

MySQL Advanced

- Lab Solutions -

Challenge 1 - Most Profiting Authors

The logic

- In sales table, a title can appear several times. The royalties need to be calculated for each sale.
- Despite a title can have multiple sales, the advance must be calculated once for each author.
- For each author, we will have:
 - All advances, calculated once for each author
 - All royalties in each sale

Steps

- calculate the royalty for each sale and each author and the advance for each author and publication
- Aggregate the total of royalties for each title and author
- calculate the total profit of each author by aggregating the advances and royalties of each title

Step 1: Royalties and Advance

Royalties: calculated once per sale
(can have multiple rows for the same author-title combination)

```
titles.price * sales.qty *  
titles.royalty / 100 *  
titleauthor.royaltyper / 100
```

Advance: calculated once per title and author combination

```
titles.advance *  
titleauthor.royaltyper / 100
```

- Join all the tables needed
- Select the fields that we need
 - title_id from title / titleauthor / sales
 - au_id from title / titleauthor / sales
 - * sale_id from sales
 - royalty with the formula

this is ready to sum by author

this is not, because we have multiple sales for each title

- Join all the tables needed
- Select the fields that we need
 - title_id from title / titleauthor
 - au_id from title / titleauthor
 - advance with the formula

Step 2: Aggregate royalties

```
sum royalty group by title, author
```

we sum the royalties of all the sales and we leave the earnings for each author and title

* now we don't need the sale_id, because we sum all the sales together

```
NOW WE CAN  
; JOIN ;  
BOTH SELECTS
```

Step 3: Calculate total

Now we can join both selects and create a table that have this columns

```
title_id from any table  
au_id from any table  
advance from the right select  
royalty from the left, the sum
```

remember to select the sum result

Now we can combine both revenues with a "+"

```
=> title_id same  
au_id same  
advance + royalty as total
```

we will get the combination of revenues in a column named "total" for each author and title

finally, we want the earnings of all the titles of an author

```
=> SUM total GROUP BY author  
And we have it!
```

Now we can ORDER and LIMIT if we want to