PROJECT TITLE : DATA WRANGLING USING SQL

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1. Remove Duplicates
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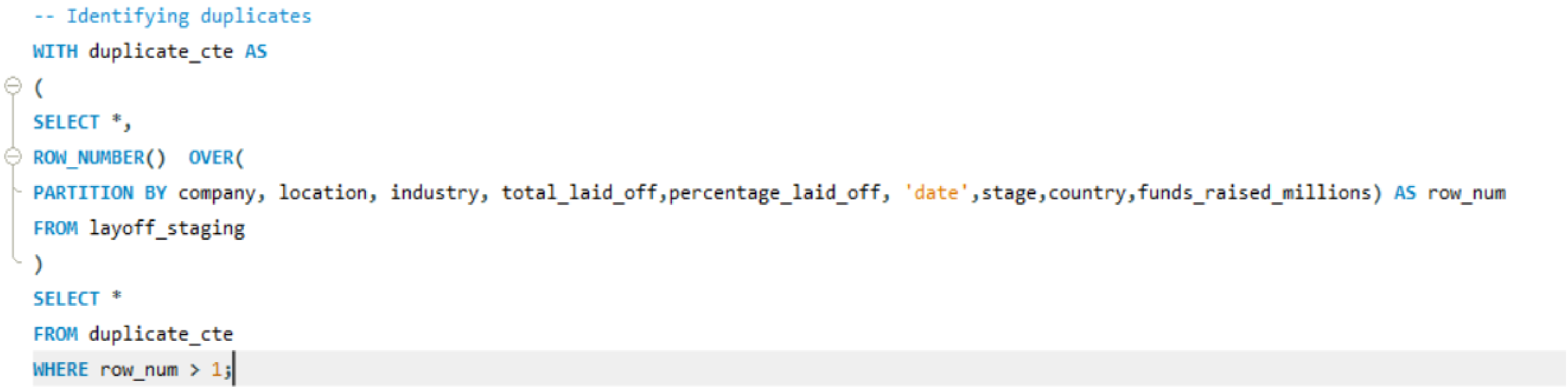
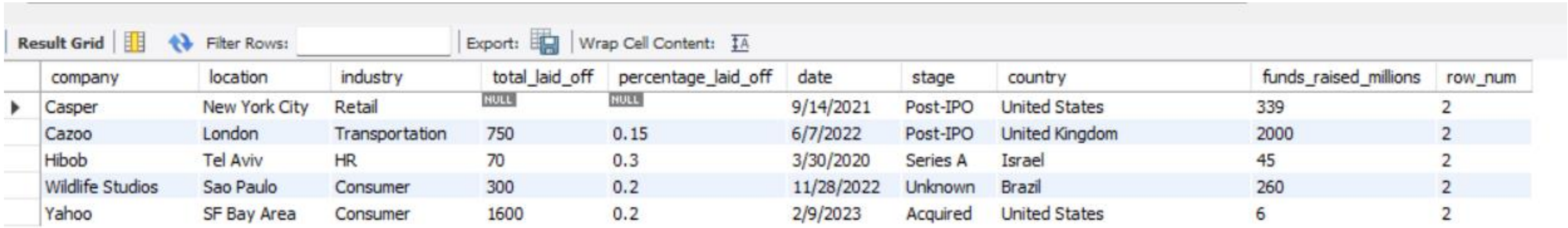
3. Dealing with Null Values or Blank values
4.Remove Unnecessary Columns

