#### QUESTION ANSWERING OVER LINKED DATA

# QALD-2 Open Challenge Test phase: Evaluation results

Workshop website: http://www.sc.cit-ec.uni-bielefeld.de/ild/

#### Test questions:

- DBpedia: http://greententacle.techfak.uni-bielefeld.de/~cunger/qald/2/dbpedia-test-questions.xml
- MusicBrainz: http://greententacle.techfak.uni-bielefeld.de/~cunger/qald/2/musicbrainz-test-questions.xml

#### Results for DBpedia:

	total	answered	$\operatorname{right}$	partially right	precision	recall	f-measure
SemSeK	100	80	32	7	0.44	0.48	0.46
Alexandria	100	25	5	10	0.43	0.46	0.45
MHE	100	97	30	12	0.36	0.4	0.38
QAKis	100	35	11	4	0.39	0.37	0.38

On the following pages, you find the detailed results of all participating systems.

# SemSeK (DBpedia)

	id	question	precision	recall	f-measure	<u> </u>
	2	Who was the successor of John F. Kennedy?	1	1	1	
	3	Who is the mayor of Berlin?	1	1	1	
	4	How many students does the Free University of Amsterdam have?	1	1	1	
	5	What is the second highest mountain on Earth?	0	0	0	
	6	Give me all professional skateboarders from Sweden.	0	0	0	
	7	When was Alberta admitted as province?	0	0	0	
	8	To which countries does the Himalayas extend?	1	1	1	
	11	Who is the Formula 1 race driver with the most races?	0	0	0	
	13	Who is the youngest player in the Premier League?	0	0	0	
	14	Give me all members of The Prodigy.	1	1	1	
	17	Give me all cars that are produced in Germany.	0.33333	0.00353	0.00699	
	19	Give me all people that were born in Vienna and died in Berlin.	0	0	0	
	20	How tall is Michael Jordan?	1	1	1	
	21	What is the capital of Canada?	1	1	1	
	22	Who is the governor of Texas?	1	1	1	
	24	Who was the father of Queen Elizabeth II?	1	1	1	
	26	How many official languages are spoken on the Seychelles?	0	0	0	
	28	Give me all movies directed by Francis Ford Coppola.	0.96667	1	0.98305	
29		ve me all actors starring in movies directed by and starring William S	Shatner.	0	0	0
30	Wh	nat is the birth name of Angela Merkel?		1	1	1
31		ve me all current Methodist national leaders.		0	0	0
32		w often did Nicole Kidman marry?		0	0	0
33		we me all Australian nonprofit organizations.		0	0	0
34		which military conflicts did Lawrence of Arabia participate?		0	0	0
35		no developed Skype?		1	1	1
37		ve me all sister cities of Brno.		0	0	0
38		w many inhabitants does Maribor have?		0	0	0
39		re me all companies in Munich.		0	0	0
41		no founded Intel?		1	1	1
42		no is the husband of Amanda Palmer?		1	1	1
43		we me all breeds of the German Shepherd dog.		1	1	1
44		nich cities does the Weser flow through?		0	0	0
45		nich countries are connected by the Rhine?		0	0	0
46		nich professional surfers were born on the Philippines?		0	0	0
47		nat is the average temperature on Hawaii?		0	0	0
48		which UK city are the headquarters of the MI6?		0.5	1	0.66667
49		nich other weapons did the designer of the Uzi develop?		0	0	0
50		s the Cuban Missile Crisis earlier than the Bay of Pigs Invasion?		0	0	0
53		nat is the ruling party in Lisbon?		1	1	1
54		nat are the nicknames of San Francisco?		1	1	1
55		nich Greek goddesses dwelt on Mount Olympus?		0	0	0
56		nen were the Hells Angels founded?		1	1	1
57		re me the Apollo 14 astronauts.		0	0	0
58		nat is the time zone of Salt Lake City?		1	1	1
59	Wh	nich U.S. states are in the same timezone as Utah?		0	0	0

