Platform for vitality

Municipality of Eindhoven

Datastic

Minor Data Driven Business Lab

Eindhoven sport

Fontys

Content

Research question

End-users' requirements

Webscraping

Matchmaking

Advice

Research question

How can municipality Eindhoven create a platform with integrated intern and extern data for citizens of Eindhoven to find and fulfil their sport needs with matchmaking?

End user's requirements
What are the end user's requirements for a sports platform?

► Interviews

► Focus group

The MoSCoW Method

Must have
Description
Timetable
Place
Want do you need to bring
Location
Recent activity
Age level
Price
Limit to the amount of people

Should have
First page on Google search results

Personal profile

Share information about recently used data

Let users decide if they want to share their data

Could have
Motivational push notifications

Sport progress

Experience level information about team sport the participants

Won't have

End user's requirements

What are the end user's requirements for a sports platform?

- ▶ Ethical values
- ▶ End user's biases
  - ▶ No added value
  - ▶ It won't work
- ▶ Sport facilitator's biases
  - ▶ No fair use of data
  - ▶ Mandatory participation
- ▶ Municipality's biases
  - ▶ Focus on certain sports
  - ▶ Non-sporters will not use it

End user's requirements

What are the end user's requirements for a sports platform?

- ▶ Law

- ▶ Data protection

- ▶ Usage of personal data

- ▶ Purpose of asked data

- ▶ Prior permission required

- ▶ Privacy statement

Webscraping

"How can sport activities that exist on Eindhoven Sport website be combined?"
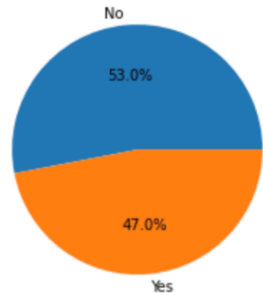
▶ HTML

▶ BeautifulSoup

Webscraping
Content to scrape

▶ 165 Sport providers

▶ Open Activities

Does the website contain activities?

Are the open activities up-to-date?

Yes 52.6%
No 47.4%
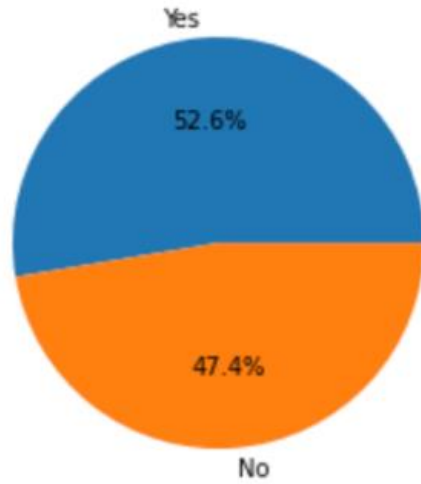
Yes	10
No	9

Is the HTML structure ok?

Yes 70.0%
no 30.0%
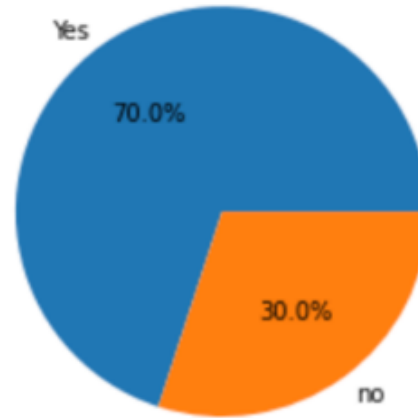
Yes	7
no	3

Webscraping
Content to scrape

Webscraping

Prototype

Webscraping

Legal aspects

- ▶ Hyperlink/Embedding always allowed

- ▶ When copyright, scraping without permission is not allowed (More information→ research report law students

Matchmaking

▶ How can the chosen matchmaking technique be implemented to display the user's sport preferences?

▶ Literature study

1. Forward chaining: a "data-driven" method

2. Backward chaining: a "goal-driven" method

- Rules are easy to make, also for non-technical persons.

- Rules are stored at a centre storage.

- Logic is managed separately from core application logic so it can be managed and reused.

- In rule-engine, we use different pattern matching and conflict resolving algorithms, which give high performance.

- Rules can easily be updated.

- The different applications can use the same rule-engine for the same logic. It increases reusability.

