,occupation, 'marital.status`, income, workclass

Resulted in 604 records

Normalized Euclidean distance for (age): 23.02

Hellinger Distance: 0.16

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#### Real

income workclass sex race marital.status occupation native.country relationship education MAX(age) COUNT(\*) Female White Married-civ-spouse United-States Other-relative

#### Synthetic

income workclass sex race marital.status occupation native.country relationship education MAX(age) COUNT(\*)

0 >50K Female White Married-civ-spouse United-States Other-relative 12th

#### SOL for Real:

SELECT income, workclass, sex, race, `marital.status`, occupation, `native.country`, relationship, education, MAX(age), COUNT(\*) FROM C1 WHERE (`native.country` = 'United-States' AND age = 19) AND (`marital.status` <> 'Never-married' AND income <> '<=50K') AND (workclass IN ('Self-emp-inc', '?', 'Self-emp-not-inc', 'State-gov', 'Federalgov') AND fnlwgt BETWEEN 182227 AND 239130) GROUP BY income, workclass, sex, race, `marital.status`, occupation, `native.country`, relationship, education

Resulted in 1 records

#### SQL for Synthetic:

SELECT income, workclass, sex, race, `marital.status`, occupation, `native.country`, relationship, education, MAX(age), COUNT(\*) FROM C1 syn 06 WHERE (`native.country` = 'United-States' AND age = 19) AND (`marital.status` <> 'Never-married' AND income <> '<=50K') AND (workclass IN ('Self-emp-inc', '?', 'Self-emp-not-inc', 'State-gov', 'Federal-gov') AND fnlwgt BETWEEN 182227 AND 239130) GROUP BY income,workclass,sex,race, 'marital.status',occupation, 'native.country', relationship,education

Resulted in 0 records

Normalized Euclidean distance for (age): nan

Hellinger Distance: nan

R	e	al

	marital.status	race	income	education	occupation	relationship	workclass	AVG(`hours.per.week`	) COUNT(*
654	Divorced	White	<=50K	Bachelors	Prof-specialty	Not-in-family	Private	40.439024	41
4028	Never-married	Asian-Pac-Islander	<=50K	Bachelors	Prof-specialty	Own-child	Self-emp-not-inc	20.000000	1
129	Divorced	Black	<=50K	11th	?	Unmarried	?	19.500000	4
2608 1	Married-civ-spouse	White	<=50K	HS-grad	Craft-repair	Husband	State-gov	40.086957	23
730	Divorced	White	<=50K	HS-grad	Other-service	Own-child	Self-emp-not-inc	32.000000	2

# Synthetic

	marital.status	race	income	education	occupation	relationship	workclass	AVG(`hours.per.week`)	COUNT(*)
654	Divorced	White	<=50K	Bachelors	Prof-specialty	Not-in-family	Private	40.080801	66.000000
4028	Never-married	Asian-Pac-Islander	<=50K	Bachelors	Prof-specialty	Own-child	Self-emp-not-inc	40.064651	1.000000
129	Divorced	Black	<=50K	11th	?	Unmarried	?	nan	nan
2608	Married-civ-spouse	White	<=50K	HS-grad	Craft-repair	Husband	State-gov	39.993623	24.000000
730	Divorced	White	<=50K	HS-grad	Other-service	Own-child	Self-emp-not-inc	nan	nan

# SQL for Real:

SELECT `marital.status`,race,income,education,occupation,relationship,workclass,AVG(`hours.per.week`), COUNT(\*) FROM C1 WHERE (age <= 23 AND capital BETWEEN 0 AND 0) OR (relationship = 'Husband' OR workclass IN ('?', 'Self-emp-not-inc', 'Private')) OR (income = '<=50K' OR `native.country` = 'United-States') AND (education LIKE 'Bachelors' AND sex <> 'Male') AND (race <> 'White' AND occupation IN ('Adm-clerical', '?', 'Priv-house-serv', 'Machine-op-inspct', 'Craft-repair', 'Sales', 'Transport-moving', 'Farming-fishing', 'Protective-serv', 'Prof-specialty', 'Other-service', 'Handlers-cleaners')) AND (`marital.status` LIKE 'Married-civ-spouse' AND `hours.per.week` = 40) GROUP BY `marital.status`,race,income,education,occupation,relationship,workclass

Resulted in 6713 records

# SQL for Synthetic:

SELECT `marital.status`,race,income,education,occupation,relationship,workclass,AVG(`hours.per.week`), COUNT(\*) FROM C1 syn 06 WHERE (age <= 23 AND capital BETWEEN 0 AND 0) OR (relationship = 'Husband' OR workclass IN ('?', 'Self-emp-not-inc', 'Private')) OR (income = '<=50K' OR `native.country` = 'United-States') AND (education LIKE 'Bachelors' AND sex <> 'Male') AND (race <> 'White AND occupation IN ('Adm-clerical', '?', 'Priv-house-serv', 'Machine-op-inspct', 'Craft-repair', 'Sales', 'Transport-moving', 'Farming-fishing', 'Protective-serv', 'Prof-specialty', 'Other-service', 'Handlers-cleaners')) AND (`marital.status` LIKE 'Married-civ-spouse' AND `hours.per.week` = 40) GROUP BY `marital.status`,race,income,education,occupation,relationship,workclass

Resulted in 5701 records

Normalized Euclidean distance for ('hours.per.week'): 59.87

Hellinger Distance: 0.203

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Real

#### marital.status occupation sex relationship income native.country AVG(age) COUNT(\*)

0 Never-married Other-service Female Not-in-family <=50K United-States nan nan

#### SOL for Real

SELECT `marital.status`,occupation,sex,relationship,income, `native.country`,AVG(age), COUNT(\*) FROM C1 WHERE (fnlwgt = 122649) GROUP BY `marital.status`,occupation,sex,relationship,income, `native.country`

Resulted in 1 records

# SQL for Synthetic:

SELECT `marital.status`,occupation,sex,relationship,income, `native.country`,AVG(age), COUNT(\*) FROM C1\_syn\_06 WHERE (fnlwgt = 122649) GROUP BY `marital.status`,occupation,sex,relationship,income, `native.country`

Resulted in 0 records

Normalized Euclidean distance for (age): nan

Hellinger Distance: nan

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#### Real

	occupation	relationship	native.country	MIN(age)	COUNT(*)
1236	Protective-serv	Own-child	Ireland	nan	nan
44	?	Other-relative	Hungary	nan	nan
1317	Sales	Other-relative	Canada	nan	nan
944	Other-service	Own-child	Thailand	nan	nan
656	Handlers-cleaners	Other-relative	Japan	nan	nan

# Synthetic

	occupation	relationship	native.country	MIN(age)	COUNT(*
1236	Protective-serv	Own-child	Ireland	30	5
44	?	Other-relative	Hungary	49	1
1317	Sales	Other-relative	Canada	23	2
944	Other-service	Own-child	Thailand	18	26
656	Handlers-cleaners	Other-relative	Japan	45	1

#### SOL for Real:

SELECT occupation, relationship, `native.country`, MIN(age), COUNT(\*) FROM C1 WHERE (capital > 0 OR `native.country` LIKE 'United-States') OR (race IN ('Other', 'Black', 'Asian-Pac-Islander', 'White') OR income IN ('>50K', '<=50K')) AND (workclass IN ('Private', 'Local-gov', 'Federal-gov', 'Self-emp-inc', '?', 'Self-emp-not-inc', 'State-gov') AND occupation <> 'Other-service') AND (relationship = 'Husband' AND sex <> 'Male') OR (`hours.per.week` <> 16 OR fnlwgt BETWEEN 136687 AND 74775) GROUP BY occupation.relationship. 'native.country'

Resulted in 1480 records

# SQL for Synthetic:

SELECT occupation, relationship, `native.country`, MIN(age), COUNT(\*) FROM C1\_syn\_06 WHERE (capital > 0 OR `native.country` LIKE 'United-States') OR (race IN ('Other', 'Black', 'Asian-Pac-Islander', 'White') OR income IN ('>50K', '<=50K')) AND (workclass IN ('Private', 'Local-gov', 'Federal-gov', 'Self-emp-inc', '?', 'Self-emp-not-inc', 'State-gov') AND occupation <> 'Other-service') AND (relationship = 'Husband' AND sex <> 'Male') OR (`hours.per.week` <> 16 OR fnlwgt BETWEEN 136687 AND 74775) GROUP BY occupation.relationship. 'native.country'

Resulted in 1585 records

Normalized Euclidean distance for (age): 28.97

Hellinger Distance: 0.369

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# Real

	occupation	workclass	SUM(capital)	COUNT(*)
88	Transport-moving	?	2414.000000	1.000000
6	Adm-clerical	?	0.000000	2.000000
64	Prof-specialty	Private	8035962.000000	3397.000000
13	Armed-Forces	Federal-gov	5411.000000	14.000000
35	Handlers-cleaners	?	4416.000000	2.000000

# Synthetic

	occupation	workclass	SUM(capital)	COUNT(*)
88	Transport-moving	?	-10.865275	2
6	Adm-clerical	?	39.801273	5
64	Prof-specialty	Private	51297.453965	3461
13	Armed-Forces	Federal-gov	-1319.293983	117
35	Handlers-cleaners	?	13.734085	2

# SQL for Real:

SELECT occupation, workclass, SUM(capital), COUNT(\*) FROM C1 WHERE (education <> 'HS-grad' OR income = '>50K') OR (race LIKE 'White' OR `marital.status` LIKE 'Separated') OR (`native.country` LIKE 'United-States' OR capital < 0) AND (workclass = 'Private' AND sex <> 'Male') GROUP BY occupation, workclass

Resulted in 83 records

# SQL for Synthetic:

 $SELECT\ occupation, workclass, SUM (capital),\ COUNT(*)\ FROM\ C1\_syn\_06\ WHERE\ (education <> 'HS-grad'\ OR\ income = '>50K')\ OR\ (race\ LIKE\ 'White'\ OR\ `marital.status'\ LIKE\ 'Separated')\ OR\ (`native.country'\ LIKE\ 'United-States'\ OR\ capital\ <0)\ AND\ (workclass = 'Private'\ AND\ sex <> 'Male')\ GROUP\ BY\ occupation, workclass$ 

Resulted in 95 records

Normalized Euclidean distance for (capital): 9.11

Hellinger Distance: 0.036

			Real			
	marital.status	native.country	occupation	income	MIN(capital)	COUNT(*)
1587	Widowed	Japan	Adm-clerical	<=50K	nan	nan
1521	Separated	United-States	Other-service	<=50K	-1876.000000	212.000000
1164	Never-married	Mexico	?	<=50K	0.000000	17.000000
<b>759</b>	Married-civ-spouse	United-States	Armed-Forces	<=50K	0.000000	2.000000
224	Divorced	Puerto-Rico	Transport-moving	<=50K	0.000000	1.000000

	marital.status	native.country	occupation	income	MIN(capital)	COUNT(*)
1587	Widowed	Japan	Adm-clerical	<=50K	-259.120491	9
1521	Separated	United-States	Other-service	<=50K	-273.925045	141
1164	Never-married	Mexico	?	<=50K	158.783815	1
759	Married-civ-spouse	United-States	Armed-Forces	<=50K	-135.748898	9
224	Divorced	Puerto-Rico	Transport-moving	<=50K	-226.296837	48

#### SOL for Real:

SELECT `marital.status`, `native.country`,occupation,income,MIN(capital), COUNT(\*) FROM C1 WHERE (workclass <> 'Self-emp-not-inc') AND (education <> 'Some-college' OR `hours.per.week` > 11) GROUP BY `marital.status`, `native.country`,occupation,income

Resulted in 1608 records

### SQL for Synthetic:

SELECT 'marital.status', 'native.country', occupation, income, MIN(capital), COUNT(\*) FROM C1\_syn\_06 WHERE (workclass <> 'Self-emp-not-inc') AND (education <> 'Some-college' OR 'hours.per.week' > 11) GROUP BY 'marital.status', 'native.country', occupation, income

Resulted in 1677 records

Normalized Euclidean distance for (capital): 28.79

Hellinger Distance: 0.373

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Real

# education AVG(capital) COUNT(\*)

7	Assoc-acdm	546.376015	1601
6	9th	277.482804	756
9	Bachelors	1637.793645	8025
2	12th	179.727549	657
0	10th	269.432997	1388

#### Synthetic

# education AVG(capital) COUNT(\*)

7	Assoc-acdm	-6.168588	1755.000000
6	9th	4.983828	737.000000
9	Bachelors	-0.440649	8164.000000
2	12th	0.125910	626.000000
0	10th	-0.458255	1430.000000

# SQL for Real:

SELECT education, AVG(capital), COUNT(\*) FROM C1 WHERE (age >= 26 OR education = 'Prof-school') OR (`hours.per.week` >= 35 OR relationship <> 'Husband') OR (income = '>50K' OR `native.country` = 'United-States') AND (sex <> 'Male' AND race IN ('Other', 'Asian-Pac-Islander', 'Black')) AND (`marital.status` IN ('Widowed', 'Married-civ-spouse', 'Separated', 'Divorced', 'Married-AF-spouse', 'Married-spouse-absent', 'Never-married') AND fnlwgt <> 160120) OR (capital >= 0 OR occupation = 'Exec-managerial') GROUP BY education

Resulted in 16 records

# SQL for Synthetic:

SELECT education,AVG(capital), COUNT(\*) FROM C1\_syn\_06 WHERE (age >= 26 OR education = 'Prof-school') OR (`hours.per.week` >= 35 OR relationship <> 'Husband') OR (income = '>50K' OR `native.country` = 'United-States') AND (sex <> 'Male' AND race IN ('Other', 'Asian-Pac-Islander', 'Black')) AND (`marital.status` IN ('Widowed', 'Married-civ-spouse', 'Separated', 'Divorced', 'Married-AF-spouse', 'Married-spouse-absent', 'Never-married') AND fnlwgt <> 160120) OR (capital >= 0 OR occupation = 'Exec-managerial') GROUP BY education

