

CPSC 304 Project Cover Page

Milestone #: 4

Date: 11/27/2025

Group Number: 11

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By typing our names and student numbers in the above table, we certify that the work in the attached assignment was performed solely by those whose names and student IDs are included above. (In the case of Project Milestone 0, the main purpose of this page is for you to let us know your e-mail address, and then let us assign you to a TA for your project supervisor.)

In addition, we indicate that we are fully aware of the rules and consequences of plagiarism, as set forth by the Department of Computer Science and the University of British Columbia

Project Description

Overview of the Project

This project models an Intellectual Property (IP) Legal Management System project with Full Frontend–Backend Integration using Logic & API Features, using:

- Frontend: HTML, CSS, JS
- Backend: JavaScript, Node.js, Oracle

It represents the relationships between clients, consultant lawyers, legal cases, and various types of intellectual property, including patents, trademarks, copyrights, and trade secrets.

This database supports cascading deletes on case removal. The backend of the application is sanitized and robust(shows errors whenever necessary). The application is designed with a user-friendly GUI that returns data in a concise and user-readable form, including tables and notifications whenever an action is taken.

The current implementation of the DDL_final.sql file is based completely on the schema we had in milestone 2. The small changes we made were:

1. Rearranging the attributes in the schema.
2. Renaming date to consultation_date in ConsultationBase for more clarity.

These are the queries we used as part of the project:

1. Insert:(file: appService.js line: 429-431)

```
INSERT INTO "Case" (case_id, consultant_id, ip_id, court_id, description, status, open_date, close_date)
```

```
VALUES (:case_id, :consultant_id, :ip_id, :court_id, :description, :status, TO_DATE(:open_date, 'YYYY-MM-DD'), TO_DATE(:close_date, 'YYYY-MM-DD'))
```

2. Update:(file: appService.js line: 218)

```
UPDATE Consultant_Lawyer SET ${updates.join(', ')} WHERE consultant_id = :consultant_id
```

3. Delete:(file: appService.js line: 462)

```
DELETE FROM "Case" WHERE case_id = :case_id
```

4. Filter: (file: appService.js line: 235-238, 262, 263, 284, 285, 291-293 [where it actually all runs])

```
SELECT consultant_id, name, license_number, years_experience, specialization,  
contact_details
```

```
FROM Consultant_Lawyer
```

```
WHERE 1=1
```

```
addCond("name", "LOWER(name) LIKE :name", filters.name ?  
`%${filters.name.toLowerCase()}%` : null);
```

```
addCond("license_number", "license_number = :license_number",  
filters.license_number || null);
```

```
addCond("specialization", "LOWER(specialization) LIKE :specialization",  
filters.specialization ? `%${filters.specialization.toLowerCase()}%` : null);
```

```
addCond("contact", "LOWER(contact_details) LIKE :contact", filters.contact ?  
`%${filters.contact.toLowerCase()}%` : null);
```

```
const result = await connection.execute(sql, binds, {
```

```
    outFormat: oracledb.OUT_FORMAT_OBJECT
```

```
});
```

5. Projection:(file: appService.js line: 511)

```
SELECT ${selectClause} FROM Consultant_Lawyer
```

6. JOIN:(file: appService.js line: 310-323)

```
SELECT c.consultation_id, c.consultation_date, c.type, DBMS_LOB.SUBSTR(c.notes,  
4000) AS notes, l.consultant_id, l.name AS consultant_name, l.specialization
```

```
FROM ConsultationBase c
```

```
JOIN Consultant_Lawyer l ON c.consultant_id = l.consultant_id  
WHERE 1=1  
AND (:name IS NULL OR LOWER(l.name) LIKE LOWER('%' || :name || '%'))  
AND (:type IS NULL OR c.type = :type)  
AND (:date_from IS NULL OR c.consultation_date >= TO_DATE(:date_from,  
'YYYY-MM-DD'))  
AND (:date_to IS NULL OR c.consultation_date <= TO_DATE(:date_to,  
'YYYY-MM-DD'))
```

7. Aggregation with Group By:(file: appService.js line: 528-5366)

```
SELECT co.court_id, co.name AS court_name, co.jurisdiction, COUNT(ca.case_id) AS  
total_cases  
FROM Court co  
LEFT JOIN "Case" ca ON co.court_id = ca.court_id  
GROUP BY co.court_id, co.name, co.jurisdiction  
ORDER BY total_cases DESC
```

This query aggregates the case data by court. It counts the total number of cases for each court. The LEFT JOIN ensures all courts are included, even those with no cases, and the results are ordered by the total cases in descending order.