60	Give me a list of all lakes in Denmark.	0	0	0
62	Did Socrates influence Aristotle?	0	0	0
63	Give me all Argentine films.	0	0	0
64	Give me all launch pads operated by NASA.	0.72727	1	0.8421
65	Which instruments did John Lennon play?	0.21429	1	0.35295
66	Which ships were called after Benjamin Franklin?	1	1	1
67	Who are the parents of the wife of Juan Carlos I?	1	1	1
68	How many employees does Google have?	1	1	1
69	Did Tesla win a nobel prize in physics?	0	0	0
70	Is Michelle Obama the wife of Barack Obama?	0	0	0
71	When was the Statue of Liberty built?	0	0	0
72	In which U.S. state is Area 51 located?	0	0	0
73	How many children did Benjamin Franklin have?	0	0	0
74	When did Michael Jackson die?	1	1	1
76	List the children of Margaret Thatcher.	1	1	1
78	Was Margaret Thatcher a chemist?	0	0	0
79	Was Dutch Schultz a jew?	0	0	0
80	Give me all books by William Goldman with more than 300 pages.	0	0	0
81	Which books by Kerouac were published by Viking Press?	0.01366	1	0.02695
83	How high is the Mount Everest?	1	1	1
84	Who created the comic Captain America?	1	1	1
85	How many people live in the capital of Australia?	1	1	1
86	What is the largest city in Australia?	1	1	1
87	Who composed the music for Harold and Maude?	1	1	1
88	Which films starring Clint Eastwood did he direct himself?	0.42553	1	0.59701
90	Where is the residence of the prime minister of Spain?	0	0	0
93	Which movies did Sam Raimi direct after Army of Darkness?	0	0	0
94	What is the founding year of the brewery that produces Pilsner Urquell?	0	0	0
95	Who wrote the lyrics for the Polish national anthem?	1	1	1
96	Give me all B-sides of the Ramones.	0	0	0
97	Who painted The Storm on the Sea of Galilee?	1	1	1
98	Which country does the creator of Miffy come from?	1	1	1
99	For which label did Elvis record his first album?	0	0	0
100	Who produces Orangina?	1	1	1

### Alexandria (DBpedia)

id	question	precision	recall	f-measure
1	Welche deutschen Staedte haben mehr als 250000 Einwohner?	0.61111	0.88	0.72131
6	Gib mir alle schwedischen Skateboarder.	0	0	0
8	In welchen Laendern liegt der Himalaya?	0.71429	0.83333	0.76923
14	Gib mir alle Mitglieder von Prodigy.	0.5	0.66667	0.57143
15	Welches ist der laengste Fluss?	0	0	0
19	Wer ist in Wien geboren und in Berlin gestorben?	0.26316	0.83333	0.4
20	Wie gross ist Michael Jordan?	0	0	0
24	Wer war der Vater von Queen Elizabeth II?	1	1	1
26	Wieviele Sprachen werden in den Seychellen gesprochen?	0	0	0
28	Welche Filme wurden von Francis Ford Coppola gedreht?	0.5625	0.62069	0.59016
34	An welchen militaerischen Auseinandersetzungen nahm T. E. Lawrence teil?	1	0.1	0.18182
38	Wieviele Einwohner hat Maribor?	0	0	0
42	Wer ist der Ehemann von Amanda Palmer?	1	1	1
44	Durch welche Staedte fliesst die Weser?	0	0	0
45	Durch welche Laender fliesst der "Rhein"?	0.75	0.6	0.66667
46	Welche Surfer sind in den Philippinen geboren?	0	0	0
51	Welche Inseln liegen in den Niederlanden und gehoeren zu den Friesischen Inseln?	0	0	0
57	Welche Astronauten nahmen an Apollo 14 teil?	0.66667	0.66667	0.66667
60	Gib mir alle Seen in Daenemark.	0.5	0.4	0.44444
65	Welche Instrumente hat John Lennon gespielt?	0	0	0
68	Wieviele Angestellte hat Google?	0.25	1	0.4
69	Erhielt Tesla den Nobelpreis fuer Physik?	1	1	1
70	Ist Michelle Obama die Frau von Barack Obama?	1	1	1
71	Wann wurde die Freiheitsstatue erbaut?	0	0	0
72	In welchem U.SBundesstaat befindet sich die Area 51?	1	1	1