Advantages of rule-engine

Personal data processing

▶ Law students advise - as little personal data as possible must be processed

Sport activity database overview

▶ Mock data

	A	B	C	D	E	F
1	**SportProvider**	**SportCategory**	**Title**	**Date**	**StartTime**	**Location**
2	Gerlach Group	Agility Sport	Gerlach Group Agility Sport Open Activity	30.11.2021	18:00:00	260 Onsgard Road
3	Tromp, Nader and Upton	Agility Sport	Tromp, Nader and Upton Agility Sport Open Activity	27.09.2021	13:00:00	561 Evergreen Park
4	Hilpert Inc	Agility Sport	Hilpert Inc Agility Sport Open Activity	24.09.2021	14:00:00	207 Comanche Plaza
5	Auer-Nader	Agility Sport	Auer-Nader Agility Sport Open Activity	02.12.2021	21:00:00	19 Manitowish Parkway
6	Hammes-Muller	Agility Sport	Hammes-Muller Agility Sport Open Activity	12.09.2021	14:00:00	7509 Dapin Avenue
7	Bergstrom, Reichert and Mertz	Agility Sport	Bergstrom, Reichert and Mertz Agility Sport Open Activity	16.11.2021	19:00:00	930 David Alley
8	Nader-Senger	Agility Sport	Nader-Senger Agility Sport Open Activity	11.09.2021	17:00:00	372 Boyd Lane
9	Collins LLC	Agility Sport	Collins LLC Agility Sport Open Activity	16.10.2021	14:00:00	39 Commercial Alley
10	Hagenes-Wolff	Agility Sport	Hagenes-Wolff Agility Sport Open Activity	02.11.2021	22:00:00	11 Sheridan Drive
11	Fahey, Wyman and Goodwin	Agility Sport	Fahey, Wyman and Goodwin Agility Sport Open Activity	01.12.2021	18:00:00	59 Bartillon Circle
12	Borer, Kuhlman and Jerde	Agility Sport	Borer, Kuhlman and Jerde Agility Sport Open Activity	30.12.2021	17:00:00	9356 Nobel Trail
13	Hudson LLC	Agility Sport	Hudson LLC Agility Sport Open Activity	02.02.2022	14:00:00	8 Dexter Way
14	Monahan-Renner	Agility Sport	Monahan-Renner Agility Sport Open Activity	18.11.2021	22:00:00	01 Maywood Plaza
15	Harris-Ortiz	Agility Sport	Harris-Ortiz Agility Sport Open Activity	09.10.2021	13:00:00	2771 Autumn Leaf Pass
16	Collier-Leffler	Agility Sport	Collier-Leffler Agility Sport Open Activity	31.12.2021	12:00:00	676 Mesta Park
17	Herman, Turner and Cruickshank	Agility Sport	Herman, Turner and Cruickshank Agility Sport Open Activity	10.12.2021	20:00:00	8 Pine View Place
18	Heaney, Grant and Aufderhar	Agility Sport	Heaney, Grant and Aufderhar Agility Sport Open Activity	03.11.2021	21:00:00	2147 Gale Center
19	Nicolas, Quigley and Wintheiser	Athletics	Nicolas, Quigley and Wintheiser Athletics Open Activity	10.11.2021	20:00:00	7 Esch Circle
20	Pfannerstill LLC	Athletics	Pfannerstill LLC Athletics Open Activity	21.12.2021	17:00:00	26748 Oxford Pass
21	Ortiz, Ullrich and Ratke	Athletics	Ortiz, Ullrich and Ratke Athletics Open Activity	11.11.2021	19:00:00	90104 Kennedy Avenue
22	Murazik-Green	Athletics	Murazik-Green Athletics Open Activity	08.09.2021	21:00:00	339 Reinke Crossing
23	Harvey and Sons	Athletics	Harvey and Sons Athletics Open Activity	19.11.2021	21:00:00	3 Bartelt Terrace
24	Cole-O'Keefe	Athletics	Cole-O'Keefe Athletics Open Activity	23.09.2021	16:00:00	58376 Schurz Crossing
25	Huels Inc	Athletics	Huels Inc Athletics Open Activity	20.09.2021	17:00:00	2650 Merrick Center
26	Christiansen, Anderson and Bernier	Athletics	Christiansen, Anderson and Bernier Athletics Open Activity	03.12.2021	17:00:00	84548 Lotheville Terrace
27	Vandervort, Kirlin and Nicolas	Athletics	Vandervort, Kirlin and Nicolas Athletics Open Activity	19.11.2021	18:00:00	24 Spenser Street
28	Barrows, Jenkins and Marks	Athletics	Barrows, Jenkins and Marks Athletics Open Activity	12.11.2021	21:00:00	817 Vernon Lane
29	Reilly, Dare and Wolf	Athletics	Reilly, Dare and Wolf Athletics Open Activity	25.12.2021	14:00:00	92 Stone Corner Circle
30	Krajcik-Dietrich	Athletics	Krajcik-Dietrich Athletics Open Activity	19.10.2021	22:00:00	5623 Valley Edge Avenue

