

# HANNE - a Holistic Application for Navigational Knowledge Engineering

<http://aksw.org>  
University of Leipzig

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# Resources

- **Main site for Navigational Knowledge Engineering (NKE):**

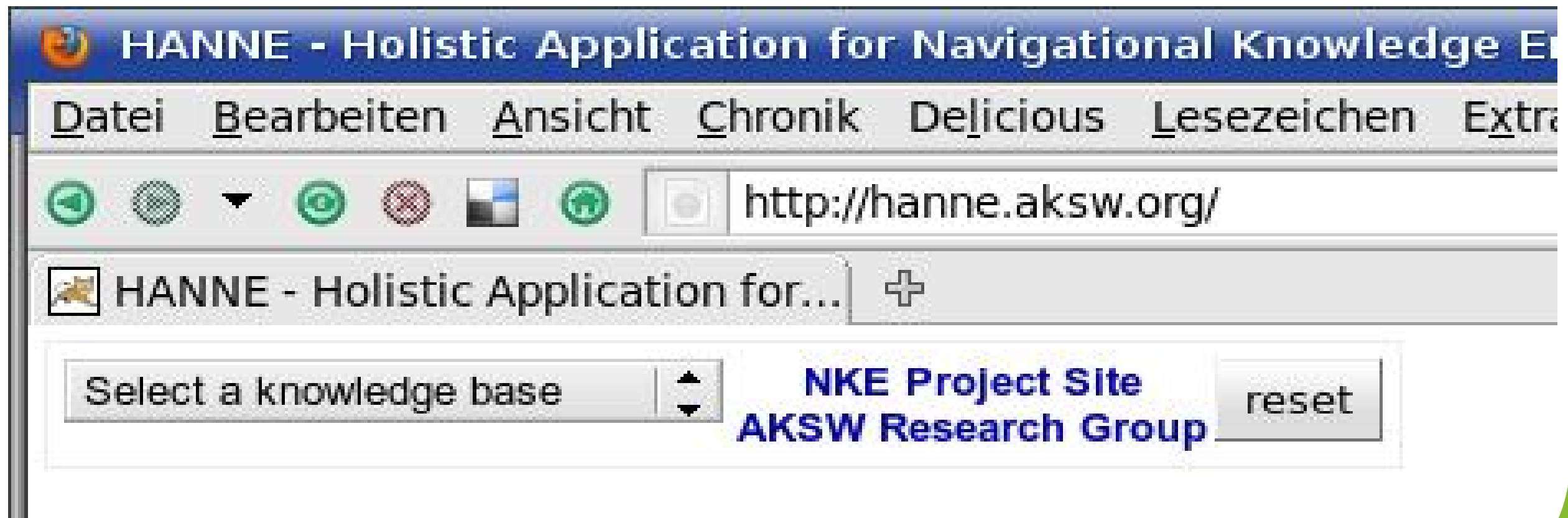
<http://aksw.org/Projects/NKE>

- **Web Demo of HANNE:**

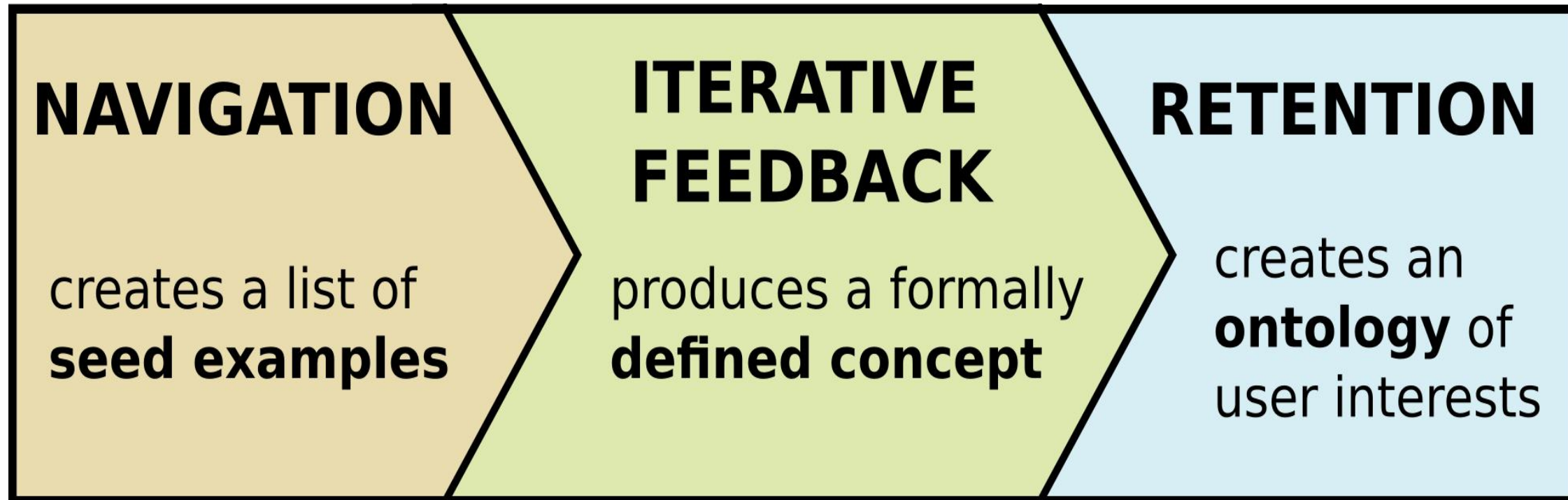
<http://hanne.aksw.org>

# Intro

- **Go to [hanne.aksw.org](http://hanne.aksw.org)**
- **Select a knowledge base**
- **This tutorial will use **DBpedia****



# NKE Methodology



# Entry Point

The screenshot shows the HANNE web application in a Mozilla Firefox browser. The browser's address bar displays 'http://hanne.aksw.org/'. The page title is 'DBpedia - Navigational Knowledge Engineering'. The interface includes a search form on the left, a 'Learned Concept' section, a 'Learning Input' section, and a 'Related concepts' section. The search form is highlighted with a red box and contains three input fields: 'title search', 'abstracts search', and 'category search', each with a 'search' button. Below the search form is a 'Search Results' section with a 'show' button. The 'Learned Concept' section shows 'Nothing learned'. The 'Learning Input' section has a 'start learning (needs 1 pos and 1 neg example)' button and two sections: 'Positive Samples' (empty) and 'Negative Samples' (empty). The 'Related concepts' section has a 'hide' button and a list of concepts: 'Presidents of the US', 'Existing countries', 'gonzi', and 'Soccer teams in Oberliga Sued', each with 'load' and 'export' buttons.

**In HANNE the entry point is a text search**

In HANNE the entry point

## Search

title search	<input type="text"/>	search
abstracts search	<input type="text" value="Football Leipzig"/>	search
category search	<input type="text"/>	search