8. Aggregation with HAVING:(file: appService.js line: 346-353)

```
SELECT l.consultant_id AS "Consultant ID", l.name AS "Consultant Name",  
COUNT(c.consultation_id) AS "Number of Consultations"  
FROM Consultant_Lawyer l  
JOIN ConsultationBase c ON l.consultant_id = c.consultant_id  
GROUP BY l.consultant_id, l.name
```

```
HAVING COUNT(c.consultation_id) >= :min_count  
ORDER BY COUNT(c.consultation_id) DESC
```

This query counts the number of consultations per consultant and filters out consultants who have fewer than a specified number of consultations (:min_count). The HAVING clause filters after aggregation which helps us get the counts correctly.

9. Nested Aggregation with Group By:(file: appService.js line: 547-563)

```
SELECT c.consultant_id, c.name, c.specialization, COUNT(cb.consultation_id) AS  
num_consultations  
  
FROM Consultant_Lawyer c  
  
LEFT JOIN ConsultationBase cb ON c.consultant_id = cb.consultant_id  
  
GROUP BY c.consultant_id, c.name, c.specialization  
  
HAVING COUNT(cb.consultation_id) > (  
  
    SELECT AVG(consultation_count)  
  
    FROM (   
  
        SELECT COUNT(consultation_id) AS consultation_count  
  
        FROM ConsultationBase  
  
        GROUP BY consultant_id  
  
    )  
)  
  
ORDER BY num_consultations DESC
```

This query calculates the number of consultations for each consultant and compares it to the average consultation count across all consultants. The subquery computes the average count, and only consultants with above-average consultations are returned.

10.Division:(file: appService.js line: 373-382)

```
SELECT c.consultant_id, c.name
FROM Consultant_Lawyer c
WHERE NOT EXISTS (
    SELECT type
    FROM ConsultationType t
    WHERE NOT EXISTS (
        SELECT *
        FROM ConsultationBase cb
        WHERE cb.consultant_id = c.consultant_id
        AND cb.type = t.type))
```

This query uses NOT EXIST - NOT EXIST method of division to find consultants who have consulted on every type of consultation listed in the ConsultationType table.

FOR EXTRA CREDIT: This is our implementation of a **TRIGGER** :

CREATE OR REPLACE TRIGGER trg_max_cases_per_day

BEFORE INSERT ON "Case"

FOR EACH ROW

DECLARE

v_count INTEGER;

BEGIN

-- Count how many cases already exist for this court on this date

SELECT COUNT(*)

INTO v_count

FROM "Case"

WHERE court_id = :NEW.court_id

AND open_date = :NEW.open_date;

-- If already 3, block the insert

IF v_count >= 3 THEN

RAISE_APPLICATION_ERROR(

-20001,

'Error: A court cannot have more than 3 cases on the same day.'

);

END IF;

END;

/

These are the schemas and the sample data that we have in the project:

Patent (ip_id: INTEGER, patent_number: VARCHAR(100))

	A	B
1	ip_id	patent_number
2	101	PAT-001
3	102	PAT-002
4	103	PAT-003
5	104	PAT-004
6	105	PAT-005
7	107	PAT-007
8	108	PAT-008
9	109	PAT-009
10	110	PAT-010
11	111	PAT-011
12	112	PAT-012

Trademark (ip_id: INTEGER, class: VARCHAR(255))

	A	B
1	ip_id	class
2	101	Class A
3	102	Class B
4	103	Class C
5	104	Class D
6	105	Class E
7	107	Class 9 - Electronics
8	108	Class 42 - Technology
9	110	Class 12 - Vehicles
10	111	Class 29 - Food Products
11	115	Class 36 - Financial Services

Copyright (ip_id: INTEGER, registration_date: DATE)

	A	B
1	ip_id	registration_date
2	101	DATE '2020-04-01'
3	102	DATE '2021-08-10'
4	103	DATE '2019-12-15'
5	104	DATE '2022-05-25'
6	105	DATE '2023-09-05'
7	107	DATE '2021-02-20'
8	112	DATE '2023-01-15'
9	113	DATE '2020-10-05'
10	114	DATE '2023-07-30'

