

DP2 2023-2024
Analysis report

Acme Software Factory



Repository: <https://github.com/rafcasceb/Acme-SF-D03>

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GROUP C1.049

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Executive summary

This report will provide a description of the specific tasks that require further analysis. Please, note that the simpler requirements might not need a special treatment. On the other hand, the more complicated ones may need a deeper analysis to ensure clear understanding.

Please, take into account this document covers the individual requirements for Student #4 exclusively. The team requirements assigned to Student #4 are considered in the group analysis document.

Revision Table

Date	Version	Description of the changes	Sprint
17/04/2024	1.0	<ul style="list-style-type: none">• Executive summary• Introduction• Content• Conclusion• Bibliography	1

Introduction

For the third delivery Student #4 was expected to carry out three mandatory tasks and six optional assignments.

The mandatory tasks requested the implementation of features related to the treatment of sponsorships and invoices by the role sponsor.

The supplementary assignments requested the read operations over sponsorships by any as well as the features related with a sponsor user account. With respect to documents, the Analysis and Planning Report are demanded as usual. Finally, I must produce a Lint Report.

In the document, we'll list the mandatory tasks first, then the optional ones. Each task will have a number, its official description, and a detailed analysis if needed, as mentioned in the Annexes document.

Contents

Mandatory task D03-6:

“Operations by sponsors on sponsorships:

- List the sponsorships that they have created.
- Show the details of their sponsorships.
- Create, update, or delete their sponsorships. Sponsorships can be updated or deleted as long as they have not been published. For a sponsorship to be published, the sum of the total amount of all their invoices must be equal to the amount of the sponsorship.”

Published: Some clarifications must be made regarding the “published” condition. Note that invoices can also be published or not. Then we are left with the following options:

- 1) When a sponsorship is published, if the sum is correct, all the invoices associated with it are published.
 - More complicated, when publishing a sponsorship, if we want the process to be intuitive, we should show each of the non-published invoices and make him/her confirm that everyone is correct (since they were left in draft mode for some reason).
- 2) When computing the total amount of all invoices only the ones published are considered.
 - Simpler, the user only cares if the money amount is correct.
 - What happens with non-published invoices associated to that sponsorship? You can delete or associate them to another sponsorship later.
- 3) You can only publish a sponsorship if all the associated invoices are also published and the money sum is correct.
 - The simplest.
 - More restrictive. Imagine you have some invoices published that already sum up to the required amount, then you are forced to delete or disassociate the non-published ones.

If you look closely, options 2 and 3 are the same, only that 3 is more restrictive. See that 3 forces you to act in the moment while 2 allows you to let the non-published invoices there and take care of them in another moment. Therefore 2 is the best option. Option 1 is just too complex and tedious.

However, after consulting the client it is clear that **option 3 is the correct one**, he clearly stated that in order to publish a sponsorship all invoices must be published.

Please, see the series of post related to this analysis in the subject forum at

https://ev.us.es/webapps/discussionboard/do/message?action=list_messages&course_id= 85092 1&nav=discussion_board&conf_id= 405265 1&forum_id= 234042 1&message_id= 415971 1

Mandatory task D03-7:

“Operations by sponsors on invoices:

- List the invoices in their sponsorships.
- Show the details of their invoices.
- Create and publish an invoice.
- Update or delete an invoice as long as it is not published.”

Published: There are some considerations regarding the publishing conditions. First of all, an invoice can only be published as long as it is associated with a non-published sponsorship. Secondly, you cannot publish an invoice such that it makes the total sum to be greater than the real sponsorship required amount.

On the other hand we have to manage payments in different currencies:

- 1) Apply the following restriction: All invoices must be paid in the same currency as the one in which the value of the Sponsorship was originally set.
 - Calculating the total is straightforward.
 - While possible, it is uncommon to pay for the same service in different currencies.
 - Does not require the consumption of third-party services.
 - Does not allow for payments in different currencies.
 - Once the currency of the Sponsorship is established, it cannot be updated if there is already an Invoice published that uses that currency.
- 2) Allow payments in different currencies.
 - Payments can be made in different currencies.
 - Much more complex computation; all invoices would need to be converted to the same currency.
 - Currency values fluctuate daily, so a static conversion function would not suffice; an API would need to be consumed.
 - Consuming an API may require a token, and there could be a limit on daily requests, which could be inconvenient. Relying on a third-party service for a fundamental function could decrease the reliability of our service.
 - We know that we have an optional task regarding consuming this API. If this task is optional, we deduce that it is not necessary for a mandatory task like this.

I consider Option 1 to be the most appropriate solution because with the simple application of a couple of validations, we address the root of the problem and do not have to worry about the reliability of third-party services or exceeding the request limit to an API.

Moving away slightly from payments, a final issue arises: the deletion of a Sponsorship.

Please, see the full discussion at the subject forum:

https://ev.us.es/webapps/discussionboard/do/message?action=list_messages&course_id= 85092 1&nav=discussion_board&conf_id= 405265 1&forum_id= 234042 1&message_id= 415971 1

Thus, allow me to add these restrictions to the requirement:

“Operations by sponsors on invoices:

- *List the invoices in their sponsorships.*
- *Show the details of their invoices.*
- *Create and publish an invoice.*
- *Update or delete an invoice as long as it is not published. For an invoice to be publish it must be associated to a non-published sponsorship, all invoices quantity must be in the same currency and cannot make the total sum greater than the real required amount.*”

Mandatory task D03-8:

*“Operations by sponsors on sponsor dashboards:
Show their sponsor dashboards.”*

It was assumed that totals, minimum and maximum quantities were integer numbers, while statistic properties, like average or deviation, were clearly real numbers (Doubles).

It must be noted that statistic measures related to money must be classified by currency, otherwise the numbers will become insignificant. We are left with two options here:

- 1) Consider only the default currency, in this case EUR.
 - Requires no changes in the entity nor in the controllers. Only a couple of new repository queries are needed.
 - Simple in general and easy to implement.
 - The client can only see the statistics in the default currency set by the administrator.
- 2) Return the statistics for every different currency, that is, classify sponsorships and invoices depending on the employed currency.
 - Consider all invoices and sponsorships.
 - More complete.
 - More convoluted. The dashboard will have an entry per currency-statistic pair.
 - More cumbersome to implement.
- 3) Money conversion using the API. You can read the pros and cons of this proposal in the previous section.

My proposed solution is option 1, it is the simplest valid solution and, even though we are missing some information, still we are getting some significant statistic measures. On top of that is the least incorrect option, that is, if the client prefers option two is easy to extend proposal 1 to proposal 2 (the other way around means wasted time and effort).

Extra task D03-17:

“Operations by anonymous principals on user accounts:
Sign up to the system and become a sponsor. “

No further analysis required.

Extra task D03-18:

“Operations by sponsors on user accounts:
Update their profiles. “

No further analysis required.

Extra task D03-19:

“Operations by any principals on sponsorships:
• List the sponsorships in the system that are published.
• Show the details of the sponsorships that they can list (excluding their invoices). “

No further analysis required.

Extra task D03-20:

“Produce an analysis report.”

No further analysis required.

Extra task D03-21:

“Produce a planning and progress report.”

No further analysis required.

Extra task D03-22:

“Produce a lint report.”

No further analysis required.

Conclusions

The requirements for delivery three, although straightforward, required some thought on the approach of the business process. I experimented the discovery of errors that should have been detected earlier on the development process. This is not ideal but is normal and sometimes unavoidable.

Bibliography

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