## Search Results

hide

### Positive Matches

#### Hertha BSC [more...](#)

Hertha Berliner Sport-Club von 1892 (commonly known as Hertha BSC or Hertha Berlin) is a German football club based in Berlin. A founding member of the German Football Association in Leipzig in 1900, the club has a long history as Berlin's best-supported side and competes today in the first division Bundesliga.

#### Lokomotive Leipzig [more...](#)

1. FC Lokomotive Leipzig is a German football club based in the city of Leipzig, Saxony and may be more familiar to many of the country's football fans as the historic side VfB Leipzig, the first national champions of Germany. They currently play in the 5th tier of the German football league system.

#### Zentralstadion [more...](#)

The Zentralstadion (Central Stadium), located in Leipzig, Saxony, Germany, is the premier football facility in the former East Germany. It has served as the home of FC Sachsen Leipzig which will soon make way for RB Leipzig the latest football team property of energy drink maker Red Bull. A new licensing agreement with the company will see the facility renamed.

#### FC Sachsen Leipzig [more...](#)

FC Sachsen Leipzig is a German football club playing in Leipzig, Saxony. The roots of the club go back to 1899 and the founding of Britannia Leipzig. Following World War I, a 1919 merger with FC Hertha 05 Leipzig created Leipziger Sportverein 1899. Another predecessor side, SV Tura Leipzig, was formed in 1932 and just six years later, in 1938, joined with 1899 to create Tura 1899 Leipzig.

## Learned Concept

Nothing learned

## Learning Input

start learning (needs 1 pos and 1 neg example)

Positive Samples

empty

Negative Samples

empty

Choose initial positive and negative examples from the search result.

Here we are looking for Football Clubs in Saxony, a region in Germany.