Resulted in 16 records

Normalized Euclidean distance for (capital): 4.0

Hellinger Distance: 0.026

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# Real

workclass relationship race occupation education native.country income sex SUM(capital) COUNT(\*)

# Synthetic

# workclass relationship race occupation education native.country income sex SUM(capital) COUNT(\*)

# SQL for Real:

SELECT workclass, relationship, race, occupation, education, `native.country`, income, sex, SUM(capital), COUNT(\*) FROM C1 WHERE (race <> 'Black') AND (income <> '<=50K' AND `marital.status` LIKE 'Married-civ-spouse') AND (`hours.per.week` > 20 AND relationship = 'Unmarried') GROUP BY workclass, relationship, race, occupation, education, `native.country`, income, sex

Resulted in 0 records

# SQL for Synthetic:

SELECT workclass, relationship, race, occupation, education, `native.country`, income, sex, SUM(capital), COUNT(\*) FROM C1\_syn\_06 WHERE (race <> 'Black') AND (income <> '<=50K' AND `marital.status` LIKE 'Married-civ-spouse') AND (`hours.per.week` > 20 AND relationship = 'Unmarried') GROUP BY workclass, relationship, race, occupation, education, `native.country`, income, sex

Resulted in 0 records

Normalized Euclidean distance for (capital): nan

Hellinger Distance: nan

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			Real		
	native.country	marital.status	relationship	AVG(`hours.per.week`)	COUNT(*)
21	?	Never-married	Not-in-family	40.217949	156.000000
319	Laos	Divorced	Own-child	nan	nan
64	Columbia	Divorced	Husband	nan	nan
225	Hungary	Widowed	Not-in-family	11.500000	2.000000
<b>544</b>	United-States	Married-spouse-absent	Own-child	36.795455	44.000000

Synthetic

	native.country	marital.status	relationship A	VG(`hours.per.week`	) COUNT(*)
21	?	Never-married	Not-in-family	40.023821	164
319	Laos	Divorced	Own-child	40.014150	12
64	Columbia	Divorced	Husband	40.116834	2
225	Hungary	Widowed	Not-in-family	40.008019	4
<b>544</b>	United-States	Married-spouse-absent	Own-child	39.913841	39

### SOL for Real:

SELECT `native.country`, `marital.status`,relationship,AVG(`hours.per.week`), COUNT(\*) FROM C1 WHERE (`native.country` LIKE 'United-States' OR income <> '>>50K') AND (fnlwgt >= 268832 AND workclass = 'Private') OR (`marital.status` <> 'Married-civ-spouse' OR age <= 30) OR (relationship IN ('Own-child', 'Wife', 'Husband', 'Unmarried', 'Other-relative') OR `hours.per.week` BETWEEN 20 AND 40) GROUP BY `native.country`, `marital.status`,relationship

Resulted in 575 records

### SQL for Synthetic:

SELECT `native.country`, `marital.status`,relationship,AVG(`hours.per.week`), COUNT(\*) FROM C1\_syn\_06 WHERE (`native.country` LIKE 'United-States' OR income <> '>50K') AND (fnlwgt >= 268832 AND workclass = 'Private') OR (`marital.status` <> 'Married-civ-spouse' OR age <= 30) OR (relationship IN ('Own-child', 'Wife', 'Husband', 'Unmarried', 'Other-relative') OR `hours.per.week` BETWEEN 20 AND 40) GROUP BY `native.country`, `marital.status`, relationship

Resulted in 588 records

Normalized Euclidean distance for (`hours.per.week`): 19.13

Hellinger Distance: 0.397

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Real

# education MAX(capital) COUNT(\*)

Synthetic

# education MAX(capital) COUNT(\*)

#### SQL for Real:

 $SELECT\ education, MAX(capital),\ COUNT(*)\ FROM\ C1\ WHERE\ (occupation <> '?')\ AND\ (`native.country`\ LIKE\ '?'\ OR\ `marital.status`\ <> 'Never-married')\ AND\ (education\ LIKE\ 'Bachelors'\ AND\ fnlwgt\ =\ 248445)\ AND\ (age\ >=\ 42\ AND\ capital\ =\ 0)\ GROUP\ BY\ education$ 

Resulted in 0 records

# SQL for Synthetic:

 $SELECT\ education, MAX (capital),\ COUNT(*)\ FROM\ C1\_syn\_06\ WHERE\ (occupation <> '?')\ AND\ (`native.country`\ LIKE\ '?'\ OR\ `marital.status` <> 'Never-married')\ AND\ (education\ LIKE\ 'Bachelors'\ AND\ fnlwgt = 248445)\ AND\ (age >= 42\ AND\ capital = 0)\ GROUP\ BY\ education$ 

Resulted in 0 records

Normalized Euclidean distance for (capital): nan

Hellinger Distance: nan

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# Real

	workclass	income	MIN(fnlwgt)	COUNT(*)
7	Private	>50K	13769	1330
1	?	>50K	109912	35
12	State-gov	<=50K	26880	29
4	Local-gov	<=50K	31251	56
5	Local-gov	>50K	24982	212

# Synthetic

	workclass	income	MIN(fnlwgt)	COUNT(*)
7	Private	>50K	167662.404018	98.000000
1	?	>50K	178959.896672	1.000000
12	State-gov	<=50K	154372.541348	45.000000
4	Local-gov	<=50K	170514.500354	80.000000
5	Local-gov	>50K	171963.230511	17.000000

# SQL for Real:

SELECT workclass,income,MIN(fnlwgt), COUNT(\*) FROM C1 WHERE (age = 44) OR (education IN ('Some-college', '12th', 'Assoc-voc', '5th-6th', '11th', 'Prof-school', 'Assoc-acdm', '7th-8th', '1st-4th', 'Preschool', 'HS-grad', '10th', 'Masters', 'Bachelors') OR capital > 0) AND ((fnlwgt BETWEEN 200381 AND 250804) AND income <> '<=50K') GROUP BY workclass,income

Resulted in 14 records

# SQL for Synthetic:

SELECT workclass,income,MIN(fnlwgt), COUNT(\*) FROM C1\_syn\_06 WHERE (age = 44) OR (education IN ('Some-college', '12th', 'Assoc-voc', '5th-6th', '11th', 'Prof-school', 'Assoc-acdm', '7th-8th', '1st-4th', 'Preschool', 'HS-grad', '10th', 'Masters', 'Bachelors') OR capital > 0) AND ((fnlwgt BETWEEN 200381 AND 250804) AND income <> '<=50K') GROUP BY workclass,income

Resulted in 14 records

Normalized Euclidean distance for (fnlwgt): 3.74

Hellinger Distance: 0.462

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#### Real

	marital.status	MIN(`hours.per.week`) COUNT(		
0	Divorced	1	3301	
6	Widowed	3	271	
1	Married-AF-spouse	10	18	
3	Married-spouse-absent	5	289	
2	Married-civ-spouse	1	16591	

### Synthetic

		- J	
	marital.status	MIN(`hours.per.week`)	COUNT(*)
0	Divorced	39.880333	3453.000000
6	Widowed	39.907161	321.000000
1	Married-AF-spouse	nan	nan
3	Married-spouse-absent	39.909438	246.000000
2	Married-civ-spouse	39.870472	16351.000000

### SOL for Real:

SELECT `marital.status`,MIN(`hours.per.week`), COUNT(\*) FROM C1 WHERE (relationship IN ('Not-in-family', 'Wife', 'Husband', 'Other-relative', 'Own-child') AND age BETWEEN 30 AND 57) GROUP BY `marital.status`

Resulted in 7 records

# SQL for Synthetic:

SELECT marital.status', MIN('hours.per.week'), COUNT(\*) FROM C1\_syn\_06 WHERE (relationship IN ('Not-in-family', 'Wife', 'Husband', 'Other-relative', 'Own-child') AND age BETWEEN 30 AND 57) GROUP BY 'marital.status'

Resulted in 6 records

Normalized Euclidean distance for ('hours.per.week'): 2.45

Hellinger Distance: 0.014

R	02	1

	marital.status	relationship	occupation	sex	MIN(capital)	COUNT(*)
512	Separated	Not-in-family	Transport-moving	Male	0.000000	27.000000
613	Widowed	Not-in-family	Prof-specialty	Male	-2282.000000	12.000000
<b>590</b>	Separated	Wife	Machine-op-inspct	Female	nan	nan
606	Widowed	Not-in-family	Machine-op-inspct	Female	-1870.000000	35.000000
281	Married-spouse-absent	Other-relative	Craft-repair	Male	0.000000	9.000000

### Synthetic

	marital.status	relationship	occupation	sex	MIN(capital)	COUNT(*)
512	Separated	Not-in-family	Transport-moving	Male	-202.109058	15
613	Widowed	Not-in-family	Prof-specialty	Male	-209.797813	13
<b>590</b>	Separated	Wife	Machine-op-inspct	Female	23.271080	1
606	Widowed	Not-in-family	Machine-op-inspct	Female	-267.752085	37
281	Married-spouse-absent	Other-relative	Craft-repair	Male	-57.081414	2

# SQL for Real:

SELECT `marital.status`,relationship,occupation,sex,MIN(capital), COUNT(\*) FROM C1 WHERE (capital = 15024 OR income = '<=50K') AND (relationship = 'Unmarried' AND `hours.per.week` = 40) AND (occupation LIKE 'Prof-specialty' AND age > 31) AND (workclass = 'Private' AND sex = 'Male') OR (`marital.status` IN ('Separated', 'Married-AF-spouse', 'Married-spouse-absent', 'Married-civ-spouse', 'Divorced', 'Widowed', 'Never-married') OR education IN ('HS-grad', '1st-4th', '12th', '10th', 'Preschool', 'Assoc-acdm', 'Assoc-voc')) GROUP BY `marital.status`, relationship,occupation,sex

Resulted in 611 records

# $\underline{SQL\ for\ Synthetic:}$

SELECT `marital.status`,relationship,occupation,sex,MIN(capital), COUNT(\*) FROM C1\_syn\_06 WHERE (capital = 15024 OR income = '<=50K') AND (relationship = 'Unmarried' AND `hours.per.week` = 40) AND (occupation LIKE 'Prof-specialty' AND age > 31) AND (workclass = 'Private' AND sex = 'Male') OR (`marital.status` IN ('Separated', 'Married-AF-spouse', 'Married-spouse-absent', 'Married-civ-spouse', 'Divorced', 'Widowed', 'Never-married') OR education IN ('HS-grad', '1st-4th', '12th', '10th', 'Preschool', 'Assoc-acdm', 'Assoc-ocdm', 'Assoc-voc')) GROUP BY `marital.status`, relationship,occupation,sex

Resulted in 688 records

Normalized Euclidean distance for (capital): 23.49

Hellinger Distance: 0.059

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# Real

	workclass	relationship	education	SUM(fnlwgt)	COUNT(*)
<b>54</b>	State-gov	Unmarried	Assoc-voc	225160	2
1	?	Unmarried	11th	231016	2
22	Local-gov	Unmarried	Masters	468000	4
<b>24</b>	Local-gov	Unmarried	Some-college	2061205	16
0	?	Unmarried	10th	339787	3

# Synthetic

	workclass	relationship	education	SUM(fnlwgt)	COUNT(*
<b>54</b>	State-gov	Unmarried	Assoc-voc	nan	nan
1	?	Unmarried	11th	nan	nan
22	Local-gov	Unmarried	Masters	nan	nan
24	Local-gov	Unmarried	Some-college	nan	nan
0	?	Unmarried	10th	nan	nan

# SQL for Real:

(capital = 0 AND fnlwgt BETWEEN 99665 AND 156606) GROUP BY workclass, relationship, education

Resulted in 59 records

# SQL for Synthetic:

SELECT workclass, relationship, education, SUM(fnlwgt), COUNT(\*) FROM C1\_syn\_06 WHERE ((`hours.per.week` BETWEEN 20 AND 40) AND relationship LIKE 'Unmarried') AND (capital = 0 AND fnlwgt BETWEEN 99665 AND 156606) GROUP BY workclass, relationship, education

Resulted in 0 records

Normalized Euclidean distance for (fnlwgt): nan

Hellinger Distance: nan

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#### Real

race	native.country	sex	relationship	income	occupation	marital.status	workclass	SUM(`hours.per.week`)	COUNT(*)
<b>1660</b> Black	Puerto-Rico	Female	Wife	<=50K	Exec-managerial	Married-civ-spouse	Private	nan	nan
<b>5591</b> White	Peru	Male	Husband	>50K	Exec-managerial	Married-civ-spouse	Self-emp-inc	nan	nan
<b>3896</b> White	Germany	Male	Not-in-family	<=50K	Machine-op-inspct	Never-married	Private	nan	nan
<b>7139</b> White	Taiwan	Male	Husband	<=50K	Machine-op-inspct	Married-civ-spouse	Local-gov	nan	nan
<b>8406</b> White	United-States	Male	Not-in-family	>50K	Prof-specialty	Never-married	Private	3237.000000	71.000000

### Synthetic

race	native.country	sex	relationship	income	occupation	marital.status	workclass	SUM(`hours.per.week`)	) COUNT(*)
<b>1660</b> Black	Puerto-Rico	Female	Wife	<=50K	Exec-managerial	Married-civ-spouse	Private	200.046887	5
<b>5591</b> White	Peru	Male	Husband	>50K	Exec-managerial	Married-civ-spouse	Self-emp-inc	40.353524	1
<b>3896</b> White	Germany	Male	Not-in-family	<=50K	Machine-op-inspct	Never-married	Private	40.013104	1
<b>7139</b> White	Taiwan	Male	Husband	<=50K	Machine-op-inspct	Married-civ-spouse	Local-gov	40.007008	1
<b>8406</b> White	United-States	Male	Not-in-family	>50K	Prof-specialty	Never-married	Private	442.511919	11