1. Remove Duplicates

1.Identifying duplicate rows using window functions

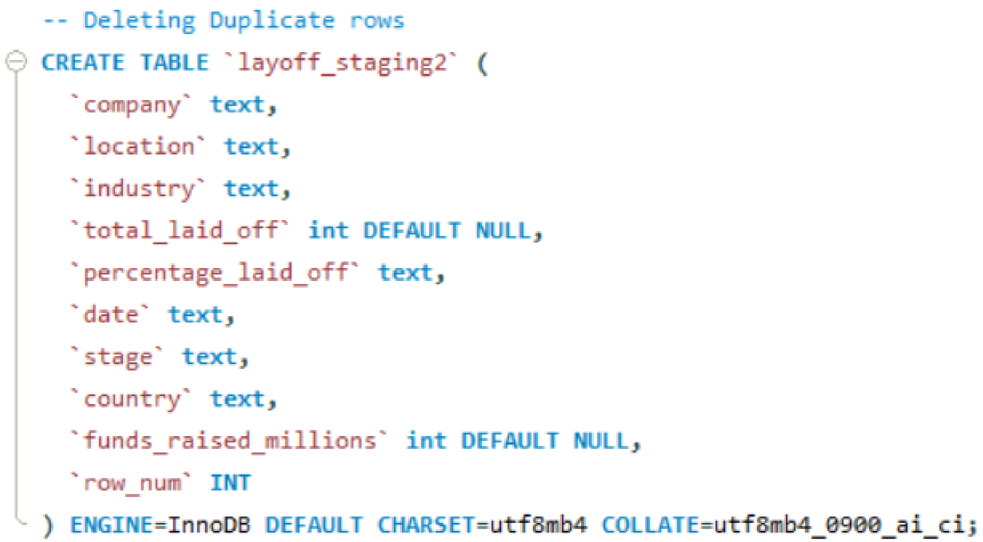


```
-- Identifying duplicates
WITH duplicate_cte AS
(
SELECT *,
ROW_NUMBER()  OVER(
PARTITION BY company, location, industry, total_laid_off,percentage_laid_off, 'date',stage,country,funds_raised_millions) AS row_num
FROM layoff_staging
)
SELECT *
FROM duplicate_cte
WHERE row_num > 1;
```



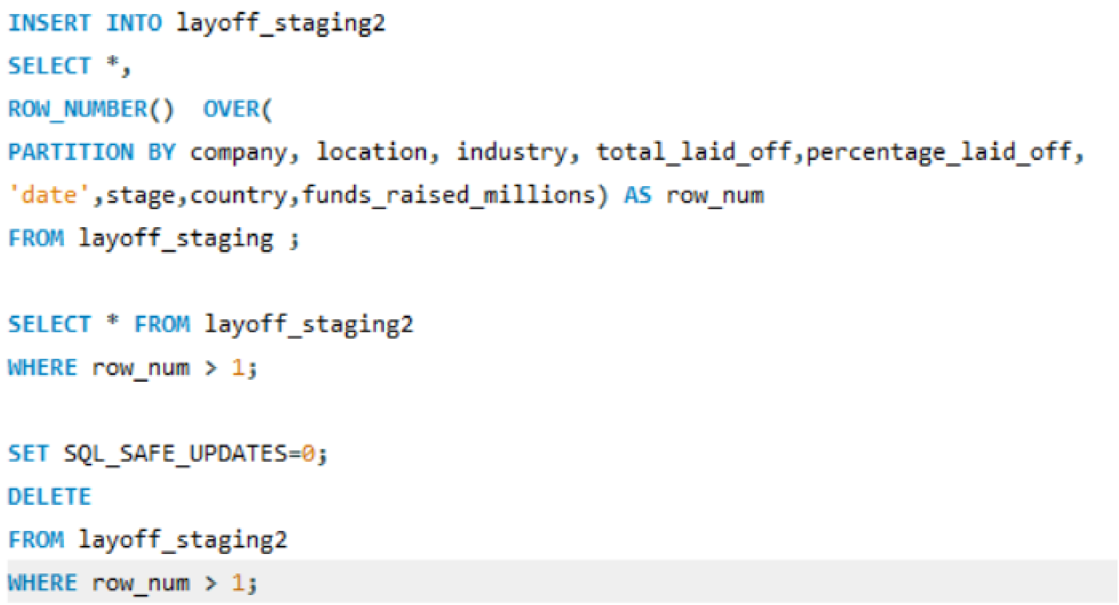
company	location	industry	total_laid_off	percentage_laid_off	date	stage	country	funds_raised_millions	row_num
Casper	New York City	Retail	NULL	NULL	9/14/2021	Post-IPO	United States	339	2
Cazoo	London	Transportation	750	0.15	6/7/2022	Post-IPO	United Kingdom	2000	2
Hibob	Tel Aviv	HR	70	0.3	3/30/2020	Series A	Israel	45	2
Wildlife Studios	Sao Paulo	Consumer	300	0.2	11/28/2022	Unknown	Brazil	260	2
Yahoo	SF Bay Area	Consumer	1600	0.2	2/9/2023	Acquired	United States	6	2