# Alternatives

- **NKE can be seamlessly integrate into existing software**
- **The next two slides contain two mockups for Wikipedia and Amazon.com**



# Wikipedia Mockup



WIKIPEDIA  
The Free Encyclopedia

- Main page
- Contents
- Featured content
- Current events
- Random article
- Donate to Wikipedia

- Interaction
- Help
- About Wikipedia
- Community portal
- Recent changes
- Contact Wikipedia

► Toolbox

Special page

Soccer Leipzig



## Search results

From Wikipedia, the free encyclopedia

Soccer Leipzig

Search

[Content pages](#) [Multimedia](#) [Help and Project pages](#) [Everything](#) [Advanced](#)

Results **1-20** of **255** for **Soccer Leipzig**

You may create the page "*Soccer Leipzig*", but consider checking the search results below to see whether it is already covered.

For search help, please visit [Help:Searching](#).

### RB Leipzig

RB **Leipzig** is a German football Category:German football clubs | club based in ... External links : [com/soccer/leipzig/de/home.html](#) RB **Leipzig**



...

12 KB (1,560 words) - 16:27, 9 December 2010

### Dieter Kühn

Dieter Kühn (born July 4, 1956 in **Leipzig** , Saxony ) is a former football (**soccer**) player from East Germany , who won the silver medal with ...



3 KB (229 words) - 15:51, 25 October 2010

### 1. FC Lokomotive Leipzig

FC Lokomotive **Leipzig** is a German football club based in the city of **Leipzig** in Saxony ... External links : [abseits-soccer.com/clubs/leipzig...](#)



19 KB (2,679 words) - 00:19, 11 December 2010

### Sebastian Albert

Sebastian Albert (born 26 February 1987 in **Leipzig** ) is a German footballer who ... [com/soccer/leipzig/de/rb-leipzig-team-spieler-detail\\_10.](#)



## Learning Input

start learning

Positive Samples

### RB Leipzig more...

RB Leipzig (RasenBallsport Leipzig e. V. ) is a German football club based in Leipzig, formed in 2009. The club plays in the tier-five NOFV-Oberliga Süd in 2009-10.



### Lokomotive Leipzig more...

1. FC Lokomotive Leipzig is a German football club based in the city of Leipzig, Saxony and may be more familiar to many of the country's football fans as the historic side VfB Leipzig, the first national champions of Germany. They currently play in the 5th tier of the German football league system.



Negative Samples

### Sebastian Albert more...

Sebastian Albert (born 26 February 1987 in Leipzig) is a German footballer who last played for Hansa Rostock.





# Amazon Mockup

amazon.com Hello. Sign in to get personalized recommendations. New customer? Start here. Sponsored by Discover Card

Your Amazon.com Today's Deals Gifts & Wish Lists Gift Cards Your Account Help

Shop All Departments Search External Hard Drives hard drive GO Cart Wish List





Computer & Accessories Brands Bestsellers Accessories Laptops Desktops Drives & Storage Printers & Ink Connected Home Software Deals

Department  
Electronics > Computers & Accessories > Memory Cards & External Storage > External Hard Drives > "hard drive"

Related Searches: external hard drive, internal hard drive, portable hard drive.

Showing 1 - 24 of 1,620 Results Sort by Relevance

**Positive Examples**





Western Digital WD Elements 1 TB USB 2.0 Desktop External Hard Drive WDBAAU0010HBK-NESN  
Buy new: ~~\$129.99~~ **\$72.99**  
11 new from \$72.99  
2 used from \$80.00  
Get it by **Tuesday, Dec 14** if you order in the next **37 hours** and choose one-day shipping.  
Eligible for **FREE** Super Saver Shipping.  
★★★★☆ (794)

Western Digital My Passport Essential SE 1 TB USB 3.0 and USB 2.0 Ultra Portable External Hard Drive WDBACX0010BBK-NESN (Midnight Black)  
Buy new: ~~\$169.99~~ **\$129.99**  
28 new from \$119.00  
Get it by **Tuesday, Dec 14** if you order in the next **38 hours** and choose one-day shipping.  
Eligible for **FREE** Super Saver Shipping.  
★★★★☆ (39)

Seagate Expansion 500 GB USB 2.0 Portable External Hard Drive ST905004EXA101-RK

Toshiba Canvio Plus 500 GB USB 2.0 Portable External Hard Drive E05A050CAU2XK (Raven Black)

**Negative Examples**



Western Digital WD Elements 1 TB USB 2.0 Desktop External Hard Drive WDBAAU0010HBK-NESN

Western Digital My Passport Essential SE 1 TB USB 3.0 and USB 2.0 Ultra Portable External Hard Drive WDBACX0010BBK-NESN (Midnight Black)

**Shipping Option** (What's this?)  
Any Shipping Option  
Free Super Saver Shipping

**Brand**

- Western Digital (177)
- Seagate (136)
- Hitachi (43)
- Toshiba (52)
- Iomega (80)
- LaCie (84)
- Oyen Digital (22)

> See more...