#### SQL for Real:

SELECT race, `native.country`,sex,relationship,income,occupation, `marital.status`,workclass,SUM(`hours.per.week`), COUNT(\*) FROM C1 WHERE (`hours.per.week` >= 40)
OR ((age BETWEEN 45 AND 64) OR education IN ('1st-4th', 'Preschool', '5th-6th', 'Some-college', '11th', '10th')) OR (`marital.status` = 'Never-married' OR capital BETWEEN
0 AND 0) OR (sex IN ('Male', 'Female') OR race <> 'White') OR (workclass = 'Private' OR income LIKE '<=50K') OR (`native.country` = 'United-States' OR fnlwgt > 272950)
GROUP BY race, `native.country`, sex, relationship, income, occupation, `marital.status`, workclass

Resulted in 6492 records

#### SQL for Synthetic:

SELECT race, `native.country`, sex,relationship,income,occupation, `marital.status`,workclass,SUM(`hours.per.week`), COUNT(\*) FROM C1\_syn\_06 WHERE (`hours.per.week`) >= 40) OR ((age BETWEEN 45 AND 64) OR education IN ('1st-4th', 'Preschool', '5th-6th', 'Some-college', '11th', '10th')) OR (`marital.status` = 'Never-married' OR capital BETWEEN 0 AND 0) OR (sex IN ('Male', 'Female') OR race <> 'White') OR (workclass = 'Private' OR income LIKE '<=50K') OR (`native.country` = 'United-States' OR fnlwgt > 272950) GROUP BY race, `native.country`, sex,relationship,income,occupation, `marital.status`, workclass

Resulted in 8900 records

Normalized Euclidean distance for (`hours.per.week`): 49.69

Hellinger Distance: 0.303

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# Real

# education SUM(fnlwgt) COUNT(\*)

8	Assoc-voc	369786888	2061
12	Masters	482192559	2657
7	Assoc-acdm	310113821	1601
10	Doctorate	109349744	594
9	Bachelors	1511601409	8025

# Synthetic

	education	SUM(fnlwgt)	COUNT(*)		
8	Assoc-voc	348829865.375829	1935.000000		
12	Masters	497669788.004103	2810.000000		
7	Assoc-acdm	319258078.054042	1755.000000		
10	Doctorate	90887686.639099	526.000000		
9	Bachelors	1479193991.288778	8164.000000		

# SQL for Real:

SELECT education, SUM(fnlwgt), COUNT(\*) FROM C1 WHERE (fnlwgt < 300812) AND (capital <> 0 AND age BETWEEN 49 AND 34) OR (occupation = 'Exec-managerial' OR race = 'White') OR (workclass <> 'Private' OR income = '<=50K') OR (`hours.per.week` >= 40 OR education <> '10th') GROUP BY education

Resulted in 16 records

# SQL for Synthetic:

SELECT education, SUM(fnlwgt), COUNT(\*) FROM C1\_syn\_06 WHERE (fnlwgt < 300812) AND (capital <> 0 AND age BETWEEN 49 AND 34) OR (occupation = 'Execmanagerial' OR race = 'White') OR (workclass <> 'Private' OR income = '<=50K') OR (`hours.per.week` >= 40 OR education <> '10th') GROUP BY education

Resulted in 16 records

Normalized Euclidean distance for (fnlwgt): 4.0

 $Hellinger\ Distance:\ 0.026$ 

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# Real

	workclass	relationship	occupation	sex	income	marital.status	education	native.country	SUM(fnlwgt)	COUNT(*)
24	Private	Unmarried	Handlers-cleaners	Female	<=50K	Separated	10th	United-States	269784	1
11	Private	Not-in-family	Machine-op-inspct	Female	<=50K	Separated	HS-grad	United-States	281138	1
19	Private	Unmarried	Adm-clerical	Female	<=50K	Separated	10th	United-States	280278	1
16	Private	Own-child	Machine-op-inspct	Female	<=50K	Separated	HS-grad	United-States	257500	1
13	Private	Not-in-family	Other-service	Female	<=50K	Separated	HS-grad	United-States	800168	3

	workclass	relationship	occupation	sex	income	marital.status	education	native.country	SUM(fnlwgt)	COUNT(*)
24	Private	Unmarried	Handlers-cleaners	Female	<=50K	Separated	10th	United-States	nan	nan
11	Private	Not-in-family	Machine-op-inspct	Female	<=50K	Separated	HS-grad	United-States	nan	nan
19	Private	Unmarried	Adm-clerical	Female	<=50K	Separated	10th	United-States	nan	nan
16	Private	Own-child	Machine-op-inspct	Female	<=50K	Separated	HS-grad	United-States	nan	nan
13	Private	Not-in-family	Other-service	Female	<=50K	Separated	HS-grad	United-States	nan	nan

#### SOL for Real:

SELECT workclass, relationship, occupation, sex, income, `marital.status`, education, `native.country`, SUM(fnlwgt), COUNT(\*) FROM C1 WHERE (fnlwgt BETWEEN 254478 AND 281792) AND (`marital.status` LIKE 'Separated' AND sex = 'Female') GROUP BY workclass, relationship, occupation, sex, income, `marital.status`, education, `native.country`

Resulted in 38 records

### SQL for Synthetic:

SELECT workclass, relationship, occupation, sex, income, `marital.status`, education, `native.country`, SUM(fnlwgt), COUNT(\*) FROM C1\_syn\_06 WHERE (fnlwgt BETWEEN 254478 AND 281792) AND (`marital.status` LIKE 'Separated' AND sex = 'Female') GROUP BY workclass, relationship, occupation, sex, income, `marital.status`, education, `native.country`

Resulted in 0 records

Normalized Euclidean distance for (fnlwgt): nan

Hellinger Distance: nan

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#### Real

	relationship	native.country	occupation	race	AVG(capital)	COUNT(*)
1405	Other-relative	Puerto-Rico	Transport-moving	White	nan	nan
1910	Own-child	Thailand	Farming-fishing	White	nan	nan
769	Not-in-family	Hungary	Handlers-cleaners	White	nan	nan
2645	Wife	Peru	Prof-specialty	White	0.000000	1.000000
2379	Unmarried	Scotland	Prof-specialty	White	nan	nan

### Synthetic

	relationship	native.country	occupation	race	AVG(capital)	COUNT(*)
1405	Other-relative	Puerto-Rico	Transport-moving	White	29.181273	3
1910	Own-child	Thailand	Farming-fishing	White	-30.281394	5
769	Not-in-family	Hungary	Handlers-cleaners	White	28.332768	9
2645	Wife	Peru	Prof-specialty	White	17.230924	7
2379	Unmarried	Scotland	Prof-specialty	White	-29.324200	7

### SQL for Real:

SELECT relationship, `native.country`,occupation,race,AVG(capital), COUNT(\*) FROM C1 WHERE (race IN ('Amer-Indian-Eskimo', 'Black', 'White') OR capital BETWEEN 0 AND 0) OR (sex LIKE 'Male' OR workclass LIKE 'Private') OR (income IN ('<=50K', '>50K') OR `marital.status` LIKE 'Married-civ-spouse') GROUP BY relationship, `native.country`,occupation,race

Resulted in 2127 records

# SQL for Synthetic:

SELECT relationship, `native.country`, occupation, race, AVG(capital), COUNT(\*) FROM C1\_syn\_06 WHERE (race IN ('Amer-Indian-Eskimo', 'Black', 'White') OR capital BETWEEN 0 AND 0) OR (sex LIKE 'Male' OR workclass LIKE 'Private') OR (income IN ('<=50K', '>50K') OR `marital.status` LIKE 'Married-civ-spouse') GROUP BY relationship, `native.country`, occupation, race

Resulted in 2763 records

Normalized Euclidean distance for (capital): 32.37

Hellinger Distance: 0.357

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# Real

	education	marital.status	race	relationship	SUM(`hours.per.week`)	COUNT(*)
813	Masters	Married-civ-spouse	Other	Husband	175	4
21	10th	Married-civ-spouse	Other	Wife	48	1
914	Prof-school	Separated	White	Unmarried	128	3
709	HS-grad	Married-civ-spouse	Asian-Pac-Islander	Other-relative	424	10
109	11th	Never-married	Asian-Pac-Islander	Not-in-family	135	3

# Synthetic

	education	marital.status	race	relationship	SUM(`hours.per.week`)	COUNT(*)
813	Masters	Married-civ-spouse	Other	Husband	40.046017	1.000000
21	10th	Married-civ-spouse	Other	Wife	nan	nan
914	Prof-school	Separated	White	Unmarried	80.029681	2.000000
709	HS-grad	Married-civ-spouse	Asian-Pac-Islander	Other-relative	119.942627	3.000000
109	11th	Never-married	Asian-Pac-Islander	Not-in-family	119.953567	3.000000

# SQL for Real:

SELECT education, 'marital.status', race, relationship, SUM('hours.per.week'), COUNT(\*) FROM C1 WHERE (fnlwgt > 341368) AND (capital = 0 AND workclass LIKE 'Private') AND ('native.country' = 'United-States' AND relationship <> 'Husband') OR ((age BETWEEN 28 AND 46) OR race IN ('Amer-Indian-Eskimo', 'Asian-Pac-Islander')) OR ('marital.status' IN ('Separated', 'Divorced', 'Married-civ-spouse') OR income <> '>50K') GROUP BY education, 'marital.status', race, relationship

Resulted in 1023 records

# SQL for Synthetic:

SELECT education, `marital.status`,race,relationship,SUM(`hours.per.week`), COUNT(\*) FROM C1\_syn\_06 WHERE (fnlwgt > 341368) AND (capital = 0 AND workclass LIKE 'Private') AND (`native.country` = 'United-States' AND relationship <> 'Husband') OR ((age BETWEEN 28 AND 46) OR race IN ('Amer-Indian-Eskimo', 'Asian-Pac-Islander')) OR (`marital.status` IN ('Separated', 'Divorced', 'Married-civ-spouse') OR income <> '>50K') GROUP BY education, `marital.status`, race, relationship

Resulted in 964 records

Normalized Euclidean distance for ('hours.per.week'): 27.5

	Real								
	relationship	SUM(`hours.per.week`)	COUNT(*)						
5	Wife	74073.000000	2023.000000						
2	Other-relative	4665.000000	123.000000						
0	Husband	784707.000000	17721.000000						
1	Not-in-family	601.000000	12.000000						
3	Own-child	4628.000000	124.000000						

### relationship SUM('hours.per.week') COUNT(\*)

5	Wife	50886.984470	1273
2	Other-relative	3431.743160	86
0	Husband	409396.068011	10213
1	Not-in-family	1279.524913	32
3	Own-child	4550.749863	114

#### SOL for Real:

SELECT relationship, SUM(`hours.per.week'), COUNT(\*) FROM C1 WHERE (`native.country` LIKE 'United-States' AND `marital.status` = 'Married-civ-spouse') GROUP BY relationship

Resulted in 5 records

SQL for Synthetic:

SELECT relationship, SUM(`hours.per.week`), COUNT(\*) FROM C1 syn 06 WHERE (`native.country` LIKE 'United-States' AND `marital.status` = 'Married-civ-spouse') GROUP BY relationship

Resulted in 6 records

Normalized Euclidean distance for (`hours.per.week`): 2.24

Hellinger Distance: 0.027

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Real

	race	income	education	native.country	occupation	sex	SUM(`hours.per.week`)	COUNT(*)
249	Asian-Pac-Islander	<=50K	Assoc-acdm	United-States	Machine-op-inspct	Male	40	1
13	Amer-Indian-Eskimo	<=50K	11th	United-States	Craft-repair	Male	40	1
2750	White	<=50K	HS-grad	United-States	Prof-specialty	Male	3940	97
2897	White	<=50K	Some-college	?	Sales	Female	80	2
1790	White	<=50K	12th	?	Transport-moving	Male	10	1

# Synthetic

	race	income	education	native.country	occupation	sex	SUM(`hours.per.week`	) COUNT(*)
249	Asian-Pac-Islander	<=50K	Assoc-acdm	United-States	Machine-op-inspct	Male	nan	nan
13	Amer-Indian-Eskimo	<=50K	11th	United-States	Craft-repair	Male	nan	nan
2750	White	<=50K	HS-grad	United-States	Prof-specialty	Male	120.073569	3.000000
2897	White	<=50K	Some-college	?	Sales	Female	nan	nan
1790	White	<=50K	12th	?	Transport-moving	Male	nan	nan

Select reac, income, education, `native.country`, occupation, sex, SUM(`hours.per.week`), COUNT(\*) FROM C1 WHERE (workclass = 'State-gov' AND `native.country` IN ('Scotland', 'Iran', 'Honduras', 'Hungary', 'India', 'England', 'Mexico', 'Taiwan', 'Poland', 'United-States', 'Peru', 'China', 'Cuba', 'Holand-Netherlands', 'Dominican-Republic', 'Hong', 'South', 'Portugal', 'France', 'Trinadad&Tobago', 'Cambodia', 'Nicaragua', 'Japan', 'Greece', '?', 'Ecuador', 'Puerto-Rico', 'Haiti', 'Vietnam', 'Thailand', 'Canada', 'Columbia', 'Laos', 'El-Salvador')) OR (age > 42 OR occupation <> 'Exec-managerial') AND (`marital.status` <> 'Divorced' AND capital BETWEEN 0 AND 0) GROUP BY race,income,education, `native.country`,occupation,sex