2.Creating a new table with the same schema



```
-- Deleting Duplicate rows
CREATE TABLE `layoff_staging2` (
  `company` text,
  `location` text,
  `industry` text,
  `total_laid_off` int DEFAULT NULL,
  `percentage_laid_off` text,
  `date` text,
  `stage` text,
  `country` text,
  `funds_raised_millions` int DEFAULT NULL,
  `row_num` INT
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;
```

3.Insert raw data and remove duplicates

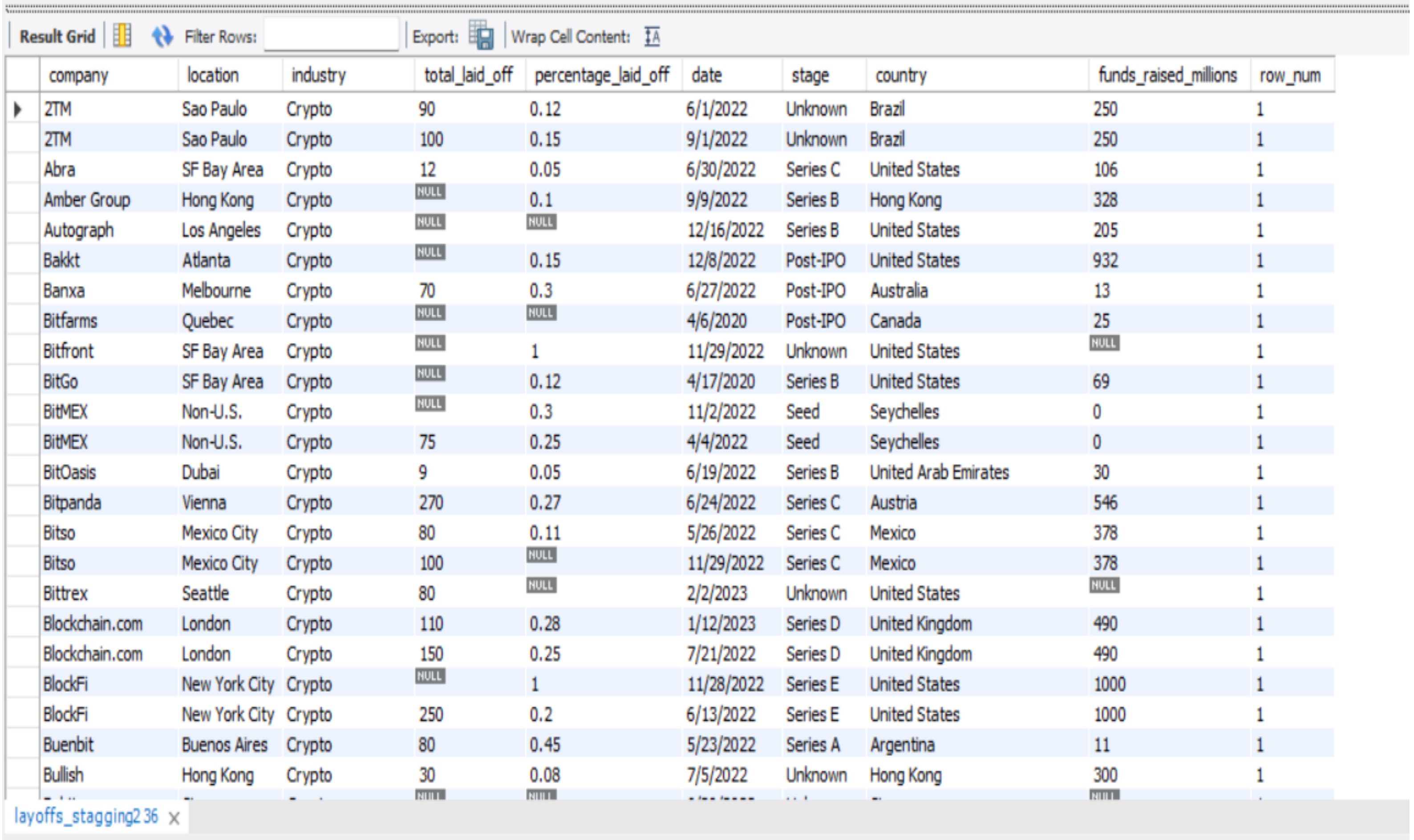


```
INSERT INTO layoff_staging2
SELECT *,
ROW_NUMBER()  OVER(
PARTITION BY company, location, industry, total_laid_off,percentage_laid_off,
'date',stage,country,funds_raised_millions) AS row_num
FROM layoff_staging ;

SELECT * FROM layoff_staging2
WHERE row_num > 1;

SET SQL_SAFE_UPDATES=0;
DELETE
FROM layoff_staging2
WHERE row_num > 1;
```

