Melis Oktayoglu 64388

CAMM535 – Assignment 2

1. List molecule IDs (molregno), ChEMBL identifiers and USAN years of the parenterally administered molecules whose USAN/INN name applications were made after 1980.

```
SELECT molregno, chembl_id, usan_year
FROM molecule_dictionary
WHERE parenteral = 1 AND usan_year > 1980;
```

Melis Oktayoglu 64388

2. List the preferred names and molecule types of inorganic molecules found in orally administrated products whose patents are expired (as of 2022).

SELECT pref_name, molecule_type
FROM molecule_dictionary, formulations, product_patents
WHERE inorganic_flag = 1 AND oral =1 AND formulations.molregno =
molecule_dictionary.molregno AND formulations.product_id = product_patents.product_id
AND product_patents.patent_expire_date <= 2022;

✔ Gösterilen satır 0 - 6 (toplam 7, Sorgu 0.0095 saniye sürdü.)

SELECT pref_name, molecule_type FROM molecule_dictionary, formulations, product_patents WHERE inorganic_flag=1 AND oral=1 AND formulations.molregno = molecule_dictionary.molregno AND formulations.product_id = product_patents.product_id AND product_patents.patent_expire_date<=2022;

☐ Profil çıkart [Satır içi düzenle] [Düzenle] [SQL'i açıkla] [PHP kodu oluştur] [Yenile]

☐ Tümünü göster | Satır sayısı: 25 ⬍ Satırları süz: Bu tabloda ara

Fazladan seçenekler

pref_name	molecule_type
Preferred name for the molecule	Type of molecule (Small molecule, Protein, Antibod…
SODIUM PHOSPHATE	Small molecule
SODIUM CHLORIDE	Small molecule
SODIUM CHLORIDE	Small molecule
MAGNESIA, [MILK OF]	Small molecule
MAGNESIA, [MILK OF]	Small molecule
POTASSIUM CHLORIDE	Small molecule
POTASSIUM CHLORIDE	Small molecule

3. Find the product ID, trade name, molecule ID and first approval year of the products which include molecules that have first approval years greater than the average of all first approval years in the molecule dictionary table.

SELECT products.product_id, trade_name, molecule_dictionary.molregno, first_approval
FROM products, molecule_dictionary, formulations
WHERE formulations.molregno = molecule_dictionary.molregno AND
formulations.product_id = products.product_id AND first_approval > (SELECT
AVG(first_approval) from molecule_dictionary);

Gösterilen satır 0 - 24 (toplam 7374, Sorgu 0.0288 saniye sürdü.)

```
1 SELECT products.product_id, trade_name, molecule_dictionary.molregno, first_approval
2 FROM products, molecule_dictionary, formulations
3 WHERE formulations.molregno = molecule_dictionary.molregno AND formulations.product_id = products.product_id AND first_approval > (SELECT AVG(first_approval) from
  molecule_dictionary);
```

☑ Dış anahtar denetlemelerini etkinleştir

Git   İptal

☐ Profil çıkart [Satır içi düzenle] [Düzenle] [SQL'i açıkla] [PHP kodu oluştur] [Yenile]

