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A Benchmark Suite for Template Detection and Content Extraction^{*}

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Abstract. Template detection and content extraction are two of the main areas of information retrieval applied to the Web. They perform different analyses over the structure and content of webpages to extract some part of the document. However, their objective is different. While template detection identifies the template of a webpage (usually comparing with other webpages of the same website), content extraction identifies the main content of the webpage discarding the other part. Therefore, they are somehow complementary, because the main content is not part of the template. It has been measured that templates represent between 40% and 50% of data on the Web. Therefore, identifying templates is essential for indexing tasks because templates usually contain irrelevant information such as advertisements, menus and banners. Processing and storing this information is likely to lead to a waste of resources (storage space, bandwidth, etc.). Similarly, identifying the main content is essential for many information retrieval tasks. In this paper, we present a benchmark suite to test different approaches for template detection and content extraction. The suite is public, and it contains real heterogeneous webpages that have been labelled so that different techniques can be suitable (and automatically) compared.

1 Introduction

Template extraction is an important tool for website developers, and also for website analyzers such as crawlers. Content extraction is essential for many information processing tasks applied to webpages. In the last decade, there have been important advances that produced several techniques for both disciplines. Hybrid methods that exploit the strong points of several techniques have been defined too. In order to test, compare and tune these techniques, researchers need:

- collections of benchmarks that are heterogeneous (to ensure generality of the techniques) and

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- a gold standard (to ensure the same evaluation criteria).

A benchmark suite is essential to measure the performance of these techniques, and to compare them with previous approaches. Benchmark suites are used in the testing phase and in the evaluation phase. The testing phase allows developers to optimize the techniques by adjusting parameters. Once the technique has been tuned, the evaluation phase allows us to know its performance with objective measures. It is obvious that the set of benchmarks used in the testing phase cannot be used in the evaluation phase, thus, they need disjoint sets of webpages.

In this paper we present a benchmark suite together with a gold standard that can be used for template detection, content extraction and menu detection. All benchmarks have been labelled so that every HTML element of the webpages indicates whether it should be classified as main content or not, and whether it should be classified as template or not. In addition, the main menu of the webpages has also been labelled. The suite also incorporates scripts to automatize the benchmarking process.

This suite has been developed as the result of a research project. We developed a new technique for content extraction [4] that was later adapted for template detection [2]. In the evaluation phase, our initial intention was to use a public benchmark suite. We first tried to use the CleanEval [3] suite of content extraction benchmarks, because it has been widely used in the literature. Unfortunately, it is not prepared for template detection. Then, we contacted the authors of other techniques that had already evaluated their techniques. However, we could not use these benchmarks due to privacy (they belong to a company or project whose results were not shared), copyright (they were not publicly available) or unavailability (they had been lost). Finally, we decided to build our own benchmark suite and make it free and publicly available. Later, we developed a new menu detection technique [1], so we decided to update the suite by labelling the nodes that represent the main menu of the website. Hence, we included 25 new benchmarks, for a total of 65. Along the last two years we have doubled the number of benchmarks, thus our benchmark suite is now formed from 130 websites. The rest of this paper presents that benchmark suite.

2 The TECO Benchmark Suite

TECO (TEmplate detection and COntent extraction benchmarks suite) was created as a benchmark suite specifically designed for template detection and content extraction. It can be used for testing and evaluation of these techniques, and it is formed from 65 real websites downloaded from Internet. We selected heterogeneous websites such as blogs, companies, forums, personal websites, sports websites, newspapers, etc. Some of the websites are well known, like the BBC website or the FIFA website, and others are less known like personal blogs or small companies websites. The downloading of the webpages was done in some cases using the OS X software SiteSucker, and in other cases using the Linux command `wget`.

It is important to know how the websites were downloaded and stored, so that other researchers can increase the suite if it is needed. The following command downloads a website from the Linux terminal using the `wget` command:

```
$ wget --convert-links --no-clobber --random-wait -r 3 -p -E -e
robots=off -U mozilla http://www.example.org
```

The meaning of the flags used is:

- `--convert-links`: Converts links so they can work locally.
- `--no-clobber`: Do not overwrite any existing file.
- `--random-wait`: Random waits between downloads.
- `-r 3`: Recursive downloading up to 3 levels of links.
- `-p`: Downloads everything.
- `-e robots=off`: Act as not being a robot.
- `-E`: Get the right file extension.
- `-U mozilla`: Identify as a Mozilla browser.