**Avg. Customer Review**  
Any Avg. Customer Review

- ★★★★☆ & Up (403)
- ★★★★☆ & Up (645)
- ★★★★☆ & Up (733)
- ★★★★☆ & Up (765)

**Certifications**

- Energy Star (1)

**Condition**  
Any Condition

- New (1,450)
- Used (360)
- Refurbished (97)

**Price**  
Any Price

- Under \$25 (44)

### Search

title search

abstracts search

category search

### Search Results

hide

**Positive Matches**

**Nicky Adler more...**  
Nicky Adler (born 23 May 1985 in Leipzig) is a German footballer. In 2003 he moved from the amateur ranks into the professional game as a player for 1860 Munich. Adler played twice for the Under-19's national team, eleven times for the Under-20s (scoring four goals in the process) and 68 times in lower-league football before starting out as a senior player. Adler made his debut in the top flight of German football on 1 September 2007 at Energie Cottbus.

**Bernd Stange more...**  
Bernd Stange is a German football manager currently managing Belarus. Stange started playing at an early age and was called into the East German youth team. He continued to play for Chemie Gnaschwitz in the lower divisions until 1965 and later a year at Vorwärts Bautzen before joining HSD DHfK Leipzig, playing until retiring in 1970.

**Mario Strikers Charged more...**  
Mario Strikers Charged, known as Mario Strikers Charged Football in PAL regions and Mario Power Soccer in the Koreas, is a sports video game developed by Canadian developer Next Level Games and published by Nintendo for the Wii. This game was announced at the 2006 Games Convention in Leipzig, Germany as the sequel to Super Mario Strikers for the Nintendo GameCube. It was released on May 25, 2007 in Europe, June 7, 2007 in Australia and July 30, 2007 in North America.

### Learned Concept

Nothing learned

### Learning Input

**Positive Samples**

**Lokomotive Leipzig more...**  
1. FC Lokomotive Leipzig is a German football club in the city of Leipzig, Saxony and many of the country's football fans. VfB Leipzig, the first national champion. They currently play in the 5th tier of the league system.

**FC Sachsen Leipzig more...**  
FC Sachsen Leipzig is a German football club in Leipzig, Saxony. The roots of the club date back to the founding of Britannia Leipzig in 1899 and the founding of Britannia Leipzig in 1899. In World War I, a 1919 merger with FC Hertha Leipzig Sportverein 1899. Another club, FC Tura Leipzig, was formed in 1932 and in 1938, joined with 1899 to create FC Sachsen Leipzig.

**Negative Samples**

**Hertha BSC more...**  
Hertha Berliner Sport-Club von 1892 (commonly known as Hertha BSC or Hertha Berlin) is a German football club based in Berlin. A founding member of the German Football Association in Leipzig in 1900, the club has a long history as Berlin's best-supported side and competes today in the first division Bundesliga.

**Zentralstadion more...**  
The Zentralstadion (Central Stadium), located in Leipzig, Saxony, Germany, is the premier football facility in the former East Germany. It has served as the home of FC Sachsen Leipzig which will soon make way for RB Leipzig the latest football team property of energy drink maker Red Bull. A new licensing agreement with the company will see the facility renamed.

After selecting the initial examples, the machine learning and iterative feedback phase can start

Click „Start Learning“



## Learned Concept

( *dbo:SportsTeam* and  
*dbp:wikiPageUsesTemplate* value  
*Template:Football\_club\_infobox* )  
Acc.: 100%

more  
specific  
more  
general

Matching

Save to  
export

## Learning Input

start learning

Positive Samples

Lokomotive Leipzig [more...](#)

## Related concepts

hide

parallel classes

AmericanFootballTeam, CanadianFootballTeam, HockeyTeam, SoccerClub

super classes

sport teams

SportsTeam

load  
export

## Concepts of other Users

hide

Presidents of the US

Presidents of the US

load  
export  
load

- **The Learned Concept is shown in Manchester OWL Syntax**
- **On the right Related Concepts are shown**
- **The user has two choices:**
  1. Click „Matching“ to retrieve all instances and select more examples
  2. Save the concept for later. Saved concepts are displayed on the right side as navigation suggestions