2. Standardizing the data

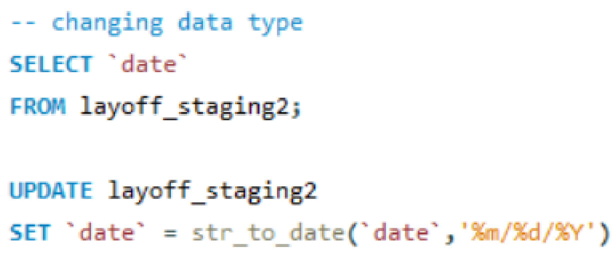
1.Standardising string

```
-- 2. Standardize the data
SELECT company, TRIM(company)
FROM layoff_staging2;

UPDATE layoff_staging2
SET company = TRIM(company);

SELECT *
FROM layoff_staging2
WHERE industry LIKE 'Crypto%';

UPDATE layoff_staging2
SET industry = 'Crypto'
WHERE industry LIKE 'Crypro';

SELECT DISTINCT industry
FROM layoff_staging2;

SELECT DISTINCT country, TRIM( TRAILING '.' FROM  country)
FROM layoff_staging2
ORDER BY 1;

UPDATE layoff_staging2
SET country = TRIM( TRAILING '.' FROM  country)
WHERE country LIKE 'United States%';

SELECT DISTINCT country
FROM layoff_staging2;
```