Trade_Secret (ip_id: INTEGER, secrecy_level: VARCHAR(100))

	A	B
1	ip_id	secrecy_level
2	101	High
3	102	Medium
4	103	Low
5	104	High
6	105	Medium
7	108	High
8	109	Medium
9	110	High
10	111	High

IP_merge_has_an (ip_id: INTEGER, filing_date: DATE, status: VARCHAR(50), description: CLOB, title: VARCHAR(255), registration_number: VARCHAR(100), client_id: INTEGER)

A	B	C	D	E	F	G
ip_id	filing_date	status	description	title	registration_number	client_id
101	DATE '2020-03-15	Approved	Smart sensor patent	Smart Sensor	REG-001	1
102	DATE '2021-06-20	Pending	AI drug discovery algorithm	AI Drug Discovery	REG-002	2
103	DATE '2019-11-05	Expired	Online learning platform	EduLearn	REG-003	3
104	DATE '2022-02-10	Approved	Mobile banking app	BankEase	REG-004	4
105	DATE '2023-08-25	Pending	Organic fertilizer formula	GreenBoost	REG-005	5
106	DATE '2025-11-25	Pending	Test IP for case insertion	Test Patent	REG-006	1
107	DATE '2021-01-12	Approved	Streaming media codec	StreamMax	REG-007	6
108	DATE '2022-05-18	Approved	Solar panel efficiency tech	SolarBoost	REG-008	7
109	DATE '2020-09-22	Approved	Drug delivery system	MediDose	REG-009	8
110	DATE '2023-03-30	Pending	Autonomous vehicle sensor	AutoSense	REG-010	9
111	DATE '2021-07-14	Approved	Food preservation method	FreshKeep	REG-011	10
112	DATE '2022-11-08	Approved	Cloud computing architecture	CloudScale	REG-012	11
113	DATE '2020-04-25	Expired	Genetic analysis tool	GeneScan	REG-013	12
114	DATE '2023-06-17	Pending	Virtual classroom system	VirtuLearn	REG-014	13
115	DATE '2021-12-03	Approved	Blockchain payment protocol	ChainPay	REG-015	14

IP_Validation (ip_id: INTEGER, valuation_id: INTEGER, file_location: VARCHAR(255), valuation_date: DATE, value: DECIMAL(15, 2), methodology: CLOB)

A	B	C	D	E	F
ip_id	valuation_id	file_location	valuation_date	value	methodology
101	1	vault/patents/smart_sensc	DATE '2021-01-10	120000.00	Cost-based valuation
102	1	vault/patents/ai_drug.pdf	DATE '2022-07-05	250000.00	Market comparison
103	1	vault/patents/edulearn.pd	DATE '2020-12-12	50000.00	Discounted cash flow
104	1	vault/patents/bankease.pdf	DATE '2023-03-18	175000.00	Income approach
105	1	vault/patents/greenboost.p	DATE '2024-02-20	95000.00	Cost estimation
107	1	vault/patents/streammax.p	DATE '2021-06-15	300000.00	Market comparison
108	1	vault/patents/solarboost.p	DATE '2022-11-20	450000.00	Income approach
109	1	vault/patents/medidose.pc	DATE '2021-03-25	380000.00	Cost-based valuation
110	1	vault/patents/autosense.p	DATE '2023-08-30	520000.00	Market comparison
111	1	vault/patents/freshkeep.pc	DATE '2022-01-18	210000.00	Discounted cash flow
112	1	vault/patents/cloudscale.p	DATE '2023-04-22	680000.00	Income approach
113	1	vault/patents/genescan.pc	DATE '2020-09-10	420000.00	Cost-based valuation
114	1	vault/patents/virtulearn.pc	DATE '2023-10-15	280000.00	Market comparison
115	1	vault/patents/chainpay.pc	DATE '2022-05-28	550000.00	Income approach

Legal_Document (document_id: INTEGER, title: VARCHAR(255), type: VARCHAR(100), issue_date: DATE)