| 1 ⬍ | > | >> | Satır sayısı: | 25 ⬍ | Satırları süz: | Bu tabloda ara |

Fazladan seçenekler

product_id FDA application number for the product	trade_name The trade name for the product	molregno Internal Primary Key for the molecule	first_approval Earliest known approval year for the molecule
PRODUCT_077902_001	CIPROFLOXACIN EXTENDED RELEASE	241	1987
PRODUCT_207986_001	OTIPRIO	241	1987
PRODUCT_019858_001	CIPRO IN SODIUM CHLORIDE 0.9% IN PLASTIC CONTAINER	241	1987
PRODUCT_076992_001	CIPROFLOXACIN	241	1987
PRODUCT_076992_002	CIPROFLOXACIN	241	1987
PRODUCT_076993_001	CIPROFLOXACIN	241	1987
PRODUCT_076484_001	CIPROFLOXACIN	241	1987
PRODUCT_076484_002	CIPROFLOXACIN	241	1987
PRODUCT_076717_001	CIPROFLOXACIN	241	1987
PRODUCT_076717_002	CIPROFLOXACIN	241	1987
PRODUCT_077245_001	CIPROFLOXACIN	241	1987
PRODUCT_077245_002	CIPROFLOXACIN	241	1987
■ Konsol			
PRODUCT_076757_001	CIPROFLOXACIN IN DEXTROSE 5%	241	1987
PRODUCT_077888_001	CIPROFLOXACIN IN DEXTROSE 5% IN PLASTIC CONTAINER	241	1987
PRODUCT_077888_002	CIPROFLOXACIN IN DEXTROSE 5% IN PLASTIC CONTAINER	241	1987
PRODUCT_078114_001	CIPROFLOXACIN IN DEXTROSE 5% IN PLASTIC CONTAINER	241	1987
PRODUCT_078114_002	CIPROFLOXACIN IN DEXTROSE 5% IN PLASTIC CONTAINER	241	1987
PRODUCT_078431_001	CIPROFLOXACIN IN DEXTROSE 5% IN PLASTIC CONTAINER	241	1987
PRODUCT_077138_001	CIPROFLOXACIN IN DEXTROSE 5% IN PLASTIC CONTAINER	241	1987
PRODUCT_077138_002	CIPROFLOXACIN IN DEXTROSE 5% IN PLASTIC CONTAINER	241	1987
PRODUCT_078166_001	CIPROFLOXACIN EXTENDED RELEASE	241	1987
PRODUCT_077701_002	CIPROFLOXACIN EXTENDED RELEASE	241	1987
PRODUCT_077701_001	CIPROFLOXACIN EXTENDED RELEASE	241	1987
PRODUCT_077753_001	CIPROFLOXACIN IN DEXTROSE 5% IN PLASTIC CONTAINER	241	1987
PRODUCT_077753_002	CIPROFLOXACIN IN DEXTROSE 5% IN PLASTIC CONTAINER	241	1987

Melis Oktayoglu 64388

4. List the product IDs, applicant names, trade names, dose strengths and patent expire dates of the products applied by companies having "INC" keyword where the company is also the innovator of the product.

SELECT products.product_id, applicant_full_name, trade_name, strength, patent_expire_date
FROM products, formulations, product_patents
WHERE formulations.product.id = products.product_id AND products.product_id = product_patents.product_id AND applicant_full_name like '%INC%';

Gösterilen satır 0 - 24 (toplam 2261, Sorgu 0.0120 saniye sürdü.)

SELECT products.product_id, applicant_full_name, trade_name, strength, patent_expire_date FROM products, formulations, product_patents WHERE formulations.product_id = products.product_id and products.product_id = product_patents.product_id and applicant_full_name like '%INC%';

Profil çıkart [Satır içi düzenle] [Düzenle] [SQL'i açıkla] [PHP kodu oluştur] [Yenile]