Each benchmark is composed of:

- A principal webpage, called *key page*. It is the target webpage from which the techniques should extract the main content or the template—note that it is not necessarily the main webpage of the website (e.g., `index.html`)—.
- A set of webpages that belong to the same website as the key page. This set contains all those webpages that are linked by the key page, and also the webpages linked by them.

2.1 Producing the gold standard

The suite comes with a gold standard that can be used as a reference to compare different techniques. The gold standard specifies for each key page what parts form the template. This is indicated in the own webpage by using HTML classes that indicate what elements are classified as *notTemplate*. It has been produced manually by careful inspection of the websites and mixing the opinion of several people.

In particular, once all the websites were downloaded (the key page and two levels of linked webpages in the same domain), four different engineers did the following independently:

- They manually explored the key page and the webpages accessible from it to decide what part of the webpage is the template and what part is the main content.
- They printed the template and the main content of the webpage.

Then, the four engineers met and performed again these two actions but now all together sharing their individual opinions. Using the results of this agreement, each website was prepared for both, template extraction and content detection. On the one hand, all elements from the key page not belonging to the template were included in a HTML class called *TECO_notTemplate*. This way, a template

extraction tool can automatically compare its output with the nodes not belonging to the *TECO_notTemplate* class. On the other hand, all elements belonging to the main content were included in an HTML class called *TECO_mainContent*. Therefore, a content extraction tool can easily compare its output with the nodes belonging to that class. In addition, the node that represents the main menu of the webpage was included in an HTML class called *TECO_mainMenu*. Consequently, a menu extraction tool can compare its output with the nodes belonging to that class.

2.2 Benchmark details

A classification of the benchmarks is important and useful depending on the application and technique that is being fed with them. We provide different classifications according to the purpose and properties of the benchmarks. First, all benchmarks have been classified into five groups:

Companies / Shops, Forums / Social, Personal websites / Blogs,
Media / Communication, Institutions / Associations.

Table 1 shows this classification together with the URLs from which we extracted the benchmarks.

Table 2 shows some properties of the benchmarks. Here, column **Nodes** indicates the total number of DOM nodes in the key page, column **T. Nodes** shows the number of DOM nodes that belong to the template and column **M.C. Nodes** refers to the number of DOM nodes that belong to the main content. Note that these values are not necessarily complementary. I.e., many webpages contain DOM nodes that do not belong to the main content nor to the template. For instance, usually webpages contain irrelevant (non-main content) information that only appears in that webpage, such as submenus, blocks from social networks, sliders, etc.

2.3 Guidelines for using the suite

2.3.1 Downloading and configuring the suite

TECO is freely distributed and can be downloaded from the URL:

<http://www.dsic.upv.es/~jsilva/retrieval/teco>

After downloading the suite, a directory that contains 130 folders, one for each website, is created. Table 3 shows the path to the key page of each benchmark.

2.3.2 Rules for using the suite and report

All researchers and developers that use TECO must follow two basic principles:

1. They must publish their results so that they are publicly available.
2. They must provide enough information so that anyone can easily duplicate their experiments.