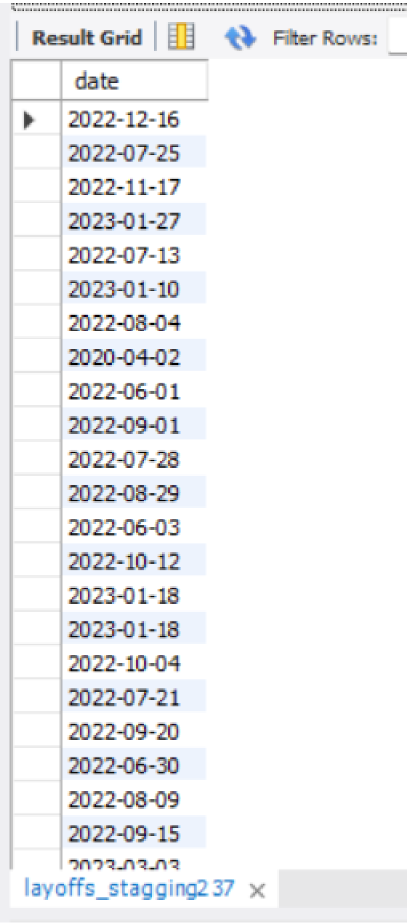


company	location	industry	total_laid_off	percentage_laid_off	date	stage	country	funds_raised_millions	row_num
2TM	Sao Paulo	Crypto	90	0.12	6/1/2022	Unknown	Brazil	250	1
2TM	Sao Paulo	Crypto	100	0.15	9/1/2022	Unknown	Brazil	250	1
Abra	SF Bay Area	Crypto	12	0.05	6/30/2022	Series C	United States	106	1
Amber Group	Hong Kong	Crypto	NULL	0.1	9/9/2022	Series B	Hong Kong	328	1
Autograph	Los Angeles	Crypto	NULL	NULL	12/16/2022	Series B	United States	205	1
Bakkt	Atlanta	Crypto	NULL	0.15	12/8/2022	Post-IPO	United States	932	1
Banxa	Melbourne	Crypto	70	0.3	6/27/2022	Post-IPO	Australia	13	1
Bitfarms	Quebec	Crypto	NULL	NULL	4/6/2020	Post-IPO	Canada	25	1
Bitfront	SF Bay Area	Crypto	NULL	1	11/29/2022	Unknown	United States	NULL	1
BitGo	SF Bay Area	Crypto	NULL	0.12	4/17/2020	Series B	United States	69	1
BitMEX	Non-U.S.	Crypto	NULL	0.3	11/2/2022	Seed	Seychelles	0	1
BitMEX	Non-U.S.	Crypto	75	0.25	4/4/2022	Seed	Seychelles	0	1
BitOasis	Dubai	Crypto	9	0.05	6/19/2022	Series B	United Arab Emirates	30	1
Bitpanda	Vienna	Crypto	270	0.27	6/24/2022	Series C	Austria	546	1
Bitso	Mexico City	Crypto	80	0.11	5/26/2022	Series C	Mexico	378	1
Bitso	Mexico City	Crypto	100	NULL	11/29/2022	Series C	Mexico	378	1
Bittrex	Seattle	Crypto	80	NULL	2/2/2023	Unknown	United States	NULL	1
Blockchain.com	London	Crypto	110	0.28	1/12/2023	Series D	United Kingdom	490	1
Blockchain.com	London	Crypto	150	0.25	7/21/2022	Series D	United Kingdom	490	1
BlockFi	New York City	Crypto	NULL	1	11/28/2022	Series E	United States	1000	1
BlockFi	New York City	Crypto	250	0.2	6/13/2022	Series E	United States	1000	1
Buenbit	Buenos Aires	Crypto	80	0.45	5/23/2022	Series A	Argentina	11	1
Bullish	Hong Kong	Crypto	30	0.08	7/5/2022	Unknown	Hong Kong	300	1

2.Changing data type



```
-- changing data type
SELECT `date`
FROM layoff_staging2;

UPDATE layoff_staging2
SET `date` = str_to_date(`date`,'%m/%d/%Y')
```

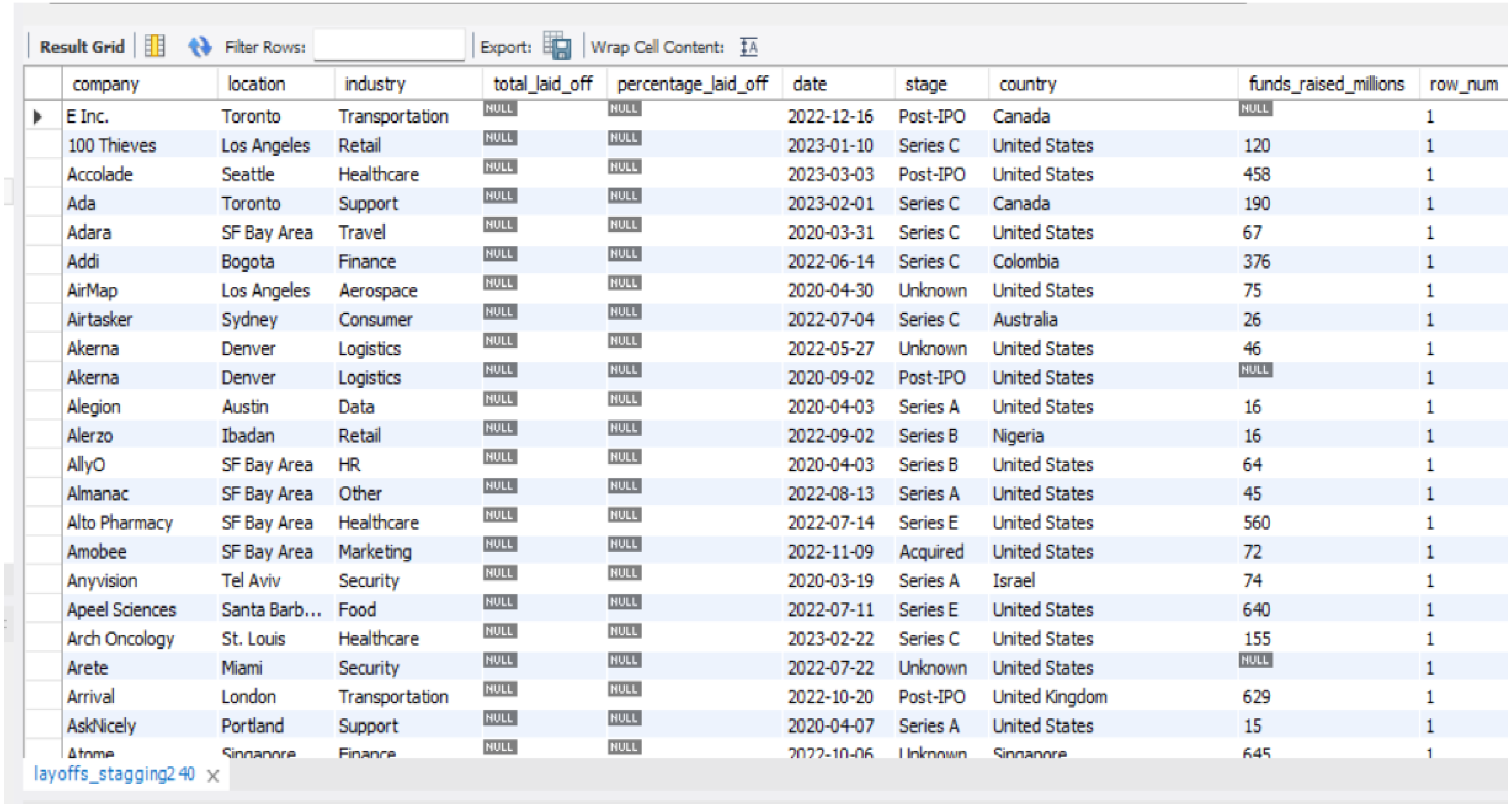


```
date
2022-12-16
2022-07-25
2022-11-17
2023-01-27
2022-07-13
2023-01-10
2022-08-04
2020-04-02
2022-06-01
2022-09-01
2022-07-28
2022-08-29
2022-06-03
2022-10-12
2023-01-18
2023-01-18
2022-10-04
2022-07-21
2022-09-20
2022-06-30
2022-08-09
2022-09-15
2023-03-03
```

