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[1]info

Andmejälgija is a protocol developed by Information System Authority (RIA), the purpose of which is to provide a

The purpose of this thesis is to create a mobile application that would notify its users of updates in the access logs,

P170 Computer science, numerical analysis, systems, control

estonianRiiklike andmekogude andmetele juurdepääsu teavitused Eesti e-ID omanikele Käesoleva lõputöö eesmärk

T170 Arvutiteadus, arvutusmeetodid, süsteemid, juhtimine (automaatjuhtimisteooria)

Introduction

In Estonia there are a lot of state databases holding users' data, like Population Registry (*Rahvastikuregister*) and

For the purposes of making the process more transparent, the Estonian Information System Authority (RIA) create

The Data Tracker is a people-oriented service on the state portal *eesti.ee*, which aims to ensure transparency in the

Architecturally, it is a fully distributed system, i.e. the information displayed to the user comes directly from the d

The Data Tracker should display to the individual information about data processing taking place locally in the da

The Data Tracker doesn't notify, however, when the data is accessed by someone. In order to learn about the upda

The primary objective of this thesis is to solve this problem by creating a mobile phone application that would noti

Additionally I would like to examine existing state databases processing people's personal data, including whether t

The protocol

Andmejälgija is a protocol that state databases are responsible for implementing themselves. In order for the datab

X-Road is a REST-based protocol which is used for secure data exchange between Estonian information systems ov

The *Andmejälgija* X-Road interface is expected to have the following endpoints:

`findUsage`

A query searches the data recorder database for usage records that match the constraints given in the input. The o

`usagePeriod`

The time period for which usage information can be requested[?].

`heartbeat`

Requesting the availability status of the tracker's usage information[?].

[H] [width=450px]english/figures/aj$_m$odel.PNGAndmejälgija(DataTracker)systemarchitectureshowingtheinterac

Usage There are several ways for end-users to access their Data Tracker data. State portal *eesti.ee* provides a web-v

Another way to access Data tracker data is through Estonian Population Registry, although, is seems to be Populat

Adoption The current adoption of *Andmejälgija* has some noticeable issues. Very often it is not at all clear why you

There is even an information sheet with recommendations for services implementing the *Andmejälgija* protocol, an

Good practice example:

Data Processing Time	Activity	Party Receiving Personal Data	
13.01.2015 10:20:27	Prescription viewed by doctor; prescription number 1018472350	Doctor Viktor Pihlakas	Example of good data acce
19.01.2018 10:58:23	Individual query for valid driver's licenses through state portal *eesti.ee*	Jaan Kask 32405023456	

Bad practice example:

Data Processing Time	Activity	Party Receiving Personal Data	
13.01.2015 10:20:27	PERSONAL DATA BY PERSONAL CODE	INSTITUTION X	Example of poor data acce
19.01.2018 10:58:23	INDIVIDUAL EXTENDED INFO QUERY BY PERSONAL CODE	FOUNDATION Y	

Apparently, the advice is often ignored, as many institutions tend to follow the bad example in practice. The thesis

Date & Time	Institution	Database	Activity	
02.08.2025 11:15	Health and Welfare Information Systems Centre	Population Registry	INDIVIDUAL EXTENDED INFO QUERY BY PERSONAL CODE	
01.08.2025 22:37	Health and Welfare Information Systems Centre	Population Registry	INDIVIDUAL NAME RETRIEVAL BASED ON PERSONAL CODE	Extract from author

[heading=bibintoc] Glossary

Estonian Government and Technology Terms

Data Tracker - Protocol developed by RIA for tracking personal data access across state databases.

Official Estonian state portal providing access to various government e-services.

Trusted Authentication and Authorization service - Estonian government service that handles initial user authentication

Government Single Sign-On service - manages session state and enables users to access multiple Estonian government e-

Digital patient registry system in Estonia.

Estonian Population Register containing basic demographic information.

The E-File is a central information system that provides an overview of the different phases of criminal, civil, administra

Riigi Infosüsteemi Amet - Information System Authority, the Estonian government agency responsible for information s

Estonian data exchange platform that enables secure data exchange between information systems.

Electronic Identification, Authentication and Trust Services - EU regulation for electronic identification and trust servic

Android Development Terms

Android system service for scheduling operations to be executed at specific times.

Android Jetpack library for deferrable, guaranteed background work. Uses JobScheduler for API 23+, and AlarmManag

Android service that runs in the background but displays a persistent notification to the user, making the user aware of

Android service that runs without user awareness and without displaying notifications. These services are heavily restric

Android component that displays web content within an application.

HTTP client library for Android and Java applications.

Android library for storing typed objects using protocol buffers.

Android power-saving feature that defers background CPU and network activity for applications.

Android Package - file format used to distribute and install applications on Android.

JSON Web Token - method for transmitting information between parties as a signed JSON object.   *License

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