Table 1: Sources of the benchmarks

Website type	Original URL of the webpage
Forums / Social	es.sharelatex.com/learn/Uploading_a_project github.com/DawidStankiewicz/forum forum.skyscraperpage.com en.citizendium.org www.filmaffinity.com/es/ stackoverflow.com www.meneame.net/faq-es/ www.strangehorizons.com/2004/20040906/greenglass-f.shtml www.accountkiller.com/en/delete-activision-account study.com/learn/science-questions-and-answers.html c.mi.com/it/ frances.forosactivos.net alumni.harvard.edu/help/message-board/ www.spacetimestudios.com/forumdisplay.php?29-Websites-and-Forum-Discussion www.gimpforum.de www.emaildiscussions.com forums.debian.net/viewforum.php?f=5 forums.mozillazine.org/viewforum.php?f=23 forums.tomsguide.com/forums/laptop-general-discussion.15/ forums.mysql.com/list.php?21 lawstudents.ca/forums.html www.japanesepod101.com/forum/viewforum.php?f=26 forums.opera.com forums.linuxmint.com/viewforum.php?f=72 www.wysiwygwebbuilder.com/forum/viewforum.php?f=10 communities.apple.com/es/community/mac_os/os_x_el_capitan.html
Personal / Blogs	www.cocinaconmarta.com/2015/04/empanadillas-chinas-de-gambas-y-verduras.html www.javiercelaya.es markahall.blogspot.com.es www.trendencias.com users.dsic.upv.es/~dinsa/en/ googleblog.blogspot.com.es www.robyncarr.com/qa/ www.annmalaspina.com users.dsic.upv.es/~jsilva/wvw2013/index2.html foodsense.is/a-list.html diarium.usal.es/lguich/pagina-personal-de-luis-arturo-guichard/ www.folj.com/puzzles/difficult-logic-problems.htm oneminutelist.com/16-browser-alternatives-to-desktop-programs/ artsonline.uwaterloo.ca/jburbidg/index.html benjamincongdon.me/blog.html michael.tsikerdekis.com www.beorganisee.com/repandre-en-main-le-nettoyage/ www.danielgrindrod.com/about.html ofdollarsanddata.com blog.mint.com/updates/enter-our-newdecadewyou-meme-sweepstakes-for-a-chance-to-win-5000/ elainesir.com/best-korean-beauty-blogs-bloggers-follow/ www.vindame.com.br/semana-riesling/uva-riesling/ www.rosamontero.es/obra-rosa-montero.html www.almezzar.com/libros/literatura-infantil/a-partir-de-4-anos/ johnboyne.com/about/ johngardnerathome.info
Companies / Shops	www.eclipse.org www.swimmingpool.com www.emmaclothes.com www.arduino.cc/en/Main/Software/ today.java.net/pub/a/today/2004/07/06/3ddesktop.html clotheshor.se ruzafagallery.com/calendario/ www.raspberrypi.org/resources/teach/ doodle.com/online-calendar/ www.newprosoft.com/web-content-extractor.htm worryfreelabs.com/about/ www.intelligencetest.com www.ikea.com/gb/ www.nubbeo.com.ar www.mulberry.com/es/shop/sale/sale-mens-accessories.html www.tous.com/es-es/novedades/relojes/c/59.html

Website type	Original URL of the webpage
	www.tous.com/es-es/novedades/relojes/c/59.html preferenceweb.com/collections/all-sneakers.html www.trekbikes.com/us/en_US/bikes/mountain-bikes/electric-mountain-bikes/c/B512/addons.prestashop.com/es/2-modulos.html us.pandora.net/en/charm-bracelets/pandora-moments/pandora-moments-bracelets/kawaiipenshop.com www.vam.ac.uk/shop/lindsay-philip-butterfield-blue-flower-silk-scarf.html shop.fendt.com/kids-toys/clothing/shirts.html www.euroholds.com/it/29-prese-arrampicata.html naranjascarcaixent.com/tienda.html www.usedbooksfactory.com/buy-second-hand-old-books/category/ENGINEERING-FIRST-YEAR-BOOKS.html
Media / Communication	edition.cnn.com www.neoteo.com/star-wars-the-force-awakens-el-regreso-de-viejos-personajes/ riotimesonline.com www.bbc.co.uk/news/ techcrunch.com/gadgets/ www.turfparadise.com www.cleanclothes.org www.afp.com/es/contact/ news.discovery.com/tech/robotics/artificial-intelligences-hawkings-fears-stir-debate-141206.htm www.history.com detroit.cbslocal.com/2018/12/04/high-school-newspaper-suspended-after-publishing-disruptive-investigation/ www.rocklists.com/91x-1983.html www.lashorasperdidas.com www.journalism.org/2014/03/13/social-search-direct/ www.socialmediatoday.com/news/facebook-adds-new-features-for-instant-articles-including-links-to-more-pu/569786/ www.diariodeburgos.es/Noticia/Z1C5D6DE9-D1E6-B03A-61236AF21520B8B2/202002/Un-programa-verde-dedicado-a-Felix-Rodriguez-de-la-Fuente.html wordofmouthmendo.com/word-of-mouth-stories/2018/5/31/travellers-fare.html www.usine-digitale.fr/article/la-start-up-americaine-clearview-ai-illustre-deja-les-derives-de-la-reconnaissance-faciale.N921119.html 1015fm.com.au/2020/02/steve-mickenbecker-interest-rates-on-hold-2020-02-07/ www.dw.com/de/lebron-james-vom-pflegekind-zum-basketball-superstar/a-52088565.html www.theday.com/movies-tv/20200203/super-bowl-ads-dialed-up-fun-as-antidote-to-politics.html nltimes.nl/2019/12/16/chocolate-spread-babies-wins-misleading-product-award.html biztechmagazine.com/article/2019/12/why-byod-makes-endpoint-security-crucial-small-businesses.html www.diariandorra.ad/noticies/nacional/2020/01/23/descontrol_156338.1125.html www.wishtv.com/news/flu-is-widespread-across-the-us/ es.gizmodo.com/google-nearby-sharing-por-fin-una-alternativa-a-airdro-1841219114.html
Institutions / Associations	web.mit.edu/institute-events/visitor/ www.isoc-es.org www.museodelprado.es www.jdi.org.za www.u-tokyo.ac.jp/en/about/history.html www.savethechildren.net/what-we-do/our-humanitarian-work/ college.harvard.edu/financial-aid/ www.unicef.org/where-we-work.html www.linuxfoundation.org/about/ clinicaltrials.gov/ct2/search/index/ cordis.europa.eu/fp7/ict/fire.html www.informatik.uni-trier.de/~ley/pers/hd/s/Silva_Josep.html parents.berkeley.edu/advice/babies/laundry.html amref.org/strategic-pillars/ cpepalencia.es/federaciones-y-asociaciones-confederadas-asociaciones/ www.icann.org/history.html www.gip-jci-justice.fr/en/about-us/support-council/ www.einstein.yu.edu/leadership/ www.americanacademy.de/about/ www.mensa.es/cms/pages/%C2%BFqu%C3%A9-es-mensa.html www.bcrf.org/breast-cancer-research.html www.ielts.org/what-is-ielts/ielts-introduction.html fr.unesco.org/about-us/introducing-unesco.html www.ccbe.eu/about/who-we-are/ www.fraud.org/get_involved.html www.avaasaja.org/index.php/quienes-somos.html