Resulted in 3583 records

# SOL for Synthetic:

SELECT race,income,education, `native.country`,occupation,sex,SUM(`hours.per.week`), COUNT(\*) FROM C1\_syn\_06 WHERE (workclass = 'State-gov' AND `native.country` IN ('Scotland', 'Iran', 'Honduras', 'Hungary', 'India', 'England', 'Mexico', 'Taiwan', 'Poland', 'United-States', 'Peru', 'China', 'Cuba', 'Holand-Netherlands', 'Dominican-Republic', 'Hong', 'South', 'Portugal', 'France', 'Trinadad&Tobago', 'Cambodia', 'Nicaragua', 'Japan', 'Greece', '?', 'Ecuador', 'Puerto-Rico', 'Haiti', 'Vietnam', 'Thailand', 'Canada', 'Columbia', 'Laos', 'El-Salvador')) OR (age > 42 OR occupation <> 'Exec-managerial') AND (`marital.status` <> 'Divorced' AND capital BETWEEN 0 AND 0) GROUP BY race,income,education, `native.country`,occupation,sex

Resulted in 672 records

Normalized Euclidean distance for ('hours.per.week'): 19.1

Hellinger Distance: 0.437

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Real

	race	native.country	MAX(age)	COUNT(*)
<b>55</b>	Black	Holand-Netherlands	nan	nan
14	Amer-Indian-Eskimo	Scotland	nan	nan
83	Other	Guatemala	40.000000	8.000000
<b>59</b>	Black	Ireland	nan	nan
<b>72</b>	Black	Thailand	25.000000	1.000000

		Synthetic		
	race	native.country	MAX(age)	COUNT(*)
55	Black	Holand-Netherlands	26	23
14	Amer-Indian-Eskimo	Scotland	34	1
83	Other	Guatemala	34	2
59	Black	Ireland	31	41
72	Black	Thailand	20	20

#### SQL for Real

SELECT race, `native.country`, MAX(age), COUNT(\*) FROM C1 WHERE (capital = 0 AND race <> 'White') AND (occupation <> 'Sales' AND relationship IN ('Wife', 'Other-relative', 'Own-child', 'Husband')) AND (age < 19 AND education LIKE 'HS-grad') OR (income IN ('>50K', '<=50K') OR `marital.status` = 'Married-civ-spouse') AND (`native.country` <> 'United-States' AND sex IN ('Female', 'Male')) GROUP BY race, `native.country`

Resulted in 127 records

# SQL for Synthetic:

SELECT race, 'native.country', MAX(age), COUNT(\*) FROM C1\_syn\_06 WHERE (capital = 0 AND race <> 'White') AND (occupation <> 'Sales' AND relationship IN ('Wife', 'Other-relative', 'Own-child', 'Husband')) AND (age < 19 AND education LIKE 'HS-grad') OR (income IN ('>50K', '<=50K') OR `marital.status` = 'Married-civ-spouse') AND ('native.country` <> 'United-States' AND sex IN ('Female', 'Male')) GROUP BY race, 'native.country`

Resulted in 139 records

Normalized Euclidean distance for (age): 9.8

Hellinger Distance: 0.664

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				Real			
	income	native.country	workclass	marital.status	race	MIN(fnlwgt)	COUNT(*)
1199	>50K	United-States	Private	Divorced	Asian-Pac-Islander	85815	1
489	<=50K	Mexico	?	Married-civ-spouse	Other	291547	2
1075	>50K	Jamaica	Local-gov	Married-civ-spouse	Black	145178	1
421	<=50K	Ireland	Private	Never-married	Asian-Pac-Islander	194951	1
943	>50K	?	Private	Never-married	Black	143776	1

# Synthetic

		income	native.country	workclass	marital.status	race	MIN(fnlwgt)	COUNT(*)
11	199	>50K	United-States	Private	Divorced	Asian-Pac-Islander	nan	nan
4	89	<=50K	Mexico	?	Married-civ-spouse	Other	nan	nan
10	75	>50K	Jamaica	Local-gov	Married-civ-spouse	Black	nan	nan
4	21	<=50K	Ireland	Private	Never-married	Asian-Pac-Islander	nan	nan
9	43	>50K	?	Private	Never-married	Black	nan	nan

### SQL for Real

SELECT income, `native.country`,workclass, `marital.status`,race,MIN(fnlwgt), COUNT(\*) FROM C1 WHERE (capital BETWEEN 0 AND 0) OR (age <> 41 OR income IN ('>50K', '<=50K')) AND (`marital.status` IN ('Married-spouse-absent', 'Separated', 'Married-civ-spouse', 'Married-AF-spouse', 'Widowed') AND sex = 'Female') AND (race <> 'White' AND relationship <> 'Husband') AND (fnlwgt = 274398 AND `native.country` IN ('England', 'Peru')) AND (`hours.per.week` = 24 AND education = 'HS-grad') GROUP BY income, `native.country`, workclass, `marital.status`, race

Resulted in 1264 records

# SQL for Synthetic:

SELECT income, 'native.country', workclass, 'marital.status', race, MIN(fnlwgt), COUNT(\*) FROM C1\_syn\_06 WHERE (capital BETWEEN 0 AND 0) OR (age <> 41 OR income IN ('>50K', '<=50K')) AND ('marital.status' IN ('Married-spouse-absent', 'Separated', 'Married-civ-spouse', 'Married-AF-spouse', 'Widowed') AND sex = 'Female') AND (race <> 'White' AND relationship <> 'Husband') AND (fnlwgt = 274398 AND 'native.country' IN ('England', 'Peru')) AND ('hours.per.week' = 24 AND education = 'HS-grad') GROUP BY income, 'native.country', workclass, 'marital.status', race

Resulted in 0 records

Normalized Euclidean distance for (fnlwgt): nan

Hellinger Distance: nan

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Real

education AVG(age) COUNT(\*)

Synthetic

education AVG(age) COUNT(\*)

# SQL for Real:

SELECT education, AVG(age), COUNT(\*) FROM C1 WHERE ((age BETWEEN 54 AND 34) AND `native.country` <> 'United-States') AND (`marital.status` LIKE 'Married-civ-spouse' AND `hours.per.week` > 40) AND (relationship = 'Husband' AND race IN ('Asian-Pac-Islander', 'White', 'Black', 'Other', 'Amer-Indian-Eskimo')) GROUP BY education Resulted in 0 records

# SOL for Synthetic

SELECT education, AVG(age), COUNT(\*) FROM C1\_syn\_06 WHERE ((age BETWEEN 54 AND 34) AND `native.country` <> 'United-States') AND (`marital.status` LIKE 'Married-civ-spouse' AND `hours.per.week` > 40) AND (relationship = 'Husband' AND race IN ('Asian-Pac-Islander', 'White', 'Black', 'Other', 'Amer-Indian-Eskimo')) GROUP BY education

Resulted in 0 records

Normalized Euclidean distance for (age): nan

Hellinger Distance: nan

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	Real								
	marital.status	education	occupation	relationship	race	income	AVG(fnlwgt)	COUNT(*)	
2227	Separated	HS-grad	Protective-serv	Other-relative	Black	<=50K	171328.000000	1	
1285	Never-married	10th	?	Own-child	Black	<=50K	217778.000000	9	
1828	Never-married	HS-grad	Protective-serv	Other-relative	Black	<=50K	191376.500000	2	
124	Divorced	Assoc-voc	Exec-managerial	Own-child	Amer-Indian-Eskimo	<=50K	134220.000000	1	
<b>74</b>	Divorced	7th-8th	Other-service	Unmarried	Black	<=50K	334141.000000	1	

	marital.status education		occupation relationship		race	income	AVG(fnlwgt)	COUNT(*)
2227	Separated	HS-grad	Protective-serv	Other-relative	Black	<=50K	193690.626820	2.000000
1285	Never-married	10th	?	Own-child	Black	<=50K	169161.656152	8.000000
1828	Never-married	HS-grad	Protective-serv	Other-relative	Black	<=50K	182703.491313	1.000000
124	Divorced	Assoc-voc	Exec-managerial	Own-child	Amer-Indian-Eskimo	<=50K	nan	nan
<b>74</b>	Divorced	7th-8th	Other-service	Unmarried	Black	<=50K	185619.474668	1.000000

# SQL for Real:

SELECT `marital.status`,education,occupation,relationship,race,income,AVG(fnlwgt), COUNT(\*) FROM C1 WHERE (race <> 'White' AND age <> 25) GROUP BY `marital.status`,education,occupation,relationship,race,income

Resulted in 2470 records

# SQL for Synthetic:

SELECT marital.status, education, occupation, relationship, race, income, AVG(fnlwgt), COUNT(\*) FROM C1\_syn\_06 WHERE (race <> 'White' AND age <> 25) GROUP BY marital.status, education, occupation, relationship, race, income

Resulted in 1896 records

Normalized Euclidean distance for (fnlwgt): 32.97

Hellinger Distance: 0.22

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#### Real

	native.country	race	relationship	education	income	sex	AVG(age)	COUNT(*)
2912	United-States	Black	Not-in-family	Bachelors	<=50K	Male	35.333333	48.000000
1428	Japan	White	Not-in-family	Doctorate	>50K	Male	nan	nan
1362	Japan	Black	Own-child	12th	<=50K	Male	nan	nan
2171	Puerto-Rico	Black	Own-child	11th	<=50K	Female	nan	nan
3081	United-States	Other	Unmarried	HS-grad	<=50K	Male	22.000000	1.000000

#### Synthetic

	native.country	race	relationship	education	income	sex	AVG(age)	COUNT(*
2912	United-States	Black	Not-in-family	Bachelors	<=50K	Male	35.454545	22
1428	Japan	White	Not-in-family	Doctorate	>50K	Male	34.000000	1
1362	Japan	Black	Own-child	12th	<=50K	Male	42.000000	1
2171	Puerto-Rico	Black	Own-child	11th	<=50K	Female	18.000000	4
3081	United-States	Other	Unmarried	HS-grad	<=50K	Male	27.500000	4

# SQL for Real:

SELECT 'native.country', race, relationship, education, income, sex, AVG(age), COUNT(\*) FROM C1 WHERE (relationship <> 'Not-in-family') OR (occupation IN ('Protective-serv', 'Prof-specialty', 'Farming-fishing', '?', 'Machine-op-inspct', 'Other-service') AND race = 'White') OR (age = 32 OR capital <= 0) GROUP BY 'native.country', race, relationship, education, income, sex

Resulted in 2887 records

# SQL for Synthetic:

SELECT `native.country`,race,relationship,education,income,sex,AVG(age), COUNT(\*) FROM C1\_syn\_06 WHERE (relationship <> 'Not-in-family') OR (occupation IN ('Protective-serv', 'Prof-specialty', 'Farming-fishing', '?', 'Machine-op-inspct', 'Other-service') AND race = 'White') OR (age = 32 OR capital <= 0) GROUP BY `native.country`,race,relationship,education,income,sex

Resulted in 3396 records

Normalized Euclidean distance for (age): 34.25

Hellinger Distance: 0.364

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# Real

	education	occupation	race	marital.status	workclass	SUM(fnlwgt)	COUNT(*)
2529	Prof-school	Craft-repair	White	Married-civ-spouse	Self-emp-not-inc	422660	2
1852	HS-grad	Exec-managerial	Other	Married-civ-spouse	Local-gov	34640	1
1235	Bachelors	Adm-clerical	White	Married-civ-spouse	Local-gov	3320782	12
2210	HS-grad	Tech-support	White	Married-civ-spouse	State-gov	1247867	8
2165	HS-grad	Sales	Black	Divorced	Private	649321	2

# Synthetic

	education	occupation	race	marital.status	workclass	SUM(fnlwgt)	COUNT(*)
2529	Prof-school	Craft-repair	White	Married-civ-spouse	Self-emp-not-inc	1018890.224140	6.000000
1852	HS-grad	Exec-managerial	Other	Married-civ-spouse	Local-gov	nan	nan
1235	Bachelors	Adm-clerical	White	Married-civ-spouse	Local-gov	1267166.532916	7.000000
2210	HS-grad	Tech-support	White	Married-civ-spouse	State-gov	1342552.186451	8.000000
2165	HS-grad	Sales	Black	Divorced	Private	715468.095330	4.000000

# SQL for Real:

SELECT education,occupation,race, `marital.status`,workclass,SUM(fnlwgt), COUNT(\*) FROM C1 WHERE (sex <> 'Female' AND education <> '11th') GROUP BY education,occupation,race, `marital.status`,workclass

Resulted in 3129 records

SQL for Synthetic:

SELECT education,occupation,race, `marital.status`,workclass,SUM(fnlwgt), COUNT(\*) FROM C1\_syn\_06 WHERE (sex <> 'Female' AND education <> '11th') GROUP BY education,occupation,race, `marital.status`,workclass

Resulted in 2927 records

Normalized Euclidean distance for (fnlwgt): 43.69

Hellinger Distance: 0.113

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#### Real

	marital.status	occupation	relationship	native.country	education	sex	race	workclass	MIN(capital)	COUNT(*)
1884	Widowed	Other-service	Unmarried	Puerto-Rico	HS-grad	Female	Black	State-gov	nan	nan
455	Married-civ-spouse	Other-service	Husband	Peru	9th	Male	White	Local-gov	nan	nan
55	Divorced	Other-service	Not-in-family	Puerto-Rico	5th-6th	Female	White	Private	nan	nan
606	Married-civ-spouse	Other-service	Husband	United-States	Masters	Male	White	Private	0.000000	7.000000
10	Divorced	Other-service	Not-in-family	?	Some-college	Female	White S	elf-emp-not-inc	nan	nan

#### Synthetic

	marital.status	occupation	relationship	native.country	education	sex	race	workclass	MIN(capital)	COUNT(*)
1884	Widowed	Other-service	Unmarried	Puerto-Rico	HS-grad	Female	Black	State-gov	-53.357951	1
455	Married-civ-spouse	Other-service	Husband	Peru	9th	Male	White	Local-gov	-60.426615	2
55	Divorced	Other-service	Not-in-family	Puerto-Rico	5th-6th	Female	White	Private	-66.990580	1
606	Married-civ-spouse	Other-service	Husband	United-States	Masters	Male	White	Private	-54.065722	2
10	Divorced	Other-service	Not-in-family	?	Some-college	Female	White	Self-emp-not-inc	-167.328720	1

