

Background in Web Development

Michał Nowotka
job applicant



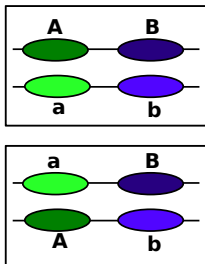
EMBL-EBI
ChEMBL group

June 9, 2012

- 1 Experience in research
 - Bachelor thesis
 - Master thesis
- 2 Experience at CERN
- 3 Recent experience and current work

The problem of haplotype frequency estimation – Bachelor thesis

AaBb ?



- Determining haplotypes with laboratory methods is expensive and time-consuming.
- In contrast, there are many cost-effective techniques for determining genotypes.
- In general, it could be impossible to infer haplotypes from genotype data.

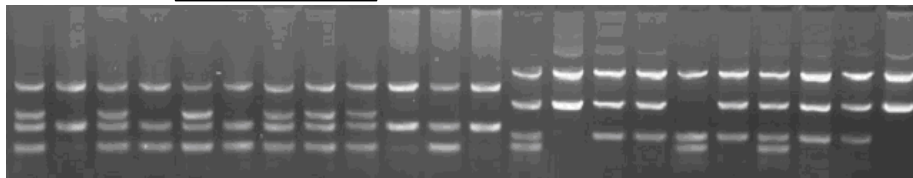


Figure:
Determining genotype experiment results

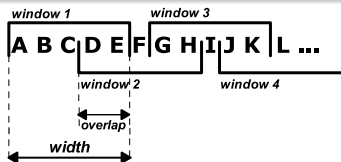
Idea of short overlapping window

Problem

Every algorithm employing full space search would operate with $O(c^n)$ complexity. This is why it cannot be directly applied to phasing long genotypes.

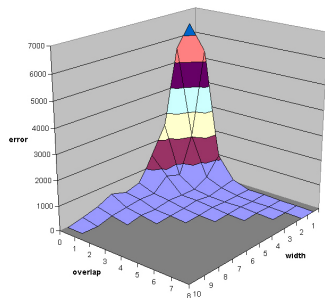
Solution – Genotypes can be divided into shorter pieces that overlap.

- Piece length is fixed, so is computation time.
- Phasing n pieces has now $O(n)$ complexity.
- Multiple pieces can be phased in parallel.
- If phasing algorithm is convergent total error should not be large.

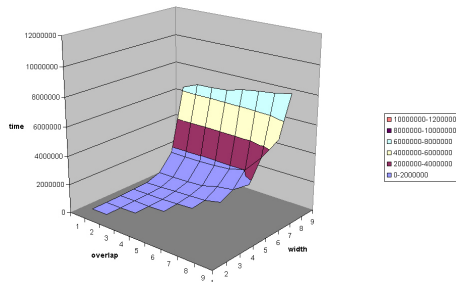


What are the error and execution time as a function of **width** and **overlap** parameters?

Results

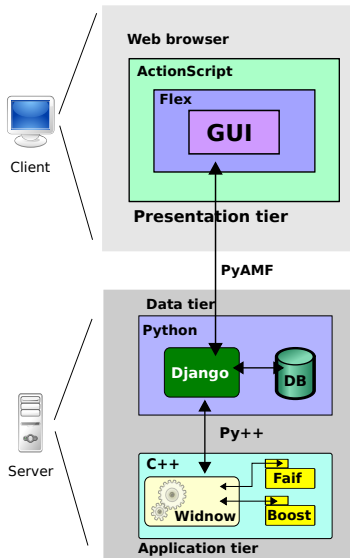


Error as a function of width and overlap parameters



Execution time as a function of width and overlap parameters

Application architecture



Automated functional annotation using classification algorithms and data fusion – master thesis

Functional genomics as a major field in applied bioinformatics

- Functional interpretation is a key step in the analysis of DNA and protein sequences.
- This task cannot be done without availability of extensive functional annotation of the datasets.
- Due to the fast development of high-throughput sequencing technologies, an increasing amount of novel, uncharacterized sequence data have arisen.
- Standardized functional annotation is essential.

The goal

Provide biologists with useful information to take into account when addressing the task of functionally characterizing their sequence data.

Automated functional annotation – the algorithm

Input

Uncharacterized DNA or protein sequence.

- BLAST.
- Gene Ontology lookup.
- Data fusion and inference.