Table 2: Benchmark properties

Id	Benchmark	Nodes	T. Nodes	M.C. Nodes	Menu Links
1	es.sharelatex.com	1091	877	214	118
2	github.com/DawidStankiewicz/	1236	453	783	5
3	forum.skyscraperpage.com	3371	146	3225	6
4	en.citizendium.org	1083	414	633	35
5	www.filmaffinity.com	1333	351	976	32
6	stackoverflow.com	6450	447	5891	5
7	www.meneame.net	760	207	423	11
8	www.strangehorizons.com	634	149	403	23
9	www.accountkiller.com	501	222	279	8
10	study.com	287	103	184	74
11	c.mi.com/it/	3490	2949	541	37
12	frances.forosactivos.net	813	318	495	9
13	alumni.harvard.edu	2004	1785	219	40
14	www.spacetimestudios.com	4887	1387	3500	47
15	www.gimpforum.de	1861	457	1300	6
16	www.emaildiscussions.com	1092	239	674	7
17	forums.debian.net	2764	150	2327	3
18	forums.mozillazine.org	2017	235	1411	3
19	forums.tomsguide.com	7900	992	5064	22
20	forums.mysql.com	4487	430	3945	10
21	lawstudents.ca	3563	949	1935	11
22	www.japanesepod101.com	1563	923	434	36
23	forums.opera.com	1452	617	829	7
24	forums.linuxmint.com	5077	327	350	7
25	www.wysiwygwebbuilder.com	3940	739	3201	7
26	communities.apple.com	3144	375	1306	10
27	www.cocinaconmarta.com	5482	3411	1999	10
28	www.javiercelaya.es	754	682	258	12
29	markahall.blogspot.com.es	3137	697	2440	22
30	www.trendencias.com	2426	1139	1042	7
31	users.dsic.upv.es/~dinsa	241	74	160	5
32	googleblog.blogspot.com.es	5084	3574	1507	2
33	www.robyncarr.comç	292	92	200	4
34	www.anmmalaspina.com	400	190	206	8
35	users.dsic.upv.es/~jsilva/	203	169	34	14
36	foodsense.is	334	104	192	5
37	diarium.usal.es/lguich	603	79	524	3
38	www.folj.com	559	175	384	4
39	oneminutelist.com	490	273	217	5
40	artsonline.uwaterloo.ca	410	164	240	4
41	benjamincongdon.me/	329	55	274	4
42	michael.tsikerdekis.com	555	124	95	7
43	www.beeorganisee.com	816	494	312	18
44	www.danielgrindrod.com	424	395	29	4
45	ofdollarsanddata.com	1015	364	651	5
46	blog.mint.com	856	442	129	44
47	elainesir.com	1348	523	664	26
48	www.vindame.com.br	651	546	105	20
49	www.rosamontero.es	806	89	717	9
50	www.almezzer.com	1093	516	416	23
51	johnboyne.com	679	213	185	8
52	johngardnerathome.info	397	176	188	21
53	www.eclipse.org	256	156	92	8
54	www.swimmingpool.com	607	499	176	25
55	www.emmaclothes.com	1080	374	706	8
56	www.arduino.cc	830	490	340	20
57	today.java.net	696	342	354	6
58	clotheshor.se	459	231	228	8
59	ruzafagallery.com	439	258	176	5
60	www.raspberrypi.org	392	140	252	14
61	doodle.com	572	490	82	5
62	www.newprosoft.com	832	151	681	6
63	worryfreelabs.com	424	321	103	7
64	www.intelligencetest.com	366	284	82	18
65	www.ikea.com	1545	407	1138	10
66	www.nubbeo.com.ar	1579	600	976	7
67	www.mulberry.com	8381	3943	4203	152
68	www.tous.com	5108	3010	1056	216
69	preferenceweb.com	2259	725	1362	17
70	www.trekbikes.com	5684	1924	3760	169