| 1 > >> | Satır sayısı: 25 | Satırları süz: Bu tabloda ara |

Fazladan seçenekler

product_id FDA application number for the product	applicant_full_name Name of the company applying for FDA approval	trade_name The trade name for the product	strength Dose strength	patent_expire_date Date the patent expires as submitted by the applic...
PRODUCT_050819_001	BAUSCH HEALTH AMERICAS INC	ACANYA	2.5%	2029
PRODUCT_050819_001	BAUSCH HEALTH AMERICAS INC	ACANYA	2.5%	2029
PRODUCT_201280_001	BOEHRINGER INGELHEIM PHARMACEUTICALS INC	TRADJENTA	5MG	2023
PRODUCT_201281_003	BOEHRINGER INGELHEIM PHARMACEUTICALS INC	JENTADUETO	2.5MG	2023
PRODUCT_201281_003	BOEHRINGER INGELHEIM PHARMACEUTICALS INC	JENTADUETO	2.5MG	2023
PRODUCT_201739_002	KALEO INC	AUVI-Q	EQ 0.15MG/DELIVERY	2024
PRODUCT_205787_001	KALEO INC	EVZIO	0.4MG/0.4ML (0.4MG/0.4ML)	2024
PRODUCT_205787_001	KALEO INC	EVZIO	0.4MG/0.4ML (0.4MG/0.4ML)	2028
PRODUCT_205787_001	KALEO INC	EVZIO	0.4MG/0.4ML (0.4MG/0.4ML)	2029
PRODUCT_204353_001	JANSSEN PHARMACEUTICALS INC	INVOKAMET	50MG	2024
PRODUCT_204353_001	JANSSEN PHARMACEUTICALS INC	INVOKAMET	50MG	2024
PRODUCT_204353_003	JANSSEN PHARMACEUTICALS INC	INVOKAMET	150MG	2029
PRODUCT_204353_003	JANSSEN PHARMACEUTICALS INC	INVOKAMET	150MG	2029
PRODUCT_204042_002	JANSSEN PHARMACEUTICALS INC	INVOKANA	300MG	2029
PRODUCT_204031_001	MALLINCKRODT INC	XARTEMIS XR	325MG	2029
PRODUCT_204031_001	MALLINCKRODT INC	XARTEMIS XR	325MG	2029
PRODUCT_204031_001	MALLINCKRODT INC	XARTEMIS XR	325MG	2029
PRODUCT_204629_001	BOEHRINGER INGELHEIM PHARMACEUTICALS INC	JARDIANCE	10MG	2028
PRODUCT_202123_001	GILEAD SCIENCES INC	COMPLERA	200MG	2021
PRODUCT_202123_001	GILEAD SCIENCES INC	COMPLERA	200MG	2021
PRODUCT_202123_001	GILEAD SCIENCES INC	COMPLERA	200MG	2021
PRODUCT_202278_001	TEVA BRANDED PHARMACEUTICAL PRODUCTS R AND D INC	ZECUITY	EQ 6.5MG BASE/4HR	2027
PRODUCT_020908_002	NOVO NORDISK INC	VAGIFEM	10MCG	2022
PRODUCT_021910_001	DIALYSIS SUPPLIES INC	NORMOCARB HF 25	0.21GM/100ML	2023
PRODUCT_021910_001	DIALYSIS SUPPLIES INC	NORMOCARB HF 25	0.21GM/100ML	2023
PRODUCT_021910_001	DIALYSIS SUPPLIES INC	NORMOCARB HF 25	0.21GM/100ML	2023

Melis Oktayoglu 64388

5. List the molecules (molregno), preferred names and withdrawn reasons of molecules where they have been withdrawn due to an "increased risk" but not due to a reason related to dysglycemia.

SELECT. molecule_dictionary.molregno, pref_name, withdrawn_reason
FROM molecule_dictionary
WHERE withdrawn_reason like '%increased_risk%' AND withdrawn_reason not like '%dysglycemia%';

Melis Oktayoglu 64388

6. Count the number of formulations for each molecule and list it with the preferred name of the molecule where USAN stem is not NULL and the first approval date is at most 20 years before 2022.

SELECT pref_name, COUNT(formulations.formulation_id), first_approval
FROM formulations, molecule_dictionary
WHERE molecule_dictionary.molregno = formulations.molregno AND usan_stem is not NULL and (2022 – first_approval) <= 20
GROUP BY formulations.molregno;

pref_name Preferred name for the molecule	COUNT(formulations.formulation_id)	first_approval Earliest known approval year for the molecule
TETRACAINE	2	2005
EMTRICITABINE	30	2003
EZETIMIBE	59	2002
ELVITEGRAVIR	4	2012
ALOGLIPTIN BENZOATE	11	2013
LINAGLIPTIN	12	2011
RALTEGRAVIR POTASSIUM	6	2007
ENFUVIRTIDE	1	2003
ELAGOLIX SODIUM	3	2018
ATAZANAVIR SULFATE	28	2003
OLMESARTAN MEDOXOMIL	163	2002
DARUNAVIR ETHANOLATE	10	2006
SITAGLIPTIN PHOSPHATE	16	2006
IODINE POVACRYLEX	2	2006
NEBIVOLOL HYDROCHLORIDE	33	2007
SAXAGLIPTIN HYDROCHLORIDE	11	2009
DOLUTEGRAVIR SODIUM	7	2013
OMEPRAZOLE MAGNESIUM	10	2003
RILPIVIRINE HYDROCHLORIDE	4	2011
ROSUVASTATIN CALCIUM	120	2003
ERTUGLIFLOZIN	8	2017
COBICISTAT	6	2012
AZILSARTAN KAMEDOXOMIL	4	2011
DAPAGLIFLOZIN PROPYLENE GLYCOL	13	2014
BAZEDOXIFENE ACETATE	1	2009

Melis Oktayoglu 64388

7. List the applicants, product IDs, and trade names of the prescription or over the counter products having molecules whose molecule type are either Oligosaccharide or Small molecule.

