Data distribution

research document

for

HeardIT

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1. Introduction

The purpose of this document is to outline the research that was undertaken to determine the most suitable strategies and processes for handling data by the HeardIT application. The research is split into the following sections *– Main research question*, where the main question is defined, *Sub-questions*, where the sub-question derived from the main questions are defined and answered and *Conclusion*, where the answers to the sub-questions are combined in order to answer the main question. The final section is the *References* section where the sources of the information used during the research are presented.

1. Main question

In this section the main question will be established. In order to complete the research, the main question needs to have a concrete answer. For this reason, it is important to define the main question well. The main question will also allow us to create the sub-questions that will help us answer the main question.

The main research question is:

*What is the most suitable approach for distributing and storing the data used by HeardIT?*

Answering this question will allow us to determine the best way to store and handle the required data for the HeardIT application. In the next section I will establish the sub-questions that were derived from the main question and I will formulate an answer to each of them.

1. Sub-questions
2. What type of data is HeardIT working with?

Choosing the right architecture for a music streaming web-application can be a difficult and complex process. There are many different pre-established architecture design patterns that can be used as the basis of the application. For this reason, I am going to look over my requirements and depending on them make a decision.

Methods used:

* Literature study – this method was used to determine the main architecture design patterns and their use cases and specifications
* Available product analysis – this method was used when researching what design patterns are used and for what kinds of applications they are suitable
* Design-pattern analysis – this method was used to evaluate the different ways I can establish my architecture design

1. What is the most suitable approach for storing and handling the data for the songs?

Now that I have narrowed down my choice for architecture design pattern to either the Layered design or the

Methods used:

* Literature study – this method was used to determine the main advantage and disadvantages of each of the architecture design patterns
* IT architecture sketching – this method was used to evaluate which architecture design would be most suitable to my requirements

1. What is the most suitable approach for storing and handling user data?

Continuing my comparison between the Layered design and the Microservices, this time I am going to compare the

Methods used:

* Literature study – this method was used to determine the maintainability aspects of the two architecture patterns
* IT architecture sketching – this method was used to evaluate which architecture design would be most suitable to my requirements

1. What is the most suitable approach for storing and handling other kinds of needed data?

Continuing my comparison between the Layered design and the Microservices, this time I am going to compare the

Methods used:

* Literature study – this method was used to determine the maintainability aspects of the two architecture patterns
* IT architecture sketching – this method was used to evaluate which architecture design would be most suitable to my requirements

1. Conclusion

To conclude this research, I am going to design the HeardIT application architecture to follow the Microservices architecture design pattern to establish the architecture of the HeardIT application. After carefully considering my options, conducting extensive research into the possible architecture designs that I could follow, I determined that the Microservices design pattern is the most suitable one, due to its scalability, stability, maintainability, cloud native design and security by design aspects that it can provide me.

**References:**

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