3. Dealing with Null Values or Blank values

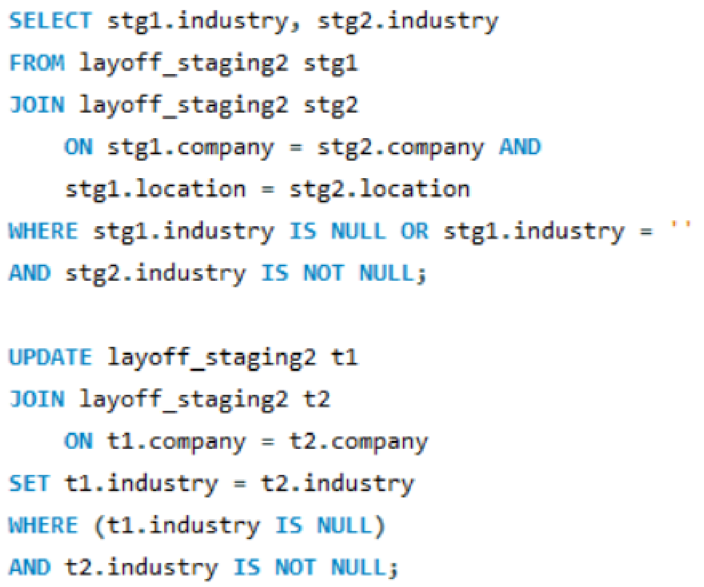
1.Identifying null values

```
-- 3. Null Values or Blank values

SELECT *
FROM layoff_staging2
WHERE total_laid_off IS NULL
AND percentage_laid_off IS NULL;


SELECT *
FROM layoff_staging2
WHERE industry IS NULL OR industry = '';

SELECT *
FROM layoff_staging2
WHERE company LIKE  "Bally's Interactive";

UPDATE layoff_staging2
SET industry = NULL
WHERE industry = '';
```