Id	Benchmark	Nodes	T. Nodes	M.C. Nodes	Menu Links
71	addons.prestashop.com	8051	2333	3382	5
72	us.pandora.net	6373	2011	3520	142
73	kawaiipenshop.com	1222	819	403	26
74	www.vam.ac.uk	1581	1186	392	61
75	shop.fendt.com	2234	1433	672	55
76	www.euroholds.com	4922	843	3490	89
77	naranjascarcaixent.com	314	172	141	6
78	www.usedbooksfactory.com	2093	872	1173	7
79	edition.cnn.com	3934	192	3742	15
80	www.neoteo.com	1034	635	399	18
81	riotimesonline.com	2063	1094	747	23
82	www.bbc.co.uk	2991	572	1360	22
83	techcrunch.com	2576	1890	586	35
84	www.turfparadise.com	1057	838	213	98
85	www.cleanclothes.org	1335	266	928	7
86	www.afp.com	1199	404	789	16
87	news.discovery.com	2896	1209	800	68
88	www.history.com	1246	669	260	12
89	detroit.cbslocal.com	1259	1161	98	7
90	www.rocklists.com	765	533	232	6
91	www.lashorasperdidas.com	1822	553	722	12
92	www.journalism.org	809	459	88	10
93	www.socialmediatoday.com	1284	666	153	
94	www.diariodeburgos.es	599	384	73	9
95	wordofmouthmendo.com	901	668	26	24
96	www.usine-digitale.fr	989	259	125	18
97	1015fm.com.au	1008	835	65	28
98	www.dw.com	2549	1596	470	135
99	www.theday.com	1989	932	472	86
100	nltimes.nl	566	115	169	10
101	biztechmagazine.com	1897	1057	454	77
102	www.diariandorra.ad	1840	659	665	10
103	www.wishtv.com	2359	1993	351	77
104	es.gizmodo.com	592	266	326	9
105	web.mit.edu	393	252	141	9
106	www.isoc-es.org	271	171	100	17
107	www.museodelprado.es	534	148	386	7
108	www.jdi.org.za	626	401	199	10
109	www.u-tokyo.ac.jp	602	499	97	30
110	www.savethechildren.net	751	690	54	21
111	college.harvard.edu	1090	669	397	5
112	www.unicef.org	1052	671	381	4
113	www.linuxfoundation.org	588	534	54	4
114	clinicaltrials.gov	543	423	120	37
115	cordis.europa.eu	959	335	179	19
116	www.informatik.uni-trier.de	3085	64	3021	9
117	parents.berkeley.edu	283	99	184	8
118	amref.org	779	600	176	21
119	cpoepalencia.es	718	644	73	51
120	www.icann.org	489	397	91	46
121	www.gip-jci-justice.fr	885	679	137	28
122	www.einstein.yu.edu	1147	815	187	17
123	www.americanacademy.de	706	669	15	37
124	www.mensa.es	422	354	37	10
125	www.bcrf.org	907	587	296	6
126	www.ielts.org	758	605	150	43
127	fr.unesco.org	947	615	311	73
128	www.ccbe.eu	966	783	177	33
129	www.fraud.org	541	321	61	16
130	www.avaasaja.org	1223	886	163	59

