UNIVERSITY OF SOUTHERN DENMARK

SOFTWARE ENGINEERING 6. SEMESTER

Datamining and its use

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"Some quote"

- Gruppe 3

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Chapter 1

Introduction

1.1 Motivation

The amount of data being processed around the Internet and within big systems is continuously increasing. This data should be structured and modelled in a way that makes it easily accessible and easy to work with. Handling large amounts of data the right way can prove to be very useful, not only to the company who possess the data, but also to the end users of a product. To achieve this, the art of data mining is very useful. The company Struct A/S [4] has provided us with a software engineering task of creating product recommendations where data mining will create the foundation. This report will address the use of data mining, how to develop a solution that provides the user with intelligent product recommendations, and makes it possible to maintain current and future data. [1]

1.1.1 Data mining

Data mining has become a big part of modern software engineering. Lots of companies tends to store large amount of data. If the data is analyzed properly and put into use, it can create tremendous value to the company as well as its users. In this case Struct has stored information about users visiting their websites. Previously, this data was stored in an unstructured database and not put to use. By processing the data properly, using data mining, it can be structured in a way that makes it useful to the company e.g. product recommendations.

1.1.2 Product recommendation

If an e-commerce company wants to increase its profit, product recommendation has proven to be very beneficial.[5] This is heavily used by multiple companies including the retail giant Amazon.[6] If you can predict what sorts of products your costumer may find useful, additional sales becomes more frequent. Big data sets, like the one provided by Struct A/S, can make it possible to predict customer needs, if the data is processed properly.

Chapter 2

Problem statement

2.1 Problem description

The initial problem/challenge is given to us by the company Struct A/S and is described as follows:

When launching sites, whether it being regular websites or web shops, a lot of user activity is logged. We therefore have a large amount of data associated with each of our sites but do not currently use it.
In the future we would like to be able to use logged data to generate an insight into the user activity on our site and actively use this data to create a personalized experience for the users.

This project handles the initial analysis of the data, storing it in a scalable way and utilizing the data to create features which add value to the company. The focus of the project is data storing, data mining and recommendation algorithms. These methods are used to implement a final software solution capable of storing, organizing and utilizing current as well as new data about the end users. This allows Struct to easily keep their data updated and receive tailored product recommendations for their users.

2.2 Problem statement

The data we were given is in an unstructured format and can not be put to use as it is. This leads to the following problems - structuring and utilizing the data to create a personalized experience for the users, and making the data easily maintainable.
This leads to the following research questions:

- How can you optimally organize, store and access data in a scalable way?
- How can this data be maintained and updated easily after deployment?
- How can you utilize the organized data to generate tailored product recommendations for the end user?

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