company	location	industry	total_laid_off	percentage_laid_off	date	stage	country	funds_raised_millions	row_num
E Inc.	Toronto	Transportation	NULL	NULL	2022-12-16	Post-IPO	Canada	NULL	1
100 Thieves	Los Angeles	Retail	NULL	NULL	2023-01-10	Series C	United States	120	1
Accolade	Seattle	Healthcare	NULL	NULL	2023-03-03	Post-IPO	United States	458	1
Ada	Toronto	Support	NULL	NULL	2023-02-01	Series C	Canada	190	1
Adara	SF Bay Area	Travel	NULL	NULL	2020-03-31	Series C	United States	67	1
Addi	Bogota	Finance	NULL	NULL	2022-06-14	Series C	Colombia	376	1
AirMap	Los Angeles	Aerospace	NULL	NULL	2020-04-30	Unknown	United States	75	1
Airtasker	Sydney	Consumer	NULL	NULL	2022-07-04	Series C	Australia	26	1
Akerna	Denver	Logistics	NULL	NULL	2022-05-27	Unknown	United States	46	1
Akerna	Denver	Logistics	NULL	NULL	2020-09-02	Post-IPO	United States	NULL	1
Alegion	Austin	Data	NULL	NULL	2020-04-03	Series A	United States	16	1
Alerzo	Ibadan	Retail	NULL	NULL	2022-09-02	Series B	Nigeria	16	1
AllyO	SF Bay Area	HR	NULL	NULL	2020-04-03	Series B	United States	64	1
Almanac	SF Bay Area	Other	NULL	NULL	2022-08-13	Series A	United States	45	1
Alto Pharmacy	SF Bay Area	Healthcare	NULL	NULL	2022-07-14	Series E	United States	560	1
Amobee	SF Bay Area	Marketing	NULL	NULL	2022-11-09	Acquired	United States	72	1
Anyvision	Tel Aviv	Security	NULL	NULL	2020-03-19	Series A	Israel	74	1
Apeel Sciences	Santa Barb...	Food	NULL	NULL	2022-07-11	Series E	United States	640	1
Arch Oncology	St. Louis	Healthcare	NULL	NULL	2023-02-22	Series C	United States	155	1
Arete	Miami	Security	NULL	NULL	2022-07-22	Unknown	United States	NULL	1
Arrival	London	Transportation	NULL	NULL	2022-10-20	Post-IPO	United Kingdom	629	1
AskNicely	Portland	Support	NULL	NULL	2020-04-07	Series A	United States	15	1
Atome	Singapore	Finance	NULL	NULL	2022-10-06	Unknown	Singapore	645	1

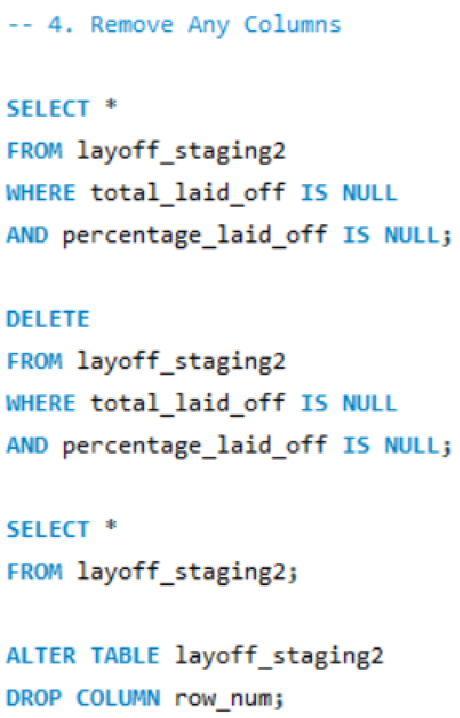
2.Standardising null values



```sql
SELECT stg1.industry, stg2.industry
FROM layoff_staging2 stg1
JOIN layoff_staging2 stg2
    ON stg1.company = stg2.company AND
    stg1.location = stg2.location
WHERE stg1.industry IS NULL OR stg1.industry = ''
AND stg2.industry IS NOT NULL;

UPDATE layoff_staging2 t1
JOIN layoff_staging2 t2
    ON t1.company = t2.company
SET t1.industry = t2.industry
WHERE (t1.industry IS NULL)
AND t2.industry IS NOT NULL;
```

4. Remove Unnecessary Columns

1.Remove unwanted rows and columns



```
-- 4. Remove Any Columns

SELECT *
FROM layoff_staging2
WHERE total_laid_off IS NULL
AND percentage_laid_off IS NULL;

DELETE
FROM layoff_staging2
WHERE total_laid_off IS NULL
AND percentage_laid_off IS NULL;

SELECT *
FROM layoff_staging2;

ALTER TABLE layoff_staging2
DROP COLUMN row_num;
```