### MHE (DBpedia)

id	question	precision	recall	f-measure
1	Which German cities have more than 250000 inhabitants?	0	0	0
2	Who was the successor of John F. Kennedy?	1	1	1
3	Who is the mayor of Berlin?	1	1	1
4	How many students does the Free University in Amsterdam have?	0	0	0
5	What is the second highest mountain on Earth?	0.33333	1	0.5
6	Give me all professional skateboarders from Sweden.	0	0	0
8	To which countries does the Himalayan mountain system extend?	0	0	0
9	Give me a list of all trumpet players that were bandleaders.	0	0	0
10	What is the total amount of men and women serving in the FDNY?	0	0	0
11	Who is the Formula 1 race driver with the most races?	0	0	0
12	Give me all world heritage sites designated within the past five years.	0	0	0
13	Who is the youngest player in the Premier League?	0	0	0
14	Give me all members of Prodigy.	1	1	1
15	What is the longest river?	0	0	0
16	Does the new Battlestar Galactica series have more episodes than the old one?	0	0	0
17 19	Give me all cars that are produced in Germany.	0	0	0
20	Give me all people that were born in Vienna and died in Berlin. How tall is Michael Jordan?	$0 \\ 1$	0 $1$	$0 \\ 1$
$\frac{20}{21}$	What is the capital of Canada?	1	1	1
$\frac{21}{22}$	Who is the governor of Texas?	0.02632	1	0.05129
23	Do Harry and William, Princes of Wales, have the same mother?	0.02032	0	0.00123
$\frac{23}{24}$	Who was the father of Queen Elizabeth II?	1	1	1
25	Which U.S. state has been admitted latest?	0	0	0
26	How many official languages are spoken on the Seychelles?	1	1	1
28	Give me all movies directed by Francis Ford Coppola.	0.96429	0.93103	0.94737
29	Give me all actors starring in movies directed by and starring William Shatner.	0.28571	0.15385	0.2
30	What is the birth name of Angela Merkel?	1	1	1
31	Give me all current Methodist national leaders.	0.00388	0.5	0.0077
32	How often did Nicole Kidman marry?	1	1	1
33	Give me all Australian nonprofit organizations.	0	0	0
34	In which military conflicts did Lawrence of Arabia participate?	0.75	0.3	0.42857
35	Who developed Skype?	1	1	1
36	What is the melting point of copper?	0	0	0
37	Give me all sister cities of Brno.	0	0	0
38	How many inhabitants does Maribor have?	0	0	0
39	Give me all companies in Munich.	0.91429	0.9697	
40	List all boardgames by GMT.	0	0	0
41	Who founded Intel?	0	0	0
42	Who is the husband of Amanda Palmer?	1	1	1
43	Give me all breeds of the German Shepherd dog.	0	0	0
$\frac{44}{45}$	Which cities does the Weser flow through? Which countries are connected by the Phine?	$\frac{1}{0}$	$\frac{1}{0}$	$\frac{1}{0}$
$\frac{45}{46}$	Which countries are connected by the Rhine? Which professional surfers were born on the Philippines?	0.02941	-	0.05714
$\frac{40}{47}$	What is the average temperature on Hawaii?	0.02941	$\frac{1}{0}$	0.03714
48	In which UK city are the headquarters of the MI6?	1	1	1
40	in which or city are the headquarters of the witt.	1	1	1