A	B	C	D
document_id	title	type	issue_date
401	Patent Filing Affidavit	Affidavit	DATE '2021-01-01
402	Client Contract	Contract	DATE '2020-05-15
403	Case Report	Report	DATE '2022-03-10
404	Confidentiality Agreement	Agreement	DATE '2019-08-20
405	Trade License	License	DATE '2023-01-05
406	Trademark Filing Affidavit	Affidavit	DATE '2021-01-01
407	Service Contract	Contract	DATE '2020-05-15
408	IP Valuation Report	Report	DATE '2022-03-10
409	Non-Disclosure Agreement	Agreement	DATE '2019-08-20
410	Patent License	License	DATE '2023-01-05

Organization_Type (organization: VARCHAR(255), client_type: VARCHAR(100))

	A	B
1	organization	client_type
2	TechCorp	Technology
3	BioHealth Inc.	Healthcare
4	EduSmart Ltd.	Education
5	FinServe	Finance
6	AgroGrow	Agriculture
7	MediaWorks	Media and Entertainment
8	GreenEnergy Co.	Energy
9	PharmaTech	Pharmaceutical
10	AutoMotive Inc.	Automotive
11	FoodCorp	Food and Beverage
12		

Client (client_id: INTEGER, name: VARCHAR(255), contact_info: VARCHAR(255), organization: VARCHAR(255))

	A	B	C	D
1	client_id	name	contact_info	organization
2	1	Alice Johnson	alice@techcorp.com	TechCorp
3	2	Bob Smith	bob@biohealth.com	BioHealth Inc.
4	3	Charlie Davis	charlie@edusmart.com	EduSmart Ltd.
5	4	Diana Brown	diana@finserve.com	FinServe
6	5	Ethan White	ethan@agrogrow.com	AgroGrow
7	6	Fiona Chen	fiona@mediaworks.com	MediaWorks
8	7	George Miller	george@greenenergy.co	GreenEnergy Co.
9	8	Hannah Lee	hannah@pharmatech.co	PharmaTech
10	9	Ivan Rodriguez	ivan@automotive.com	AutoMotive Inc.
11	10	Julia Kim	julia@foodcorp.com	FoodCorp
12	11	Kevin Park	kevin@techcorp.com	TechCorp
13	12	Lisa Wang	lisa@biohealth.com	BioHealth Inc.
14	13	Mike Thompson	mike@edusmart.com	EduSmart Ltd.
15	14	Nancy Green	nancy@finserve.com	FinServe
16	15	Oliver Black	oliver@agrogrow.com	AgroGrow

Jurisdiction (jurisdiction: VARCHAR(255), location: VARCHAR(255))

	A	B
1	jurisdiction	location
2	BC Supreme Court	Vancouver
3	Ontario Court	Toronto
4	Alberta Court	Calgary
5	Quebec Court	Montreal
6	Federal Court	Ottawa
7		

Court (court_id: INTEGER, name: VARCHAR(255), jurisdiction: VARCHAR(255))

	A	B	C
1	court_id	name	jurisdiction
2	301	Vancouver Supreme Court	BC Supreme Court
3	302	Toronto High Court	Ontario Court
4	303	Calgary Court of Law	Alberta Court
5	304	Montreal Court	Quebec Court
6	305	Federal Court of Canada	Federal Court

DocTypeIssue (type: VARCHAR(100), issue_date: DATE, expiry_date: DATE)

	A	B	C
1	type	issue_date	expiry_date
2	Affidavit	DATE '2021-01-01'	DATE '2024-01-01'
3	Contract	DATE '2020-05-15'	DATE '2025-05-15'
4	Report	DATE '2022-03-10'	DATE '2027-03-10'
5	Agreement	DATE '2019-08-20'	DATE '2024-08-20'
6	License	DATE '2023-01-05'	DATE '2028-01-05'

Seniority (years_experience: INTEGER, seniority_level: VARCHAR(100))

	A	B
1	years_experience	seniority_level
2	1	Junior
3	2	Junior+
4	3	Intermediate
5	4	Intermediate+
6	5	Senior
7	6	Senior+
8	7	Advanced
9	8	Lead
10	9	Lead+
11	10	Principal
12		

Consultant_Lawyer (consultant_id: INTEGER, name: VARCHAR(255), license_number: VARCHAR(100), years_experience: INTEGER, specialization: VARCHAR(255), contact_details: VARCHAR(255))