SELECT applicant_full_name, products.product_id, trade_name
FROM products, formulations, molecule_dictionary
WHERE products.product_id = formulations.product_id AND formulations.molregno = molecule_dictionary.molregno and (availability_type = 1 OR availability_type = 2) AND (molecule_type like '%Oligosaccharide%' OR molecule_type like '%Small molecule%');

Gösterilen satır 0 - 24 (toplam 19452, Sorgu 0.0018 saniye sürdü.)

```
SELECT applicant_full_name, products.product_id, trade_name FROM products, formulations, molecule_dictionary WHERE products.product_id =
formulations.product_id and formulations.molregno = molecule_dictionary.molregno and (availability_type = 1 OR availability_type = 2) AND
(molecule_type like '%Oligosaccharide%' OR molecule_type like '%Small molecule%');
```

Profil çıkart [Satır içi düzenle] [Düzenle] [SQL'i açıkla] [PHP kodu oluştur] [Yenile]

applicant_full_name Name of the company applying for FDA approval	product_id FDA application number for the product	trade_name The trade name for the product
DR REDDYS LABORATORIES LTD	PRODUCT_077902_001	CIPROFLOXACIN EXTENDED RELEASE
OTONOMY INC	PRODUCT_207986_001	OTIPRIO
BAYER PHARMACEUTICALS CORP	PRODUCT_019858_001	CIPRO IN SODIUM CHLORIDE 0.9% IN PLASTIC CONTAINER
BEDFORD LABORATORIES	PRODUCT_076992_001	CIPROFLOXACIN
BEDFORD LABORATORIES	PRODUCT_076992_002	CIPROFLOXACIN
BEDFORD LABORATORIES	PRODUCT_076993_001	CIPROFLOXACIN
FRESENIUS KABI USA LLC	PRODUCT_076484_001	CIPROFLOXACIN
FRESENIUS KABI USA LLC	PRODUCT_076484_002	CIPROFLOXACIN
HIKMA FARMACEUTICA (PORTUGAL) SA	PRODUCT_076717_001	CIPROFLOXACIN
HIKMA FARMACEUTICA (PORTUGAL) SA	PRODUCT_076717_002	CIPROFLOXACIN
HOSPIRA INC	PRODUCT_077245_001	CIPROFLOXACIN
HOSPIRA INC	PRODUCT_077245_002	CIPROFLOXACIN