# Result

**With only 2 positives and 4 negatives it is possible to find 13 more instances, which are football clubs situated close to Saxony, Germany**

## Learning Input

start learning

### Positive Samples

#### Lokomotive Leipzig more...

1. FC Lokomotive Leipzig is a German football club based in the city of Leipzig, Saxony and may be more familiar to many of the country's football fans as the historic side VfB Leipzig, the first national champions of Germany. They currently play in the 5th tier of the German football league system.

x

#### FC Sachsen Leipzig more...

FC Sachsen Leipzig is a German football club playing in Leipzig, Saxony. The roots of the club go back to 1899 and the founding of Britannia Leipzig. Following World War I, a 1919 merger with FC Hertha 05 Leipzig created Leipziger Sportverein 1899. Another predecessor side, SV Tura Leipzig, was formed in 1932 and just six years later, in 1938, joined with 1899 to create Tura 1899 Leipzig.

x

### Negative Samples

#### Hertha BSC more...

Hertha Berliner Sport-Club von 1892 (commonly known as Hertha BSC or Hertha Berlin) is a German football club based in Berlin. A founding member of the German Football Association in Leipzig in 1900, the club has a long history as Berlin's best-supported side and competes today in the first division Bundesliga.

x

#### Zentralstadion more...

The Zentralstadion (Central Stadium), located in Leipzig, Saxony, Germany, is the premier football facility in the former East Germany. It has served as the home of FC Sachsen Leipzig which will soon make way for RB Leipzig the latest football team property of energy drink maker Red Bull. A new licensing agreement with the company will see the facility renamed.

x

#### AZ (football club) more...

AZ, an acronym for Alkmaar Zaanstreek, is a football club from the city of Alkmaar, Netherlands. They are the current Dutch Eredivisie champions.

x

#### Charlton Athletic F.C. more...

Charlton Athletic Football Club (also known as The Addicks) is a professional association football club based in Charlton, in the London Borough of Greenwich. The club was founded on 9 June 1905, when a number of youth clubs in the South-East London area, including East Street Mission and Blundell Mission, combined to form Charlton Athletic Football Club.

x

## Classified Instances

13 instances

hide (displaying result 1-13) -50 +50

#### FSV Zwickau more...

FSV Zwickau is a German football club located in Zwickau, Saxony. Today's club claims as part of its complex heritage sides that were East Germany's first champions: 1948 Ostzone winners SG Planitz and 1950 DDR-Oberliga champions ZSG Horch Zwickau.

+ -

#### 1. FC Gera 03 more...

1. FC Gera 03 is a German football club located in Gera, Thuringia.

+ -

#### SC Borea Dresden more...

SC Borea Dresden are a German football club from the city of Dresden, Saxony. The club dropped the name FV Dresden-Nord on July 1, 2007 and adopted its current name to help encourage new sponsorship support. Boreas is the Greek god of the North Wind.

+ -

#### Budissa Bautzen more...

Budissa Bautzen is a German football club from Bautzen, Saxony. Founded as Fußball Klub Budissa Bautzen on 24 May 1904, the club was part of East German competition after World War II.

+ -

#### VfB Auerbach more...

VfB Auerbach is a German football club from the city of Auerbach, Saxony. The club also has a tennis department.

+ -

#### FC Eilenburg more...

FC Eilenburg is a German football club from the city of Eilenburg, Saxony. The association was created January 1, 1994 as the successor side to Sportverein Mörbitz. The new club joined the Landesliga Sachsen (V) on the strength of SV's Bezirksliga Sachsen (VI) title. A poor 13th place finish immediately returned the side to sixth tier play where they would remain for three seasons.

+ -

#### VfB Germania Halberstadt more...

VfB Germania Halberstadt is a German football club from Halberstadt, Saxony-Anhalt.

+ -

#### ZFC Meuselwitz more...

Zipsendorfer Fußballclub Meuselwitz is a German football club from Meuselwitz, Thuringia.

+ -

#### VfB Pößneck more...

VfB Pößneck is a German football club from the city of Pößneck, Thuringia with a membership of roughly 400.

+ -

#### SSV Markranstädt more...

SSV Markranstädt is a German football club from the city of Markranstädt, Saxony near Leipzig. It is

+ -