#### SOL for Real:

SELECT `marital.status`,occupation,relationship, `native.country`,education,sex,race,workclass,MIN(capital), COUNT(\*) FROM C1 WHERE (occupation LIKE 'Other-service')
AND (`native.country` IN ('Outlying-US(Guam-USVI-etc)', 'Scotland', 'Germany', 'Guatemala', 'Hungary', 'Italy') OR workclass IN ('Self-emp-not-inc', 'Local-gov', 'Self-emp-inc', 'Private', '?', 'Federal-gov')) GROUP BY `marital.status`,occupation,relationship, `native.country`,education,sex,race,workclass

Resulted in 1469 records

#### SQL for Synthetic:

SELECT marital.status, occupation, relationship, native.country, education, sex, race, workclass, MIN(capital), COUNT(\*) FROM C1\_syn\_06 WHERE (occupation LIKE 'Otherservice') AND ('native.country' IN ('Outlying-US(Guam-USVI-etc)', 'Scotland', 'Germany', 'Guatemala', 'Hungary', 'Italy') OR workclass IN ('Self-emp-not-inc', 'Local-gov', 'State-gov', 'Self-emp-inc', 'Private', '?', 'Federal-gov')) GROUP BY `marital.status', occupation, relationship, `native.country', education, sex, race, workclass

Resulted in 1917 records

Normalized Euclidean distance for (capital): 21.84

Hellinger Distance: 0.213

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# Real

	relationship	education	race	occupation	income	sex	marital.status	native.country	workclass MIN	(`hours.per.week`)	COUNT(*)
2072	Other-relative	HS-grad	White	Sales	<=50K	Female	Married-spouse-absent	Hungary	Private	nan	nan
2230	Own-child	1st-4th	White	Prof-specialty	<=50K	Female	Separated	India	Private	nan	nan
808	Not-in-family	Bachelors	White	Prof-specialty	>50K	Male	Married-civ-spouse	United-States	Private	nan	nan
2175	Own-child	10th	White	Handlers-cleaners	<=50K	Female	Separated	United-States	Private	nan	nan
2288	Own-child	Assoc-voc	White	Adm-clerical	<=50K	Male	Separated	?	Private	nan	nan

# Synthetic

	relationship	education	race	occupation	income	sex	marital.status	native.country	workclass MI	N(`hours.per.week`)	COUNT(*)
2072	Other-relative	HS-grad	White	Sales	<=50K	Female	Married-spouse-absent	Hungary	Private	39.973932	1
2230	Own-child	1st-4th	White	Prof-specialty	<=50K	Female	Separated	India	Private	39.961680	1
808	Not-in-family	Bachelors	White	Prof-specialty	>50K	Male	Married-civ-spouse	United-States	Private	40.257286	1
2175	Own-child	10th	White	Handlers-cleaners	<=50K	Female	Separated	United-States	Private	40.047494	1
2288	Own-child	Assoc-voc	White	Adm-clerical	<=50K	Male	Separated	?	Private	40.063989	1

# SQL for Real:

SELECT relationship,education,race,occupation,income,sex, `marital.status`, `native.country`,workclass,MIN(`hours.per.week`), COUNT(\*) FROM C1 WHERE (relationship IN ('Own-child', 'Not-in-family', 'Other-relative')) AND (workclass LIKE 'Private' OR sex = 'Male') AND (race LIKE 'White' AND `marital.status` <> 'Never-married') GROUP BY relationship,education,race,occupation,income,sex, `marital.status`, `native.country`,workclass

Resulted in 1814 records

# SQL for Synthetic:

SELECT relationship,education,race,occupation,income,sex, `marital.status`, `native.country`,workclass,MIN(`hours.per.week`), COUNT(\*) FROM C1\_syn\_06 WHERE (relationship IN ('Own-child', 'Not-in-family', 'Other-relative')) AND (workclass LIKE 'Private' OR sex = 'Male') AND (race LIKE 'White' AND `marital.status` <> 'Nevermarried') GROUP BY relationship,education,race,occupation,income,sex, `marital.status`, `native.country`,workclass

Resulted in 2670 records

Normalized Euclidean distance for (`hours.per.week`): 24.86

Hellinger Distance: 0.203

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# Real

	native.country	sex	race	relationship	workclass	AVG(capital)	COUNT(*)
44	?	Female	White	Wife	State-gov	7688.000000	1.000000
1164	United-States	Male	Other	Husband	Local-gov	-943.500000	2.000000
932	Scotland	Male	White	Husband	Self-emp-inc	nan	nan
381	Hungary	Male	White	Wife	Private	nan	nan
1218	Vietnam	Male	White	Own-child	Private	nan	nan

	native.country	sex	race	relationship	workclass	AVG(capital)	COUNT(*)
44	?	Female	White	Wife	State-gov	34.522002	4
1164	United-States	Male	Other	Husband	Local-gov	77.434212	1
932	Scotland	Male	White	Husband	Self-emp-inc	200.559628	4
381	Hungary	Male	White	Wife	Private	-39.870357	1
1218	Vietnam	Male	White	Own-child	Private	103.008154	1

#### SQL for Real:

SELECT `native.country`,sex,race,relationship,workclass,AVG(capital), COUNT(\*) FROM C1 WHERE (fnlwgt BETWEEN 20956 AND 114032) OR (race IN ('Black', 'Other', 'Asian-Pac-Islander', 'Amer-Indian-Eskimo', 'White') AND `marital.status` = 'Married-civ-spouse') AND (occupation = 'Sales' AND workclass <> 'Private') OR (education IN ('5th-6th', 'Prof-school', '10th', '1st-4th', 'HS-grad', 'Preschool') OR `hours.per.week` >= 56) GROUP BY `native.country`,sex,race,relationship,workclass

Resulted in 1068 records

# SQL for Synthetic:

SELECT 'native.country', sex,race,relationship,workclass,AVG(capital), COUNT(\*) FROM C1\_syn\_06 WHERE (fnlwgt BETWEEN 20956 AND 114032) OR (race IN ('Black', 'Other', 'Asian-Pac-Islander', 'Amer-Indian-Eskimo', 'White') AND `marital.status` = 'Married-civ-spouse') AND (occupation = 'Sales' AND workclass <> 'Private') OR (education IN ('5th-6th', 'Prof-school', '10th', '1st-4th', 'HS-grad', 'Preschool') OR `hours.per.week` >= 56) GROUP BY `native.country`,sex,race,relationship,workclass

Resulted in 1237 records

Normalized Euclidean distance for (capital): 22.09

Hellinger Distance: 0.379

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#### Real

	relationship	sex	occupation	native.country	marital.status	income	workclass	race	education M	IN(`hours.per.week`)	COUNT(*)
14556	Unmarried	Female	Sales	Japan	Never-married	<=50K	Private	White	HS-grad	nan	nan
3274	Husband	Male	Sales	Hungary	Married-civ-spouse	>50K	Private	White	HS-grad	nan	nan
12719	Own-child	Male	Transport-moving	Puerto-Rico	Never-married	<=50K	State-gov	White	HS-grad	nan	nan
2678	Husband	Male	Prof-specialty	Peru	Married-civ-spouse	<=50K	Federal-gov	White	Bachelors	nan	nan
2427	Husband	Male	Other-service	United-States	Married-civ-spouse	<=50K	Self-emp-inc	White	HS-grad	30.000000	4.000000

### Synthetic

	relationship	sex	occupation	native.country	marital.status	income	workclass	race	education MIN(`	hours.per.week`)	COUNT(*)
14556	Unmarried	Female	Sales	Japan	Never-married	<=50K	Private	White	HS-grad	40.070797	1
3274	Husband	Male	Sales	Hungary	Married-civ-spouse	>50K	Private	White	HS-grad	40.331280	3
12719	Own-child	Male	Transport-moving	Puerto-Rico	Never-married	<=50K	State-gov	White	HS-grad	40.029514	1
2678	Husband	Male	Prof-specialty	Peru	Married-civ-spouse	<=50K	Federal-gov	White	Bachelors	39.998705	1
2427	Husband	Male	Other-service	United-States	Married-civ-spouse	<=50K	Self-emp-inc	White	HS-grad	39.003745	4

#### SOL for Real

SELECT relationship,sex,occupation, `native.country` , `marital.status` ,income,workclass,race,education,MIN(` hours.per.week` ), COUNT(\*) FROM C1 WHERE (income <> '>50K' OR age BETWEEN 35 AND 29) OR (fnlwgt <= 165695 OR `native.country` <> 'United-States') GROUP BY relationship,sex,occupation, `native.country` , `marital.status` ,income,workclass,race,education

Resulted in 11964 records

# SQL for Synthetic:

SELECT relationship,sex,occupation, `native.country`, `marital.status`,income,workclass,race,education,MIN(`hours.per.week`), COUNT(\*) FROM C1\_syn\_06 WHERE (income <> '>50K' OR age BETWEEN 35 AND 29) OR (fnlwgt <= 165695 OR `native.country` <> 'United-States') GROUP BY relationship,sex,occupation, `native.country`, `marital.status`,income,workclass,race,education

Resulted in 16719 records

Normalized Euclidean distance for (`hours.per.week`): 62.51

Hellinger Distance: 0.263

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# Real

# education SUM(age) COUNT(\*)

3	1st-4th	11468	246
6	9th	30804	754
2	12th	21179	657
8	Assoc-voc	78895	2042
1	11th	58023	1808

# Synthetic

	education	SUM(age)	COUNT(*)
3	1st-4th	7495.000000	154.000000
6	9th	30820.000000	737.000000
2	12th	20073.000000	625.000000
8	Assoc-voc	73863.000000	1935.000000
1	11th	55332.000000	1692.000000

# SQL for Real:

SELECT education, SUM(age), COUNT(\*) FROM C1 WHERE (income = '<=50K') OR (occupation <> 'Farming-fishing' OR `marital.status` = 'Divorced') OR (fnlwgt >= 249392 OR relationship LIKE 'Husband') AND (race <> 'White' AND `hours.per.week` BETWEEN 40 AND 40) AND (`native.country` IN ('Holand-Netherlands', 'Thailand', 'South', 'Columbia', 'Scotland', 'Hungary', 'Canada', 'Germany', 'El-Salvador', 'Cuba', 'Trinadad&Tobago', 'Portugal', 'Greece', 'Cambodia', 'Vietnam', 'Puerto-Rico', 'India', 'Taiwan', 'Philippines', 'Peru', 'Mexico', 'Japan', 'Guatemala', 'Jamaica', 'Nicaragua', 'Haiti', '?') AND age BETWEEN 55 AND 18) GROUP BY education

Resulted in 16 records

# SQL for Synthetic:

Select Symmetric Select Gucation, SUM(age), COUNT(\*) FROM C1\_syn\_06 WHERE (income = '<=50K') OR (occupation <> 'Farming-fishing' OR `marital.status` = 'Divorced') OR (fnlwgt >= 249392 OR relationship LIKE 'Husband') AND (race <> 'White' AND `hours.per.week' BETWEEN 40 AND 40) AND (`native.country' IN ('Holand-Netherlands', 'Thailand', 'South', 'Columbia', 'Scotland', 'Hungary', 'Canada', 'Germany', 'El-Salvador', 'Cuba', 'Trinadad&Tobago', 'Portugal', 'Greece', 'Cambodia', 'Vietnam', 'Puerto-Rico', 'India', 'Taiwan', 'Philippines', 'Peru', 'Mexico', 'Japan', 'Guatemala', 'Jamaica', 'Nicaragua', 'Haiti', '?') AND age BETWEEN 55 AND 18) GROUP BY education

Resulted in 16 records

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#### Real

	relationshi	ip workclass	sex	marital.status	SUM(fnlwgt)	COUNT(*)
7	7 Own-child	Self-emp-not-inc	Male	Married-civ-spouse	nan	nan
1	1 Husband	Local-gov	Male	Married-civ-spouse	4046346.000000	15.000000
3	3 Husband	Self-emp-inc	Male	Married-civ-spouse	nan	nan
4	4 Husband	Self-emp-not-inc	Male	Married-civ-spouse	4318141.000000	20.000000
•	6 Own-child	Private	Male	Married-civ-spouse	467540.000000	3.000000

# Synthetic

	relationship	workclass	sex	marital.status	SUM(fnlwgt)	COUNT(*)
7	Own-child	Self-emp-not-inc	Male	Married-civ-spouse	174533.395671	1
1	Husband	Local-gov	Male	Married-civ-spouse	2281328.676901	13
3	Husband	Self-emp-inc	Male	Married-civ-spouse	517915.415016	3
4	Husband	Self-emp-not-inc	Male	Married-civ-spouse	6343638.060560	31
6	Own-child	Private	Male	Married-civ-spouse	177290.046958	1

#### SQL for Real:

SELECT relationship,workclass,sex,`marital.status`,SUM(fnlwgt), COUNT(\*) FROM C1 WHERE (occupation = 'Craft-repair') AND (race <> 'White' OR age = 55) AND (relationship IN ('Wife', 'Unmarried', 'Not-in-family', 'Husband', 'Own-child') AND sex <> 'Female') AND ('marital.status` LIKE 'Married-civ-spouse' AND `hours.per.week` < 42) GROUP BY relationship,workclass,sex,`marital.status`

Resulted in 7 records

### SQL for Synthetic:

SELECT relationship,workclass,sex,`marital.status`,SUM(fnlwgt), COUNT(\*) FROM C1\_syn\_06 WHERE (occupation = 'Craft-repair') AND (race <> 'White' OR age = 55) AND (relationship IN ('Wife', 'Unmarried', 'Not-in-family', 'Husband', 'Own-child') AND sex <> 'Female') AND (`marital.status` LIKE 'Married-civ-spouse' AND `hours.per.week` < 42) GROUP BY relationship,workclass,sex,`marital.status`