☐	🖊 Düzenle	⚟ Kopyala	⊝ Sil	HIKMA FARMACEUTICA (PORTUGAL) SA	PRODUCT_076757_001	CIPROFLOXACIN IN DEXTROSE 5%
☐	🖊 Düzenle	⚟ Kopyala	⊝ Sil	BAXTER HEALTHCARE CORP	PRODUCT_077888_001	CIPROFLOXACIN IN DEXTROSE 5% IN PLASTIC CONTAINER
☐	🖊 Düzenle	⚟ Kopyala	⊝ Sil	BAXTER HEALTHCARE CORP	PRODUCT_077888_002	CIPROFLOXACIN IN DEXTROSE 5% IN PLASTIC CONTAINER
☐	🖊 Düzenle	⚟ Kopyala	⊝ Sil	BEDFORD LABORATORIES DIV BEN VENUE LABORATORIES IN...	PRODUCT_078114_001	CIPROFLOXACIN IN DEXTROSE 5% IN PLASTIC CONTAINER
☐	🖊 Düzenle	⚟ Kopyala	⊝ Sil	BEDFORD LABORATORIES DIV BEN VENUE LABORATORIES IN...	PRODUCT_078114_002	CIPROFLOXACIN IN DEXTROSE 5% IN PLASTIC CONTAINER
☐	🖊 Düzenle	⚟ Kopyala	⊝ Sil	HIKMA FARMACEUTICA (PORTUGAL) SA	PRODUCT_078431_001	CIPROFLOXACIN IN DEXTROSE 5% IN PLASTIC CONTAINER
☐	🖊 Düzenle	⚟ Kopyala	⊝ Sil	TEVA PHARMACEUTICALS USA	PRODUCT_077138_001	CIPROFLOXACIN IN DEXTROSE 5% IN PLASTIC CONTAINER
☐	🖊 Düzenle	⚟ Kopyala	⊝ Sil	TEVA PHARMACEUTICALS USA	PRODUCT_077138_002	CIPROFLOXACIN IN DEXTROSE 5% IN PLASTIC CONTAINER
☐	🖊 Düzenle	⚟ Kopyala	⊝ Sil	ANCHEN PHARMACEUTICALS, INC	PRODUCT_078166_001	CIPROFLOXACIN EXTENDED RELEASE
☐	🖊 Düzenle	⚟ Kopyala	⊝ Sil	DR REDDYS LABORATORIES LTD	PRODUCT_077701_002	CIPROFLOXACIN EXTENDED RELEASE
☐	🖊 Düzenle	⚟ Kopyala	⊝ Sil	DR REDDYS LABORATORIES LTD	PRODUCT_077701_001	CIPROFLOXACIN EXTENDED RELEASE
☐	🖊 Düzenle	⚟ Kopyala	⊝ Sil	HOSPIRA INC	PRODUCT_077753_001	CIPROFLOXACIN IN DEXTROSE 5% IN PLASTIC CONTAINER
☐	🖊 Düzenle	⚟ Kopyala	⊝ Sil	HOSPIRA INC	PRODUCT_077753_002	CIPROFLOXACIN IN DEXTROSE 5% IN PLASTIC CONTAINER

8. Find the number of formulations and product patents in one query.

SELECT COUNT(DISTINCT formulation_id) as 'Formulation id count', COUNT(DISTINCT product_patents.prod_pat_id) as 'Product patent id count'
FROM formulations join product_patents on product_patents.product_id = formulations.product_id;

SQL sorgunuz başarılı olarak çalıştırıldı.

SELECT COUNT(DISTINCT formulation_id) as 'Formulation id count', COUNT(DISTINCT product_patents.prod_pat_id) as 'Product patent id count' FROM formulations join product_patents on product_patents.product_id = formulations.product_id;

☐ Profil çıkart [Satır içi düzenle] [Düzenle] [SQL'i açıkla] [PHP kodu oluştur] [Yenile]

Fazladan seçenekler

Formulation id count	Product patent id count
794	2838

9. For each molecule that are present in at least 100 products, retrieve its molregno, preferred name and the count of its products. What is the preferred name of the molecule found in the highest number of products?

SELECT molecule_dictionary.molregno, pref_name, counted
FROM molecule_dictionary, (SELECT COUNT(product_id) as counted, molregno from formulations GROUP BY molregno) as count_product
WHERE molecule_dictionary.molregno = count_product.molregno AND count_product.counted >100;

Gösterilen satır 0 - 58 (toplam 59, Sorgu 0.0240 saniye sürdü.)

SELECT molecule_dictionary.molregno, pref_name, counted FROM molecule_dictionary, (SELECT COUNT(product_id) as counted, molregno from formulations GROUP BY molregno) as count_product WHERE molecule_dictionary.molregno = count_product.molregno AND count_product.counted >100;

Profil çıkart [Satır içi düzenle] [Düzenle] [SQL'i açıkla] [PHP kodu oluştur] [Yenile]