49	Which other weapons did the designer of the Uzi develop?	0	0	0
50	Was the Cuban Missile Crisis earlier than the Bay of Pigs Invasion?	0	0	0
51	Give me all Frisian islands that belong to the Netherlands.	0	0	0
52	Who invented the zipper?	0	0	0
53	What is the ruling party in Lisbon?	0	0	0
54	What are the nicknames of San Francisco?	1	1	1
55	Which Greek goddesses dwelt on Mount Olympus?	0	0	0
56	When were the Hells Angels founded?	1	1	1
57	Give me the Apollo 14 astronauts.	0.5	1	0.66667
58	What is the time zone of Salt Lake City?	0	0	0
59	Which U.S. states are in the same timezone as Utah?	0	0	0
60	Give me a list of all lakes in Denmark.	0.75	0.6	0.66667
61	How many space missions have there been?	0	0	0
62	Did Socrates influence Aristotle?	0	0	0
63	Give me all Argentine films.	0	0	0
64	Give me all launch pads operated by NASA.	1	1	1
65	Which instruments did John Lennon play?	0	0	0
66	Which ships were called after Benjamin Franklin?	0	0	0
67	Who are the parents of the wife of Juan Carlos I?	1	1	1
68	How many employees does Google have?	1	1	1
69	Did Tesla win a nobel prize in physics?	1	1	1
70	Is Michelle Obama the wife of Barack Obama?	1	1	1
71	When was the Statue of Liberty built?	0	0	0
72	In which U.S. state is Area 51 located?	1	1	1
73	How many children did Benjamin Franklin have?	1	1	1
74	When did Michael Jackson die?	1	1	1
75	Which daughters of British earls died in the same place they were born in?	0	0	0
76	List the children of Margaret Thatcher.	1	1	1
77	Who was called Scarface?	0	0	0
78	Was Margaret Thatcher a chemist?	0	0	0
79	Was Dutch Schultz a jew?	1	1	1
80	Give me all books by William Goldman with more than 300 pages.	0.66667	1	0.8
81	Which books by Kerouac were published by Viking Press?	0.01081	0.8	0.02133
82	Give me a list of all American inventions.	0	0	0
83	How high is the Mount Everest?	1	1	1
84	Who created the comic Captain America?	0	0	0
85	How many people live in the capital of Australia?	1	1	1
86	What is the largest city in Australia?	1	1	1
88	Which films starring Clint Eastwood did he direct himself?	0	0	0
89	In which city was the former Dutch queen Juliana buried?	1	1	1
90	Where is the residence of the prime minister of Spain?	0	0	0
91	Which U.S. State has the abbreviation MN?	0	0	0
92	Show me all songs from Bruce Springsteen released between 1980 and 1990.	0	0	0
93	Which movies did Sam Raimi direct after Army of Darkness?	0	0	0
94	What is the founding year of the brewery that produces Pilsner Urquell?	0	0	0
95	Who wrote the lyrics for the Polish national anthem?	0	0	0
96	Give me all B-sides of the Ramones.	0	0	0
97	Who painted The Storm on the Sea of Galilee?	0	0	0
98	Which country does the creator of Miffy come from?	0	0	0
99	For which label did Elvis record his first album?	0	0	0
00		V	J	V

100 Who produces Orangina?

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# QAKis (DBpedia)

id	question	precision	recall	f-measure
2	Who was the successor of John F. Kennedy?	1	1	1
3	Who is the mayor of Berlin?	0	0	0
17	Give me all cars that are produced in Germany.	0.61165	0.44523	0.51534
19	Give me all people that were born in Vienna and died in Berlin.	0.00976	1	0.01933
20	How tall is Michael Jordan?	1	1	1
21	What is the capital of Canada?	0	0	0
22	Who is the governor of Texas?	0	0	0
24	Who was the father of Queen Elizabeth II?	0	0	0
29	Give me all actors starring in movies directed by and starring William Shatner.	0	0	0
30	What is the birth name of Angela Merkel?	0	0	0
34	In which military conflicts did Lawrence of Arabia participate?	0	0	0
35	Who developed Skype?	1	1	1
39	Give me all companies in Munich.	1	0.35354	0.52239
41	Who founded Intel?	0	0	0
42	Who is the husband of Amanda Palmer?	1	1	1
44	Which cities does the Weser flow through?	1	1	1
47	What is the average temperature on Hawaii?	0	0	0
48	In which UK city are the headquarters of the MI6?	0	0	0
53	What is the ruling party in Lisbon?	0	0	0
54	What are the nicknames of San Francisco?	0	0	0
57	Give me the Apollo 14 astronauts.	0	0	0
58	What is the time zone of Salt Lake City?	1	1	1
62	Did Socrates influence Aristotle?	0	0	0
65	Which instruments did John Lennon play?	1	1	1
67	Who are the parents of the wife of Juan Carlos I?	0	0	0
68	How many employees does Google have?	1	1	1
70	Is Michelle Obama the wife of Barack Obama?	0	0	0
75	Which daughters of British earls died in the same place they were born in?	0	0	0
76	List the children of Margaret Thatcher.	1	1	1
80	Give me all books by William Goldman with more than 300 pages.	0	0	0
86	What is the largest city in Australia?	1	1	1
88	Which films starring Clint Eastwood did he direct himself?	0.42553	1	0.59701
92	Show me all songs from Bruce Springsteen released between 1980 and 1990.	0	0	0
99	For which label did Elvis record his first album?	0	0	0
100	Who produces Orangina?	1	1	1