Resulted in 8 records

Normalized Euclidean distance for (fnlwgt): 2.45

Hellinger Distance: 0.067

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#### Real

	income	education	workclass	race	MAX(fnlwgt)	COUNT(*)
40	<=50K	Assoc-voc	Self-emp-not-inc	Amer-Indian-Eskimo	108506	1
42	<=50K	Bachelors	?	Other	123983	1
38	<=50K	Assoc-voc	Private	Black	257017	3
2	<=50K	10th	Private	Amer-Indian-Eskimo	214134	3
22	<=50K	5th-6th	Private	Other	82061	1

# Synthetic

	income	education	workclass	race	MAX(fnlwgt)	COUNT(*)
40	<=50K	Assoc-voc	Self-emp-not-inc	Amer-Indian-Eskimo	nan	nan
42	<=50K	Bachelors	?	Other	nan	nan
38	<=50K	Assoc-voc	Private	Black	194787.835228	1.000000
2	<=50K	10th	Private	Amer-Indian-Eskimo	202213.887474	2.000000
22	<=50K	5th-6th	Private	Other	nan	nan

# SQL for Real:

SELECT income,education,workclass,race,MAX(fnlwgt), COUNT(\*) FROM C1 WHERE (sex LIKE 'Male' AND education <> 'Some-college') AND (race <> 'White' AND age <= 23) GROUP BY income,education,workclass,race

Resulted in 64 records

# SQL for Synthetic:

SELECT income,education,workclass,race,MAX(fnlwgt), COUNT(\*) FROM C1\_syn\_06 WHERE (sex LIKE 'Male' AND education <> 'Some-college') AND (race <> 'White' AND age <= 23) GROUP BY income,education,workclass,race

Resulted in 56 records

Normalized Euclidean distance for (fnlwgt): 6.24

Hellinger Distance: 0.146

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Real

# relationship SUM(fnlwgt) COUNT(\*)

Synthetic

# $relationship\ SUM(fnlwgt)\ COUNT(*)$

# SQL for Real:

SELECT relationship, SUM(fnlwgt), COUNT(\*) FROM C1 WHERE (sex = 'Male' AND race IN ('Other', 'Asian-Pac-Islander', 'White', 'Amer-Indian-Eskimo')) AND (relationship = 'Own-child' AND age BETWEEN 36 AND 34) GROUP BY relationship

Resulted in 0 records

# SQL for Synthetic:

SELECT relationship, SUM(fnlwgt), COUNT(\*) FROM C1\_syn\_06 WHERE (sex = 'Male' AND race IN ('Other', 'Asian-Pac-Islander', 'White', 'Amer-Indian-Eskimo')) AND (relationship = 'Own-child' AND age BETWEEN 36 AND 34) GROUP BY relationship

Resulted in 0 records

Normalized Euclidean distance for (fnlwgt): nan

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Real

# income sex MAX(fnlwgt) COUNT(\*)

**0** <=50K Male 206008

Synthetic

### income sex MAX(fnlwgt) COUNT(\*)

0 <=50K Male nan nan

# SQL for Real:

SELECT income,sex,MAX(fnlwgt), COUNT(\*) FROM C1 WHERE (`hours.per.week` = 40 AND relationship LIKE 'Unmarried') AND (age = 18 AND workclass = 'Private') AND (education = 'Some-college' AND race IN ('Other', 'Amer-Indian-Eskimo', 'Black', 'White', 'Asian-Pac-Islander')) GROUP BY income,sex

Resulted in 1 records

# SQL for Synthetic:

SELECT income,sex,MAX(fnlwgt), COUNT(\*) FROM C1\_syn\_06 WHERE (`hours.per.week` = 40 AND relationship LIKE 'Unmarried') AND (age = 18 AND workclass = 'Private') AND (education = 'Some-college' AND race IN ('Other', 'Amer-Indian-Eskimo', 'Black', 'White', 'Asian-Pac-Islander')) GROUP BY income,sex

Resulted in 0 records

Normalized Euclidean distance for (fnlwgt): nan

Hellinger Distance: nan

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#### Real

	education	sex	AVG(fnlwgt)	COUNT(*)
5	12th	Male	204798.275785	446
16	Assoc-voc	Female	183048.084469	734
24	Masters	Female	175166.269822	845
19	Bachelors	Male	191192.134643	5548
29	Prof-school	Male	189146.198006	702

#### Synthetic

	education	sex	AVG(fnlwgt)	COUNT(*)
5	12th	Male	185693.362432	423.000000
16	Assoc-voc	Female	179631.047107	738.000000
24	Masters	Female	179204.437299	954.000000
19	Bachelors	Male	180664.782286	5396.000000
29	Prof-school	Male	172999.442744	695.000000

### SQL for Real:

SELECT education,sex,AVG(fnlwgt), COUNT(\*) FROM C1 WHERE (race = 'White') OR (age > 23 AND relationship = 'Wife') AND (workclass <> 'Private' AND 'native.country` IN ('Puerto-Rico', 'Iran', 'Ireland', 'China', 'Peru', 'Philippines', 'India', 'Nicaragua', 'Dominican-Republic', 'Honduras', 'England', 'United-States', 'Taiwan', 'Thailand', 'Vietnam', 'South', 'Poland', 'Yugoslavia', 'Mexico', 'France', 'Hungary', 'Portugal', 'Outlying-US(Guam-USVI-etc)', 'Trinadad&Tobago', 'Canada', 'Scotland', 'Italy', 'Cambodia', 'El-Salvador', 'Haiti', 'Cuba', 'Germany', 'Greece')) AND ('hours.per.week` = 50 AND fnlwgt BETWEEN 98076 AND 134808) AND (income LIKE '<=50K' AND education = 'Some-college') OR ('marital.status` = 'Never-married' OR sex IN ('Male', 'Female')) GROUP BY education,sex

Resulted in 32 records

# SQL for Synthetic:

SELECT education,sex,AVG(fnlwgt), COUNT(\*) FROM C1\_syn\_06 WHERE (race = 'White') OR (age > 23 AND relationship = 'Wife') AND (workclass <> 'Private' AND 'native.country' IN ('Puerto-Rico', 'Iran', 'Ireland', 'China', 'Peru', 'Philippines', 'India', 'Nicaragua', 'Dominican-Republic', 'Honduras', 'England', 'United-States', 'Taiwan', 'Thailand', 'Vietnam', 'South', 'Poland', 'Yugoslavia', 'Mexico', 'France', 'Hungary', 'Portugal', 'Outlying-US(Guam-USVI-etc)', 'Trinadad&Tobago', 'Canada', 'Scotland', 'Italy', 'Cambodia', 'El-Salvador', 'Haiti', 'Cuba', 'Germany', 'Greece')) AND ('hours.per.week' = 50 AND fnlwgt BETWEEN 98076 AND 134808) AND (income LIKE '<=50K' AND education = 'Some-college') OR ('marital.status' = 'Never-married' OR sex IN ('Male', 'Female')) GROUP BY education,sex

Resulted in 32 records

Normalized Euclidean distance for (fnlwgt): 5.66

Hellinger Distance: 0.031

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# Real

	relationship	education	sex	income SUM(	`hours.per.week`	) COUNT(*)
63	Wife	10th	Female	<=50K	255	7
84	Wife	Some-college	Female	>50K	310	11
19	Not-in-family	Some-college	Female	<=50K	2282	83
8	Not-in-family	Assoc-acdm	Female	>50K	40	1
69	Wife	9th	Female	<=50K	147	4

# Synthetic

			_	ymmono		
	relationship	education	sex	income	SUM(`hours.per.week`)	COUNT(*)
<b>6</b> 3	<b>W</b> ife	10th	Female	<=50K	239.931979	6.000000
84	l Wife	Some-college	Female	>50K	39.058910	1.000000
19	Not-in-family	Some-college	Female	<=50K	3449.134586	87.000000
8	Not-in-family	Assoc-acdm	Female	>50K	nan	nan
69	) Wife	9th	Female	$\leq =50K$	200.169854	5.000000

# SQL for Real:

SELECT relationship,education,sex,income,SUM(`hours.per.week`), COUNT(\*) FROM C1 WHERE (occupation = '?' AND sex <> 'Male') GROUP BY relationship,education,sex,income

Resulted in 85 records

# SQL for Synthetic:

SELECT relationship,education,sex,income,SUM(`hours.per.week`), COUNT(\*) FROM C1\_syn\_06 WHERE (occupation = '?' AND sex <> 'Male') GROUP BY relationship,education,sex,income

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	education	marital.status	race	income	relationship	workclass	native.country	occupation	sex	MAX(fnlwgt)	COUNT(*)
1975	Bachelors	Married-civ-spouse	White	<=50K	Husband	Private	Ecuador	Prof-specialty	Male	nan	nan
580	9th	Married-civ-spouse	White	>50K	Wife	Local-gov	Puerto-Rico	Other-service	Female	nan	nan
5012	Masters	Married-civ-spouse	White	>50K	Husband	Private	Scotland	Prof-specialty	Male	nan	nan
1388	Bachelors	Divorced	White	<=50K	Not-in-family	Self-emp-not-inc	Puerto-Rico	Craft-repair	Male	nan	nan
3959	HS-grad	Divorced	White	>50K	Unmarried	Private	Japan	Exec-managerial	Male	nan	nan

### Synthetic

	education	marital.status	race	income	relationship	workclass	native.country	occupation	sex	MAX(fnlwgt)	COUNT(*)
1975	Bachelors	Married-civ-spouse	White	<=50K	Husband	Private	Ecuador	Prof-specialty	Male	182895.681429	2
580	9th	Married-civ-spouse	White	>50K	Wife	Local-gov	Puerto-Rico	Other-service	Female	169156.838262	1
5012	Masters	Married-civ-spouse	White	>50K	Husband	Private	Scotland	Prof-specialty	Male	180775.197816	1
1388	Bachelors	Divorced	White	<=50K	Not-in-family	Self-emp-not-inc	Puerto-Rico	Craft-repair	Male	170458.898725	3
3959	HS-grad	Divorced	White	>50K	Unmarried	Private	Japan	Exec-managerial	Male	178621.793945	1

# SQL for Real:

SELECT education, 'marital.status', race, income, relationship, workclass, 'native.country', occupation, sex, MAX(fnlwgt), COUNT(\*) FROM C1 WHERE (income <> '<=50K') OR (education = 'Bachelors' OR relationship LIKE 'Own-child') GROUP BY education, 'marital.status', race, income, relationship, workclass, 'native.country', occupation, sex

Resulted in 5402 records

### SOL for Synthetic:

SELECT education, 'marital.status', race, income, relationship, workclass, 'native.country', occupation, sex, MAX(fnlwgt), COUNT(\*) FROM C1\_syn\_06 WHERE (income <> '<=50K') OR (education = 'Bachelors' OR relationship LIKE 'Own-child') GROUP BY education, 'marital.status', race, income, relationship, workclass, 'native.country', occupation, sex

Resulted in 6215 records

Normalized Euclidean distance for (fnlwgt): 40.27

Hellinger Distance: 0.245

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#### Real

	native.country	income	relationship	race	SUM(`hours.per.week`)	COUNT(*)
510	Puerto-Rico	<=50K	Husband	Black	145.000000	4.000000
190	Guatemala	<=50K	Husband	Black	nan	nan
<b>594</b>	Taiwan	<=50K	Wife	White	nan	nan
229	Holand-Netherlands	<=50K	Own-child	White	nan	nan
157	El-Salvador	>50K	Wife	White	40.000000	1.000000

# Synthetic

	native.country	income	relationship	race	SUM(`hours.per.week`)	COUNT(*)
510	Puerto-Rico	<=50K	Husband	Black	7603.683892	190
190	Guatemala	<=50K	Husband	Black	79.927204	2
<b>594</b>	Taiwan	<=50K	Wife	White	279.816536	7
<b>229</b> H	Ioland-Netherlands	<=50K	Own-child	White	2777.464021	70
157	El-Salvador	>50K	Wife	White	40.056577	1

# SQL for Real:

SELECT 'native.country', income, relationship, race, SUM('hours.per.week'), COUNT(\*) FROM C1 WHERE (age <= 56) OR ('hours.per.week' = 30 AND 'native.country' LIKE 'United-States') OR (relationship = 'Own-child' OR sex IN ('Male', 'Female')) AND ('marital.status' <> 'Separated' AND income IN ('>50K', '<=50K')) OR (workclass LIKE 'Private' OR occupation <> 'Prof-specialty') GROUP BY 'native.country', income, relationship, race

Resulted in 635 records

# SQL for Synthetic:

SELECT `native.country`,income,relationship,race,SUM(`hours.per.week`), COUNT(\*) FROM C1\_syn\_06 WHERE (age <= 56) OR (`hours.per.week` = 30 AND `native.country` LIKE 'United-States') OR (relationship = 'Own-child' OR sex IN ('Male', 'Female')) AND (`marital.status` <> 'Separated' AND income IN ('>50K', '<=50K')) OR (workclass LIKE 'Private' OR occupation <> 'Prof-specialty') GROUP BY `native.country`,income,relationship,race

Resulted in 697 records

Normalized Euclidean distance for ('hours.per.week'): 19.31

Hellinger Distance: 0.412

# Real

	marital.status	sex	relationship	education	MAX(`hours.per.week`)	COUNT(*)
489	Separated	Male	Not-in-family	5th-6th	50	8
346	Never-married	Female	Own-child	Assoc-acdm	80	84
369	Never-married	Female	Unmarried	Some-college	99	204
392	Never-married	Male	Other-relative	9th	60	23
531	Separated	Male	Unmarried	HS-grad	80	45

	marital.status	sex	relationship	education	MAX(`hours.per.week`)	COUNT(*)
489	Separated	Male	Not-in-family	5th-6th	40.028519	5.000000
346	Never-married	Female	Own-child	Assoc-acdm	40.048147	66.000000
369	Never-married	Female	Unmarried	Some-college	40.101259	83.000000
392	Never-married	Male	Other-relative	9th	40.029833	7.000000
531	Separated	Male	Unmarried	HS-grad	40.058127	53.000000