Tümünü göster | Satır sayısı: 100

Fazladan seçenekler

molregno Internal Primary Key for the molecule	pref_name Preferred name for the molecule	counted
16450	ACETAMINOPHEN	696
675602	AMINO ACIDS	165
674353	AMLODIPINE BESYLATE	411
143284	AMOXICILLIN	197
1280	ASPIRIN	112
407354	ATORVASTATIN CALCIUM	138
544432	BENAZEPRIL HYDROCHLORIDE	141
545956	BUPROPION HYDROCHLORIDE	123
16485	CAFFEINE	113
674619	CALCIUM CHLORIDE	175
444750	CAPTOPRIL	128
1673259	CEFTRIAXONE SODIUM	102
1031157	CETIRIZINE HYDROCHLORIDE	169
134333	CHLORTHALIDONE	109
1673803	CLINDAMYCIN PHOSPHATE	114
548124	CLONIDINE HYDROCHLORIDE	111
675050	CODEINE PHOSPHATE	188
688684	DEXTROSE	477
468199	DIPHENHYDRAMINE HYDROCHLORIDE	116
27626	ESTRADIOL	134
31241	ETHINYL ESTRADIOL	378
1592405	GENTAMICIN SULFATE	122
675515	HEPARIN SODIUM	233
543263	HYDRALAZINE HYDROCHLORIDE	162
2045	HYDROCHLOROTHIAZIDE	831
2197548	HYDROCODONE BITARTRATE	333
374052	HYDROCORTISONE	221
11674	IBUPROFEN	293
421066	IRBESARTAN	106
328164	LEVONORGESTREL	114
674360	LIDOCAINE HYDROCHLORIDE	206
189204	LISINOPRIL	168
109797	LOSARTAN POTASSIUM	116
1674520	MAGNESIUM CHLORIDE	170
547681	METFORMIN HYDROCHLORIDE	323
3730	METHYLDOPA	104
27912	METRONIDAZOLE	102
1376014	MORPHINE SULFATE	204
551147	NALOXONE HYDROCHLORIDE	128
51056	NAPROXEN	102
2197640	NEOMYCIN SULFATE	114
187962	NORETHINDRONE	113
675097	NORETHINDRONE ACETATE	106
444572	NYSTATIN	118
674643	OLMESARTAN MEDOXOMIL	163
674841	OXYCODONE HYDROCHLORIDE	289
674682	POTASSIUM CHLORIDE	563
674701	PROMETHAZINE HYDROCHLORIDE	174
505776	PROPRANOLOL HYDROCHLORIDE	220
674675	PSEUDOEPHEDRINE HYDROCHLORIDE	103
43952	RESERPINE	141
1123018	ROSUVASTATIN CALCIUM	120
138562	SIMVASTATIN	129
304381	SODIUM BICARBONATE	107
674525	SODIUM CHLORIDE	554
116949	TELMISARTAN	101
455284	TETRACYCLINE HYDROCHLORIDE	101
419622	TRIAMCINOLONE ACETONIDE	221
139045	VALSARTAN	199

Melis Oktayoglu 64388

10. For each product that has a black box warning, retrieve the product ID, trade name, the number of molecules in the product, and the average first approval year of these molecules.

SELECT formulations.product_id, trade_name, COUNT(molecule_dictionary.molregno),
AVG(molecule_dictionary.first_approval)
FROM (products join formulations on formulations.product_id = products.product_id) join
molecule_dictionary on molecule_dictionary.molregno = formulations.molregno
WHERE products.black_box_warning = 1
GROUP BY formulations.product_id;

product_id	trade_name	COUNT(molecule_dictionary.molregno)	AVG(molecule_dictionary.first_approval)
PRODUCT_004782_001	PREMARIN	1	1942.0000
PRODUCT_004782_002	PREMARIN	1	1942.0000
PRODUCT_004782_003	PREMARIN	1	1942.0000
PRODUCT_004782_004	PREMARIN	1	1942.0000
PRODUCT_004782_005	PREMARIN	1	1942.0000
PRODUCT_004782_006	PREMARIN	1	1942.0000
PRODUCT_005010_001	DEMEROL	1	1942.0000
PRODUCT_005010_002	DEMEROL	1	1942.0000
PRODUCT_005010_003	DEMEROL	1	1942.0000
PRODUCT_005010_004	DEMEROL	1	1942.0000
PRODUCT_005010_005	DEMEROL	1	1942.0000
PRODUCT_005010_007	DEMEROL	1	1942.0000
PRODUCT_005010_009	DEMEROL	1	1942.0000
PRODUCT_005213_001	HYCODAN	2	1943.0000
PRODUCT_005213_002	HYCODAN	2	1943.0000
PRODUCT_005264_010	HEPARIN LOCK FLUSH	1	1939.0000
PRODUCT_005929_001	D.H.E. 45	1	1946.0000
PRODUCT_006620_001	CAFERGOT	2	1948.0000
PRODUCT_007337_005	PERCODAN-DEMI	3	1950.0000