	A	B	C	D	E	F
1	consultant_id	name	license_number	years_experience	specialization	contact_details
2	201	Laura King	LIC-1001	5	Intellectual Property	laura@lawfirm.com
3	202	Mark Lee	LIC-1002	3	Patent Law	mark@lawfirm.com
4	203	Nina Patel	LIC-1003	8	Corporate Law	nina@lawfirm.com
5	204	Oscar Reed	LIC-1004	10	Trademark Law	oscar@lawfirm.com
6	205	Paula Zhang	LIC-1005	1	Copyright Law	paula@lawfirm.com
7	206	Quinn Martinez	LIC-1006	7	Patent Law	quinn@lawfirm.com
8	207	Rachel Adams	LIC-1007	4	Intellectual Property	rachel@lawfirm.com
9	208	Samuel Harris	LIC-1008	6	Trade Secret Law	samuel@lawfirm.com
10	209	Tina Brooks	LIC-1009	2	Copyright Law	tina@lawfirm.com
11	210	Uma Singh	LIC-1010	9	Trademark Law	uma@lawfirm.com
12						

Uses (case_id: INTEGER, document_id: INTEGER)

	A	B
1	duration_minutes	fee
2	30	100.00
3	60	180.00
4	90	250.00
5	120	300.00
6	180	400.00

ConsultationType (type: VARCHAR(100), duration_minutes: INTEGER)

	A	B
1	type	duration_minutes
2	Initial Review	30
3	Detailed Assessment	60
4	Follow-up	90
5	Expert Opinion	120
6	Full-Day Session	180
7		

ConsultationBase (consultation_id: INTEGER, client_id: INTEGER, consultant_id: INTEGER, consultation_date: DATE, type: VARCHAR(100), notes: CLOB)

A	B	C	D	E	F
consultation_id	client_id	consultant_id	consultation_date	type	notes
1 501	1	201	DATE '2023-01-10'	Initial Review	Discussed patent filing
2 502	2	202	DATE '2023-02-14'	Detailed Assessment	Evaluated AI IP claim
4 503	3	203	DATE '2023-03-05'	Follow-up	Reviewed education platform IP
5 504	4	204	DATE '2023-04-12'	Expert Opinion	Trademark dispute analysis
6 505	5	205	DATE '2023-05-20'	Full-Day Session	Copyright protection strategy
7 506	1	201	DATE '2023-06-01'	Detailed Assessment	Deep dive into patent scope
8 507	1	201	DATE '2023-07-01'	Follow-up	Checked progress on IP filing
9 508	1	201	DATE '2023-07-20'	Expert Opinion	Provided expert testimony on IP
10 509	1	201	DATE '2023-08-05'	Full-Day Session	Comprehensive strategy workshop
11 511	1	202	DATE '2023-09-01'	Initial Consultation	Initial consultation
12 512	1	202	DATE '2023-09-02'	Detailed Assessment	Detailed review
13 513	1	202	DATE '2023-09-03'	Follow-up	Follow-up meeting
14 514	1	202	DATE '2023-09-04'	Expert Opinion	Expert analysis
15 515	1	202	DATE '2023-09-05'	Full-Day Session	Full day strategy
16 516	2	202	DATE '2023-09-10'	Initial Review	New client intake
17 517	3	202	DATE '2023-09-15'	Detailed Assessment	IP portfolio review
18 518	4	202	DATE '2023-09-20'	Follow-up	Progress check
19 519	5	202	DATE '2023-09-25'	Expert Opinion	Additional expert opinion
20 520	6	202	DATE '2023-09-30'	Full-Day Session	Another full day session
21 521	2	203	DATE '2023-10-01'	Initial Review	Corporate IP assessment
22 522	3	203	DATE '2023-10-05'	Detailed Assessment	Due diligence review
23 523	4	203	DATE '2023-10-10'	Follow-up	Contract review
24 524	5	203	DATE '2023-10-15'	Expert Opinion	Legal opinion on merger
25 525	2	204	DATE '2023-11-02'	Detailed Assessment	Brand protection strategy
26 526	3	204	DATE '2023-11-03'	Follow-up	Application status
27 527	4	204	DATE '2023-11-04'	Expert Opinion	Infringement analysis
28 528	5	204	DATE '2023-11-05'	Full-Day Session	Comprehensive trademark audit
29 529	6	204	DATE '2023-11-06'	Detailed Assessment	New trademark filing
30 530	7	204	DATE '2023-11-07'	Detailed Assessment	International trademark strategy
31 531	8	204	DATE '2023-11-08'	Follow-up	Opposition response
32 532	9	204	DATE '2023-11-09'	Expert Opinion	Another expert opinion
33 533	10	204	DATE '2023-11-10'	Follow-up	Yet another follow-up
34 533	10	204	DATE '2023-11-10'	Follow-up	Yet another follow-up
35 534	6	205	DATE '2023-11-10'	Initial Review	Copyright registration
36 535	7	205	DATE '2023-11-15'	Detailed Assessment	Fair use analysis
37 536	8	206	DATE '2023-11-20'	Initial Review	Patent search
38 537	9	206	DATE '2023-11-21'	Detailed Assessment	Patentability opinion
39 538	10	206	DATE '2023-11-22'	Follow-up	Application drafting
40 539	11	206	DATE '2023-11-23'	Expert Opinion	Prior art analysis
41 540	12	206	DATE '2023-11-24'	Initial Review	Another initial review
42 541	13	206	DATE '2023-11-25'	Detailed Assessment	Additional assessment
43 542	14	206	DATE '2023-11-26'	Follow-up	Final follow-up
44 543	12	207	DATE '2023-11-25'	Initial Review	IP portfolio assessment
45 544	13	207	DATE '2023-11-26'	Detailed Assessment	Strategy development
46 545	14	207	DATE '2023-11-27'	Follow-up	Implementation review
47 546	15	208	DATE '2023-12-01'	Initial Review	Trade secret protection
48 547	1	208	DATE '2023-12-02'	Detailed Assessment	NDA review
49 548	2	208	DATE '2023-12-03'	Follow-up	Policy implementation
50 549	3	208	DATE '2023-12-04'	Expert Opinion	Breach investigation
51 550	4	209	DATE '2023-12-05'	Initial Review	Copyright basics
52 551	5	210	DATE '2023-12-10'	Detailed Assessment	Trademark consultation
53 552	6	210	DATE '2023-12-11'	Detailed Assessment	Brand strategy
54 553	7	210	DATE '2023-12-12'	Follow-up	Filing review
55 554	8	210	DATE '2023-12-13'	Expert Opinion	Dispute resolution
56 555	9	210	DATE '2023-12-14'	Full-Day Session	Global trademark strategy
57 556	10	210	DATE '2023-12-15'	Follow-up	New brand review
58 557	11	210	DATE '2023-12-16'	Detailed Assessment	Portfolio management