SELECT `marital.status`,sex,relationship,education,MAX(`hours.per.week`), COUNT(\*) FROM C1 WHERE (education LIKE 'Some-college') AND (race <> 'White' AND sex IN ('Male', 'Female')) AND (('hours.per.week' BETWEEN 40 AND 46) AND workclass LIKE 'Self-emp-not-inc') OR (income = '<=50K' OR fillwgt <> 99065) AND ((age BETWEEN 62 AND 32) AND relationship = 'Own-child') OR ('marital.status` IN ('Separated', 'Widowed') OR capital <= 0) GROUP BY `marital.status`, sex, relationship, education

Resulted in 624 records

# SQL for Synthetic:

SELECT 'marital.status', sex, relationship, education, MAX('hours.per.week'), COUNT(\*) FROM C1 syn 06 WHERE (education LIKE 'Some-college') AND (race <> 'White' AND sex IN ('Male', 'Female')) AND (('hours.per.week' BETWEEN 40 AND 46) AND workclass LIKE 'Self-emp-not-inc') OR (income = '<=50K' OR fnlwgt <> 99065) AND ((age BETWEEN 62 AND 32) AND relationship = 'Own-child') OR (`marital.status` IN ('Separated', 'Widowed') OR capital <= 0) GROUP BY `marital.status`,sex,relationship,education

Resulted in 596 records

Normalized Euclidean distance for ('hours.per.week'): 22.29

Hellinger Distance: 0.094

#### Real

	occupation	relationship	SUM(capital)	COUNT(*)
82	Transport-moving	Unmarried	31016.000000	140.000000
<b>52</b>	Priv-house-serv	Other-relative	0.000000	3.000000
<b>29</b>	Farming-fishing	Not-in-family	144818.000000	277.000000
<b>49</b>	Other-service	Wife	0.000000	1.000000
47	Other-service	Own-child	44426.000000	1305.000000

# Synthetic

	occupation	relationship	SUM(capital)	COUNT(*)
82	Transport-moving	Unmarried	1530.608179	132
<b>52</b>	Priv-house-serv	Other-relative	443.862186	6
29	Farming-fishing	Not-in-family	-1020.493997	223
<b>49</b>	Other-service	Wife	-27.598692	1
47	Other-service	Own-child	-403.568725	1384

### SOL for Real:

SELECT occupation, relationship, SUM(capital), COUNT(\*) FROM C1 WHERE (relationship IN ('Not-in-family', 'Husband', 'Own-child', 'Unmarried')) OR (workclass LIKE 'Private' OR education IN ('7th-8th', 'Preschool', '12th')) AND (capital <> 0 AND fnlwgt BETWEEN 229225 AND 212588) OR (occupation IN ('Armed-Forces', 'Farming-fishing') OR `hours.per.week` < 40) AND (income IN ('>50K', '<=50K') AND race LIKE 'White') AND (`marital.status` <> 'Married-civ-spouse' AND age > 26) GROUP BY occupation, relationship

Resulted in 76 records

# SQL for Synthetic:

SELECT occupation, relationship, SUM(capital), COUNT(\*) FROM C1\_syn\_06 WHERE (relationship IN ('Not-in-family', 'Husband', 'Own-child', 'Unmarried')) OR (workclass LIKE 'Private' OR education IN ('7th-8th', 'Preschool', '12th')) AND (capital <> 0 AND fnlwgt BETWEEN 229225 AND 212588) OR (occupation IN ('Armed-Forces', 'Farmingfishing') OR `hours.per.week` < 40) AND (income IN ('>50K', '<=50K') AND race LIKE 'White') AND (`marital.status` <> 'Married-civ-spouse' AND age > 26) GROUP BY occupation,relationship

Resulted in 83 records

Normalized Euclidean distance for (capital): 8.72

Hellinger Distance: 0.038

# Real

	race	occupation	education	relationship	sex	MAX(fnlwgt)	COUNT(*)
2360	White	Priv-house-serv	9th	Own-child	Female	nan	nan
1990	White	Farming-fishing	Assoc-voc	Unmarried	Male	nan	nan
2623	White	Sales	Assoc-acdm	Husband	Male	289349.000000	2.000000
706	Black	Exec-managerial	Assoc-acdm	Not-in-family	Female	190591.000000	1.000000
226	Asian-Pac-Islander	Craft-repair	Doctorate	Husband	Male	nan	nan

# Synthetic

	race	occupation	education	relationship	sex	MAX(fnlwgt)	COUNT(*)
2360	White	Priv-house-serv	9th	Own-child	Female	196332.055962	4
1990	White	Farming-fishing	Assoc-voc	Unmarried	Male	182948.797109	5
2623	White	Sales	Assoc-acdm	Husband	Male	196827.159459	78
706	Black	Exec-managerial	Assoc-acdm	Not-in-family	Female	189281.752204	1
226	Asian-Pac-Islander	Craft-repair	Doctorate	Husband	Male	167902.818436	1

# SQL for Real:

SELECT race, occupation, education, relationship, sex, MAX(fnlwgt), COUNT(\*) FROM C1 WHERE (capital <> 0) AND (fnlwgt < 99199 OR occupation <> 'Machine-op-inspct') AND (relationship IN ('Unmarried', 'Other-relative', 'Wife', 'Not-in-family', 'Own-child', 'Husband') AND income = '<=50K') OR (age > 35 OR `marital.status` IN ('Married-AF-spouse', 'Separated', 'Divorced')) AND (`native.country` <> 'United-States' AND education IN ('Assoc-acdm', 'Doctorate', '1st-4th', '12th', '11th', 'Some-college', 'Assoc-voc', 'Masters', 'Prof-school', '10th', 'Preschool', '15th-6th')) GROUP BY race, occupation, education, relationship, sex

Resulted in 1303 records

# SOL for Synthetic:

SELECT race, occupation, education, relationship, sex, MAX(fnlwgt), COUNT(\*) FROM C1 syn 06 WHERE (capital <> 0) AND (fnlwgt < 99199 OR occupation <> 'Machine-opinspct') AND (relationship IN ('Unmarried', 'Other-relative', 'Wife', 'Not-in-family', 'Own-child', 'Husband') AND income = '<=50K') OR (age > 35 OR 'marital.status' IN ('Married-AF-spouse', 'Separated', 'Divorced')) AND ('native.country' <> 'United-States' AND education IN ('Assoc-acdm', 'Doctorate', '1st-4th', '12th', '11th', 'Some-college', 'Assoc-voc', 'Masters', 'Prof-school', '10th', 'Preschool', 'HS-grad', '5th-6th')) GROUP BY race,occupation,education,relationship,sex

Resulted in 2858 records

Normalized Euclidean distance for (fnlwgt): 32.03

Hellinger Distance: 0.277

#### Real

relationship	marital.status	${\bf education}$	MAX(age)	COUNT(*)
32 Not-in-family	Married-spouse-absent	7th-8th	77	10
2 Not-in-family	Divorced	12th	77	36
18 Not-in-family	Married-civ-spouse	1st-4th	33	1
66 Not-in-family	Separated	Assoc-acdm	64	22
12 Not-in-family	Divorced	Masters	90	229

### Synthetic

	relationship	marital.status	education	MAX(age)	COUNT(*)
32	2 Not-in-family	Married-spouse-absent	7th-8th	74.000000	10.000000
2	Not-in-family	Divorced	12th	65.000000	33.000000
18	<b>B</b> Not-in-family	Married-civ-spouse	1st-4th	nan	nan
6	6 Not-in-family	Separated	Assoc-acdm	49.000000	16.000000
13	2 Not-in-family	Divorced	Masters	68.000000	258.000000

### SQL for Real:

SELECT relationship, `marital.status' ,education,MAX(age), COUNT(\*) FROM C1 WHERE (sex IN ('Female', 'Male') AND relationship LIKE 'Not-in-family') GROUP BY relationship, `marital.status' ,education

Resulted in 91 records

# SQL for Synthetic:

SELECT relationship, marital.status ,education, MAX(age), COUNT(\*) FROM C1\_syn\_06 WHERE (sex IN ('Female', 'Male') AND relationship LIKE 'Not-in-family') GROUP BY relationship, marital.status, education

Resulted in 91 records

Normalized Euclidean distance for (age): 9.33

Hellinger Distance: 0.053

# Real

	race	native.country	relationship	education	sex	occupation	workclass	income	marital.status	AVG(fnlwgt)	COUNT(*)
9986	White	Puerto-Rico	Not-in-family	Masters	Male	Prof-specialty	Private	<=50K	Divorced	nan	nan
8318	White	Peru	Not-in-family	HS-grad	Female	Exec-managerial	Private	<=50K	Divorced	nan	nan
3071	Black	United-States	Own-child	HS-grad	Male	Other-service	Local-gov	<=50K	Never-married	241022.750000	4.000000
15794	White	United-States	Unmarried	Masters	Female	Prof-specialty	Local-gov	<=50K	Divorced	167440.185185	27.000000
5757	White	Haiti	Own-child	Some-college	Male	Prof-specialty	Private	<=50K	Never-married	nan	nan
						Synthetic		_			
	race	native.country	relationship	education	sex	occupation	workclass	income	marital.status	AVG(fnlwgt)	COUNT(*)

	race	native.country	relationship	education	sex	occupation	workclass	income	marital.status	AVG(fnlwgt)	COUNT(*)
9986	White	Puerto-Rico	Not-in-family	Masters	Male	Prof-specialty	Private	<=50K	Divorced	172931.175301	5
8318	White	Peru	Not-in-family	HS-grad	Female	Exec-managerial	Private	<=50K	Divorced	179202.973396	3
3071	Black	United-States	Own-child	HS-grad	Male	Other-service	Local-gov	<=50K	Never-married	204409.121762	2
15794	White	United-States	Unmarried	Masters	Female	Prof-specialty	Local-gov	<=50K	Divorced	180238.235699	14
5757	White	Haiti	Own-child	Some-college	Male	Prof-specialty	Private	<=50K	Never-married	205827.053049	1

# SQL for Real:

SELECT race, `native.country`, relationship, education, sex, occupation, workclass, income, `marital.status`, AVG(fnlwgt), COUNT(\*) FROM C1 WHERE (occupation <> 'Transportmoving') OR (education = 'Some-college' AND age <= 21) AND (race LIKE 'White' AND `hours.per.week` BETWEEN 12 AND 40) AND (`native.country` = 'United-States' AND capital <= 0) AND (income <> '<=50K' AND relationship LIKE 'Wife') GROUP BY

race, `native.country`, relationship, education, sex, occupation, work class, income, `marital.status`

Resulted in 12048 records

# SQL for Synthetic:

SELECT race, `native.country`, relationship, education, sex, occupation, workclass, income, `marital.status`, AVG(fnlwgt), COUNT(\*) FROM C1\_syn\_06 WHERE (occupation <> 'Transport-moving') OR (education = 'Some-college' AND age <= 21) AND (race LIKE 'White' AND `hours.per.week` BETWEEN 12 AND 40) AND (`native.country` = 'United-States' AND capital <= 0) AND (income <> '<=50K' AND relationship LIKE 'Wife') GROUP BY

race, `native.country`, relationship, education, sex, occupation, workclass, income, `marital.status`

Resulted in 16375 records

Normalized Euclidean distance for (fnlwgt): 63.13

Hellinger Distance: 0.249

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	relationship	sex	income	workclass	marital.status	occupation	native.country	race	MAX(fnlwgt)	COUNT(*)
689	Wife	Female	>50K	Private	Married-civ-spouse	Exec-managerial	United-States	White 5	585203.000000	18.000000
96	Husband	Male	<=50K	State-gov	Married-civ-spouse	Protective-serv	Hungary	White	nan	nan
429	Own-child	Female	<=50K	Private	Never-married	Exec-managerial	Laos	Black	nan	nan
568	Own-child	Male	<=50K	State-gov	Never-married	Craft-repair	United-States	Black	nan	nan
153	Not-in-family	Female	<=50K	Private	Never-married	Craft-repair	Dominican-Republic	Black	nan	nan

	relationship	sex	income	workclass	marital.status	occupation	native.country	race	MAX(fnlwgt)	COUNT(*)
689	Wife	Female	>50K	Private	Married-civ-spouse	Exec-managerial	United-States	White	190244.956467	4
96	Husband	Male	<=50K	State-gov	Married-civ-spouse	Protective-serv	Hungary	White	183020.374251	1
429	Own-child	Female	<=50K	Private	Never-married	Exec-managerial	Laos	Black	179492.885253	1
568	Own-child	Male	<=50K	State-gov	Never-married	Craft-repair	United-States	Black	187699.640929	1
153	Not-in-family	Female	<=50K	Private	Never-married	Craft-repair	Dominican-Republic	Black	188239.026530	1

#### SQL for Real

SELECT relationship,sex,income,workclass, `marital.status`,occupation, `native.country`,race,MAX(fnlwgt), COUNT(\*) FROM C1 WHERE (occupation IN ('Craft-repair', 'Protective-serv', 'Exec-managerial') AND age < 30) GROUP BY relationship,sex,income,workclass, `marital.status`,occupation, `native.country`,race

Resulted in 512 records

#### SQL for Synthetic

SELECT relationship,sex,income,workclass, `marital.status`,occupation, `native.country`,race,MAX(fnlwgt), COUNT(\*) FROM C1\_syn\_06 WHERE (occupation IN ('Craftrepair', 'Protective-serv', 'Exec-managerial') AND age < 30) GROUP BY relationship,sex,income,workclass, `marital.status`,occupation, `native.country`,race