Table 3: Path to the key page of each benchmark

Id	Path to the key page
1	es.sharelatex.com/learn/Uploading_a_project
2	github.com/DawidStankiewicz/forum.1
3	forum.skyscraperpage.com/index.html
4	en.citizendium.org/index.html
5	www.filmaffinity.com/es/main.html
6	stackoverflow.com/index.html
7	www.meneame.net/faq-es.html
8	www.strangehorizons.com/2004/20040906/greenglass-f.shtml.html
9	www.accountkiller.com/en/delete-activision-account.html
10	study.com/learn/science-questions-and-answers.html
11	c.mi.com/it/index.html
12	frances.forosactivos.net/index.html
13	alumni.harvard.edu/help/message-board.html
14	www.spacetimestudios.com/forumdisplay.php%3F29-Websites-and-Forum-Discussion.html
15	www.gimpforum.de/index.html
16	www.emaildiscussions.com/index.html
17	forums.debian.net/viewforum.php%3F%3d5.html
18	forums.mozillazine.org/viewforum.php%3F%3d23.html
19	forums.tomsguide.com/forums/laptop-general-discussion.15/index.html
20	forums.mysql.com/list.php%3F21.html
21	lawstudents.ca/forums.html
22	www.japanesepod101.com/forum/viewforum.php%3F%3d26.html
23	forums.opera.com/index.html
24	forums.linuxmint.com/viewforum.php%3F%3d72.html
25	www.wysiwygwebbuilder.com/forum/viewforum.php%3F%3d10.html
26	communities.apple.com/es/community/mac_os/os_x_el.capitan.html
27	www.cocinaconmarta.com/2015/04/empanadillas-chinas-de-gambas-y-verduras.html
28	www.javiercelaya.es/index.html
29	markahall.blogspot.com.es
30	www.tendencias.com
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32	googleblog.blogspot.com.es
33	www.robyncarr.com/qa.html
34	www.ammalaspina.com/index.html
35	users.dsic.upv.es/~jsilva/www2013/index2.html
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55	www.emmaclothes.com/index.html
56	www.arduino.cc/en/Main/Software.html
57	today.java.net/pub/a/today/2004/07/06/3ddesktop.html
58	clotheshor.se/index.html
59	ruzafagallery.com/calendario/index.html
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63	worryfreelabs.com/about.1.html
64	www.intelligencetest.com/index.htm
65	www.ikea.com/gb/en.html
66	www.nubbeo.com.ar/index.html
67	www.mulberry.com/es/shop/sale/sale-mens-accessories.html
68	www.tous.com/es-es/novedades/relojes/c/59.html
69	preferenceweb.com/collections/all-sneakers.html
70	www.trekbikes.com/us/en_US/bikes/mountain-bikes/electric-mountain-bikes/c/B512/index.html

Id	Path to the key page
71	addons.prestashop.com/es/2-modulos.html
72	us.pandora.net/en/charm-bracelets/pandora-moments/pandora-moments-bracelets/index.html
73	kawaiipenshop.com/index.html
74	www.vam.ac.uk/shop/lindsay-philip-butterfield-blue-flower-silk-scarf.html
75	shop.fendt.com/kids-toys/clothing/shirts.html
76	www.euroholds.com/it/29-prese-arrampicata.html
77	naranjascarcaixent.com/tienda.html
78	www.usedbooksfactory.com/buy-second-hand-old-books/category/ENGINEERING-FIRST-YEAR-BOOKS.html
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80	www.neoteo.com/star-wars-the-force-awakens-el-regreso-de-viejos-personajes/
81	riotimesonline.com/index.html
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104	es.gizmodo.com/google-nearby-sharing-por-fin-una-alternativa-a-airdro-1841219114.html
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111	college.harvard.edu/financial-aid.html
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113	www.linuxfoundation.org/about.1.html
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126	www.ielts.org/what-is-ielts/ielts-introduction.html
127	fr.unesco.org/about-us/introducing-unesco.html
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129	www.fraud.org/get_involved.html
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3 Conclusions

This paper presents a benchmark suite composed of 130 heterogeneous websites. This benchmark suite can be used to test any technique that works with web-pages, but it is specially useful for template detection, content extraction and menu detection because it includes a gold standard for them. Concretely, the gold standard identifies for each benchmark the template, the main content and the main menu. Thus, it can be used to evaluate and compare techniques and implementations of these disciplines. The suite is publicly available and free.

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