DurationFee (duration_minutes: INTEGER, fee: DECIMAL(10, 2))

	A	B
1	duration_minutes	fee
2	30	100.00
3	60	180.00
4	90	250.00
5	120	300.00
6	180	400.00

Case (case_id: INTEGER, consultant_id: INTEGER, ip_id: INTEGER, court_id: INTEGER, description: CLOB, status: VARCHAR(50), open_date: DATE, close_date: DATE)

A	B	C	D	E	F	G	H
case_id	consultant_id	ip_id	court_id	description	status	open_date	close_date
1	201	101	301	Patient infringement suit	Open	DATE '2023-01-01'	NULL
2	601	202	102	Pending IP approval challenge	Open	DATE '2023-02-10'	NULL
3	602	203	103	Expired copyright dispute	Closed	DATE '2022-06-01'	DATE '2023-02-01'
4	603	204	104	Trademark registration issue	Open	DATE '2023-03-12'	NULL
5	604	205	105	Trade secret confidentiality breach	Open	DATE '2023-04-20'	NULL
6	605	206	107	Media code patent dispute	Open	DATE '2023-05-15'	NULL
7	606	207	108	Solar technology licensing	Closed	DATE '2022-08-01'	DATE '2023-06-01'
8	607	208	109	Pharmaceutical patent defense	Open	DATE '2023-07-10'	NULL
9	608	209	110	Autonomous vehicle IP protection	Open	DATE '2023-08-20'	NULL
10	609	210	111	Food preservation trade secret	Open	DATE '2023-09-05'	NULL
11	610	201	112	Cloud computing patent filing	Closed	DATE '2022-10-15'	DATE '2023-05-20'
12	611	203	301	Genetic analysis copyright	Closed	DATE '2022-11-01'	DATE '2022-11-30'
13	612	203	113	Virtual classroom platform dispute	Open	DATE '2023-10-01'	NULL
14	613	204	114	Blockchain payment trademark	Open	DATE '2023-11-01'	NULL
15	614	204	115	304			