Resulted in 693 records

Normalized Euclidean distance for (fnlwgt): 13.75

Hellinger Distance: 0.166

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	marital.status	relationship	race	workclass	education MIN(	`hours.per.week`	) COUNT(*)
1481	Never-married	Not-in-family	Other	Local-gov	Bachelors	45	1
1333	Married-spouse-absent	Unmarried	White	Private	Bachelors	20	13
2139	Separated	Not-in-family	White	Private	5th-6th	12	7
351	Divorced	Unmarried	Black	?	11th	10	4
509	Married-civ-spouse	Husband	Amer-Indian-Eskimo	Federal-gov	Bachelors	40	1

#### Synthetic

	marital.status	relationship	race	workclass	education I	MIN(`hours.per.week`)	COUNT(*)
1481	Never-married	Not-in-family	Other	Local-gov	Bachelors	39.990876	2.000000
1333	Married-spouse-absent	Unmarried	White	Private	Bachelors	39.916537	10.000000
2139	Separated	Not-in-family	White	Private	5th-6th	39.924088	6.000000
351	Divorced	Unmarried	Black	?	11th	nan	nan
509	Married-civ-spouse	Husband	Amer-Indian-Eskimo	Federal-gov	Bachelors	39.965063	1.000000

# SQL for Real:

SELECT `marital.status`,relationship,race,workclass,education,MIN(`hours.per.week'), COUNT(\*) FROM C1 WHERE (`native.country` <> 'United-States') OR (education = 'Some-college' AND `marital.status` = 'Never-married') OR (workclass <> 'State-gov' OR income LIKE '<=50K') OR (`hours.per.week` > 40 OR relationship = 'Unmarried') AND (race IN ('White', 'Other', 'Amer-Indian-Eskimo') AND fnlwgt BETWEEN 233571 AND 178319) GROUP BY `marital.status`,relationship,race,workclass,education Resulted in 2653 records

# SQL for Synthetic:

SELECT `marital.status`,relationship,race,workclass,education,MIN(`hours.per.week`), COUNT(\*) FROM C1\_syn\_06 WHERE (`native.country` <> 'United-States') OR (education = 'Some-college' AND `marital.status` = 'Never-married') OR (workclass <> 'State-gov' OR income LIKE '<=50K') OR (`hours.per.week` > 40 OR relationship = 'Unmarried') AND (race IN ('White', 'Other', 'Amer-Indian-Eskimo') AND fnlwgt BETWEEN 233571 AND 178319) GROUP BY `marital.status`, relationship,race, workclass, education

Resulted in 2519 records

Normalized Euclidean distance for ('hours.per.week'): 41.88

Hellinger Distance: 0.097

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# Real

	native.country	income	workclass	relationship	occupation	marital.status	education	race	sex	SUM(fnlwgt)	COUNT(*)
41	United-States	<=50K	Private	Unmarried	Other-service	Separated	HS-grad	Black	Female	313546.000000	1.000000
36	United-States	<=50K	Private	Not-in-family	Sales	Separated	11th	Black	Male	nan	nan
3	Peru	<=50K	Private	Not-in-family	Prof-specialty	Never-married	HS-grad	Black	Female	nan	nan
45	United-States	<=50K	Private	Wife	Other-service	Married-civ-spouse	HS-grad	Black	Female	nan	nan
13	Puerto-Rico	<=50K	Private	Not-in-family	Machine-op-inspct	Divorced	9th	Black	Male	nan	nan

# Synthetic

	native.country	income	workclass	s relationship	occupation	marital.status	education	race	sex	SUM(fnlwgt)	COUNT(*)
41	United-States	<=50K	Private	Unmarried	Other-service	Separated	HS-grad	Black	Female	157632.588051	1
36	United-States	<=50K	Private	Not-in-family	Sales	Separated	11th	Black	Male	173383.007423	1
3	Peru	<=50K	Private	Not-in-family	Prof-specialty	Never-married	HS-grad	Black	Female	178737.780669	1
45	United-States	<=50K	Private	Wife	Other-service	Married-civ-spouse	HS-grad	Black	Female	172623.230190	1
13	Puerto-Rico	<=50K	Private	Not-in-family	Machine-op-inspct	Divorced	9th	Black	Male	170714.697749	1

# SQL for Real:

SELECT `native.country`,income,workclass,relationship,occupation, `marital.status`,education,race,sex,SUM(fnlwgt), COUNT(\*) FROM C1 WHERE ((`hours.per.week` BETWEEN 52 AND 40) AND occupation LIKE 'Craft-repair') AND (`native.country` LIKE 'United-States' AND education = 'Some-college') OR (workclass = 'Private' OR income <> '<=50K') AND (age = 50 AND race = 'Black') GROUP BY `native.country`,income,workclass,relationship,occupation, `marital.status`,education,race,sex

Resulted in 42 records

# SQL for Synthetic

SELECT `native.country`,income,workclass,relationship,occupation, `marital.status`,education,race,sex,SUM(fnlwgt), COUNT(\*) FROM C1\_syn\_06 WHERE ((`hours.per.week` BETWEEN 52 AND 40) AND occupation LIKE 'Craft-repair') AND (`native.country` LIKE 'United-States' AND education = 'Some-college') OR (workclass = 'Private' OR income <> '<=50K') AND (age = 50 AND race = 'Black') GROUP BY `native.country`,income,workclass,relationship,occupation, `marital.status`,education,race,sex

Resulted in 51 records

Normalized Euclidean distance for (fnlwgt): 1.41  $\,$ 

Hellinger Distance: 0.12

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#### Real

	sex	race	native.country	SUM(fnlwgt)	COUNT(*)
178	Male	Black	Philippines	606167.000000	2.000000
35	Female	Black	England	389674.000000	2.000000
65	Female	Other	England	nan	nan
<b>49</b>	Female	Black	Nicaragua	200734.000000	1.000000
56	Female	Black	Taiwan	nan	nan

#### Synthetic

		sex	race	native.country	SUM(fnlwgt)	COUNT(*)
1	178	Male	Black	Philippines	189202.605907	1
	35	Female	Black	England	184498.374745	1
	65	Female	Other	England	181415.486752	1
	49	Female	Black	Nicaragua	2813470.522182	15
	56	Female	Black	Taiwan	725988.763380	4

### SOL for Real:

SELECT sex,race, `native.country`, SUM(fnlwgt), COUNT(\*) FROM C1 WHERE (sex LIKE 'Male' OR occupation <> 'Machine-op-inspct') OR (relationship LIKE 'Unmarried' OR `native.country` LIKE 'United-States') AND (capital >= 0 AND income LIKE '<=50K') AND ((age BETWEEN 33 AND 44) AND fnlwgt = 226311) AND (workclass <> 'Self-emp-not-inc' AND `marital.status` IN ('Widowed', 'Married-AF-spouse', 'Divorced', 'Separated')) GROUP BY sex,race, `native.country`

Resulted in 210 records

# SQL for Synthetic:

SELECT sex,race, `native.country`, SUM(fnlwgt), COUNT(\*) FROM C1\_syn\_06 WHERE (sex LIKE 'Male' OR occupation <> 'Machine-op-inspct') OR (relationship LIKE 'Unmarried' OR `native.country` LIKE 'United-States') AND (capital >= 0 AND income LIKE '<=50K') AND ((age BETWEEN 33 AND 44) AND fnlwgt = 226311) AND (workclass <> 'Self-emp-not-inc' AND `marital.status` IN ('Widowed', 'Married-AF-spouse', 'Divorced', 'Separated')) GROUP BY sex,race, `native.country`

Resulted in 242 records

Normalized Euclidean distance for (fnlwgt): 12.37

Hellinger Distance: 0.398

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	workclass	occupation	sex	native.country	MAX(age)	COUNT(*)
615	Private	Craft-repair	Male	Ireland	32.000000	6.000000
606	Private	Craft-repair	Male	Ecuador	90.000000	8.000000
1101	Private	Tech-support	Male	Thailand	nan	nan
1113	Private	Transport-moving	Female	Puerto-Rico	61.000000	3.000000
1177	Self-emp-inc	Exec-managerial	Male	Guatemala	nan	nan

### Synthetic

	workclass	occupation	sex	native.country	MAX(age)	COUNT(*)
615	Private	Craft-repair	Male	Ireland	31	36
606	Private	Craft-repair	Male	Ecuador	29	21
1101	Private	Tech-support	Male	Thailand	20	2
1113	Private	Transport-moving	Female	Puerto-Rico	65	14
1177	Self-emp-inc	Exec-managerial	Male	Guatemala	35	1

# SQL for Real:

SELECT workclass, occupation, sex, `native.country`, MAX(age), COUNT(\*) FROM C1 WHERE ((capital BETWEEN 0 AND 0) OR fnlwgt >= 126754) OR (`hours.per.week` <= 40 OR sex IN ('Female', 'Male')) GROUP BY workclass, occupation, sex, `native.country`

Resulted in 1407 records

# SQL for Synthetic:

SELECT workclass,occupation,sex,`native.country`,MAX(age), COUNT(\*) FROM C1\_syn\_06 WHERE ((capital BETWEEN 0 AND 0) OR fnlwgt >= 126754) OR (`hours.per.week` <= 40 OR sex IN ('Female', 'Male')) GROUP BY workclass,occupation,sex,`native.country`

Resulted in 1636 records

Normalized Euclidean distance for (age): 27.93

Hellinger Distance: 0.364

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# Real

	workclass	MIN(age)	COUNT(*)
4	Self-emp-not-inc	19	4
2	Private	17	301
3	Self-emp-inc	22	3
1	Local-gov	17	92
0	Federal-gov	17	105

# Synthetic

	workclass	MIN(age)	COUNT(*)
4	Self-emp-not-inc	29.000000	3.000000
2	Private	17.000000	219.000000
3	Self-emp-inc	41.000000	4.000000
1	Local-gov	19.000000	66.000000
0	Federal-gov	18.000000	58.000000

# SQL for Rea

SELECT workclass, MIN(age), COUNT(\*) FROM C1 WHERE (occupation LIKE 'Adm-clerical') AND (workclass <> 'Private' OR education IN ('11th', 'Some-college', '10th', 'Assoc-acdm', '12th')) AND (relationship <> 'Husband' AND race <> 'White') GROUP BY workclass

Resulted in 6 records

# SQL for Synthetic:

SELECT workclass, MIN(age), COUNT(\*) FROM C1\_syn\_06 WHERE (occupation LIKE 'Adm-clerical') AND (workclass <> 'Private' OR education IN ('11th', 'Some-college', '10th', 'Assoc-acdm', '12th')) AND (relationship <> 'Husband' AND race <> 'White') GROUP BY workclass

Resulted in 6 records

Normalized Euclidean distance for (age): 2.45

Hellinger Distance: 0.046

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#### Real

	workclass	native.country	race	relationship	occupation	income	AVG(fnlwgt)	COUNT(*)
2602	Private	Vietnam	White	Own-child	Prof-specialty	<=50K	nan	nan
18	?	Columbia	White	Own-child	?	<=50K	nan	nan
2811	Self-emp-inc	United-States	White	Husband	Handlers-cleaners	<=50K	nan	nan
503	Local-gov	Hungary	White	Husband	Exec-managerial	<=50K	nan	nan
1457	Private	Hungary	White	Own-child	Prof-specialty	<=50K	nan	nan

# Synthetic

	workclass	native.country	race	relationship	occupation	income	AVG(fnlwgt)	COUNT(*)
2602	Private	Vietnam	White	Own-child	Prof-specialty	<=50K	188560.934934	2
18	?	Columbia	White	Own-child	?	<=50K	177361.522217	2
2811	Self-emp-inc	United-States	White	Husband	Handlers-cleaners	<=50K	154673.715025	2
503	Local-gov	Hungary	White	Husband	Exec-managerial	<=50K	180468.654787	1
1457	Private	Hungary	White	Own-child	Prof-specialty	<=50K	181971.521270	2

### SQL for Real:

SELECT workclass, 'native.country', race, relationship, occupation, income, AVG(fnlwgt), COUNT(\*) FROM C1 WHERE (relationship = 'Husband' OR race LIKE 'White') AND (sex IN ('Female', 'Male') AND education IN ('Assoc-acdm', 'Some-college', '12th', '10th', '5th-6th', 'Assoc-voc', 'Bachelors', 'Prof-school', '9th', '1st-4th', '11th', 'Doctorate')) OR (workclass <> 'State-gov' OR occupation <> 'Adm-clerical') AND ('marital.status' IN ('Married-AF-spouse', 'Married-spouse-absent', 'Widowed', 'Never-married') AND age > 37) GROUP BY workclass, 'native.country', race, relationship, occupation, income

Resulted in 2493 records

### SQL for Synthetic:

SELECT workclass, `native.country`,race,relationship,occupation,income,AVG(fnlwgt), COUNT(\*) FROM C1\_syn\_06 WHERE (relationship = 'Husband' OR race LIKE 'White') AND (sex IN ('Female', 'Male') AND education IN ('Assoc-acdm', 'Some-college', '12th', '10th', '5th-6th', 'Assoc-voc', 'Bachelors', 'Prof-school', '9th', '1st-4th', '11th', 'Doctorate')) OR (workclass <> 'State-gov' OR occupation <> 'Adm-clerical') AND (`marital.status` IN ('Married-AF-spouse', 'Married-spouse-absent', 'Widowed', 'Nevermarried') AND age > 37) GROUP BY workclass, `native.country`,race,relationship,occupation,income

Resulted in 3537 records

Normalized Euclidean distance for (fnlwgt): 33.17

Hellinger Distance: 0.314

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 $Hellinger\ Distance\ Summary: \{'mean':\ 0.2198806828617489,\ 'median':\ 0.2203291864871219,\ 'stddev':\ 0.14051246619427304\}\\ Euclidean\ distance\ Summary: \{'mean':\ 24.487519116718367,\ 'median':\ 22.293496809607948,\ 'stddev':\ 18.68428708778959\}\\ In the summary of the su$ 

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