3	Athletics	Individual	Indoor	NotBall	NoSwim	NoBike
4	Ball sport	Teamsport	Outdoor	Ball	NoSwim	NoBike
5	Cardio and Strength training	Individual	Indoor	NotBall	NoSwim	NoBike
6	Climbing and Mountaineering	Individual	Indoor	NotBall	NoSwim	NoBike
7	Combat and Defense Sports	Individual	Indoor	NotBall	NoSwim	NoBike
8	Custom Sports	Individual	Indoor	NotBall	NoSwim	NoBike
9	Cycling	Teamsport	Outdoor	NotBall	NoSwim	Bike
10	Dancing	Individual	Indoor	NotBall	NoSwim	NoBike
11	Fresbee	Teamsport	Outdoor	NotBall	NoSwim	NoBike
12	Gymnastics	Individual	Indoor	NotBall	NoSwim	NoBike
13	Mind Sport	Teamsport	Indoor	NotBall	NoSwim	NoBike
14	Racket and net sports	Individual	Indoor	Ball	NoSwim	NoBike
15	Recreational sports	Individual	Indoor	NotBall	NoSwim	NoBike
16	Scouting	Teamsport	Outdoor	NotBall	NoSwim	NoBike

Sport activity characteristics

Rule engine
prototype demo

Python script
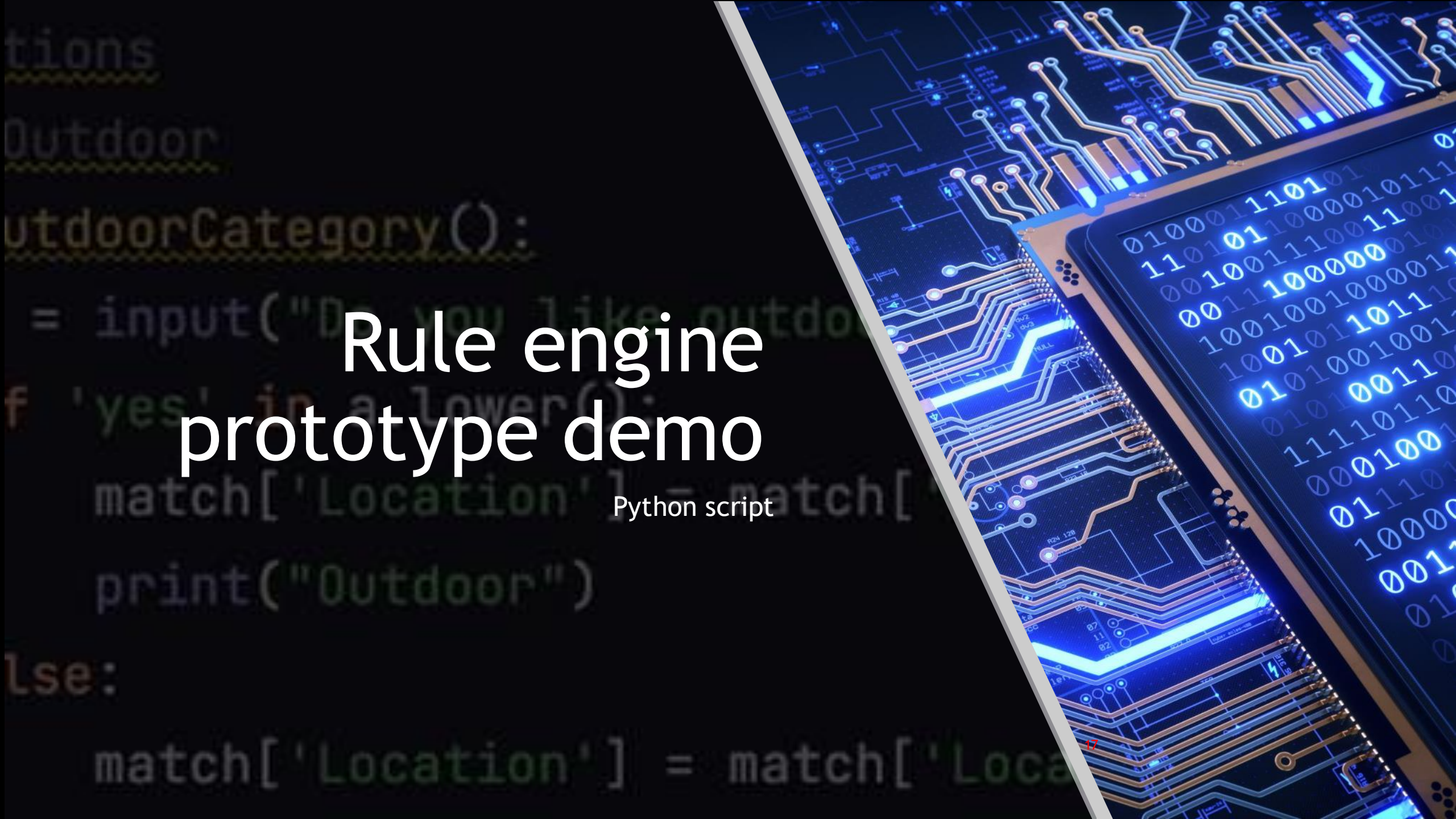
Overall advice

▶ Ethical Advice

   o Technology Impact Cycle Tool (TICT)

▶ Web-scraping Advice

   o Create your own website

   o Ask organizations directly

▶ Matchmaking Advice

   o Data storage

   o Collaborative filtering

Thank you for your attention!