Output

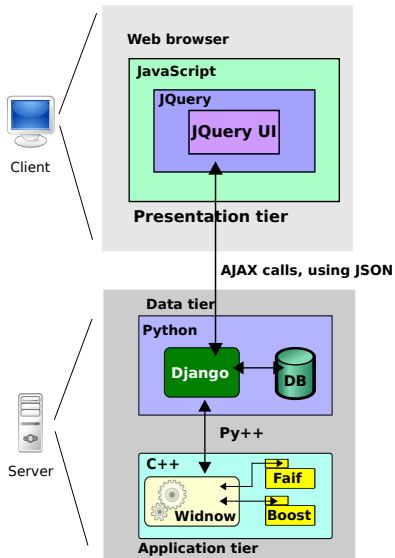
Inferred functional annotation for the input sequence

Inferring functional annotation

For combining multiple results the Dempster's rule of combination is used.

- Often used as a method of sensor fusion.
- Strongly emphasises the agreement between multiple sources and ignores all the conflicting evidence.
- Better alternative to weighted voting.

Application architecture



Site Status Board – an application monitoring the behavior of all the centers of a particular VO

- SSB provides a single entry point that summarizes the status of the sites.
- The main idea is to provide a flexible framework which would allow VOs to define multiple monitoring metrics.
- The metrics can be added, deleted and easily modified.
- The most critical metrics can be combined into a single value for each site corresponding to its status.
- SSB keeps the history of how all the metrics have evolved over time..
- SSB consists of three components: collectors that gather information, a database and a web server.

SSB – implemented features

- XSLT replaced by Java Script template system.
- New coherent GUI.
- Filtering, paging, sorting in Expanded Table, computed on server side.
- Expanded Table ready for large amount of data.
- Redesigned backend.
- Client-side plotting.
- Bookmarking, undo/redo.
- Backbone.

Old and new SSB

Site Status for the CMS sites

Index Expanded Table Gridmap Alternative views

Help Login

Site Status for the CMS sites, v0.13.0 rc1

Index Expanded Table View: default

Link to any of the sections to save state: [Index](#) [Expanded Table](#) [Gridmap](#) [Alternative views](#)

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T0 + T1	T2
<div> <div>✓</div> <div>T0_CH_CERN</div> </div> <div> <div>✓</div> <div>T1_CH_CERN</div> </div> <div> <div>✓</div> <div>T1_DE_KIT</div> </div> <div> <div>✓</div> <div>T1_ES_PIC</div> </div> <div> <div>✓</div> <div>T1_FR_CGNDPS</div> </div> <div> <div>✓</div> <div>T1_IT_CNAF</div> </div> <div> <div>✓</div> <div>T1_TW_ASCG</div> </div> <div> <div>✓</div> <div>T1_UK_RAL</div> </div> <div> <div>✓</div> <div>T1_UK_RAL_Disk</div> </div> <div> <div>✓</div> <div>T1_US_FINAL</div> </div>	<div> <div>✗</div> <div>T2_AT_Vienna</div> </div> <div> <div>✓</div> <div>T2_BR_SPRACE</div> </div> <div> <div>✓</div> <div>T2_CN_BJING</div> </div> <div> <div>✓</div> <div>T2_DE_DESY</div> </div> <div> <div>✓</div> <div>T2_FR_IPHC</div> </div> <div> <div>✓</div> <div>T2_HU_Budapest</div> </div> <div> <div>✓</div> <div>T2_KE_RRC_KI</div> </div> <div> <div>✓</div> <div>T2_RU_SINP</div> </div> <div> <div>✓</div> <div>T2_TR_METU</div> </div> <div> <div>✓</div> <div>T2_TW_Taiwan</div> </div> <div> <div>✓</div> <div>T2_UA_KIPT</div> </div> <div> <div>✓</div> <div>T2_UK_London_Brunel</div> </div> <div> <div>✓</div> <div>T2_UK_London_IC</div> </div> <div> <div>✓</div> <div>T2_UK_Schrd_RAL/PP</div> </div> <div> <div>✓</div> <div>T2_US_Caltech</div> </div> <div> <div>✓</div> <div>T2_US_Florida</div> </div> <div> <div>✓</div> <div>T2_US_MIT</div> </div>

Site Status for the CMS sites, v0.13.0 rc1

Index Expanded Table View: default


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Old and new SSB


[oddsboard](#)
 Site Status for the CMS sites
 [Found a bug?](#)
[HELP](#)

Index	Expanded Table	Gridmap	Alternative views
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Put the mouse over any column header to get the description of the column.
Clicking on a column header will display the evolution of that column over the last 24 hours.
 Information is more than 24h old

[illegible]

Help Logs Site Status for the CMS sites. v0.13.0_rc1

odshboard Index Expanded Table

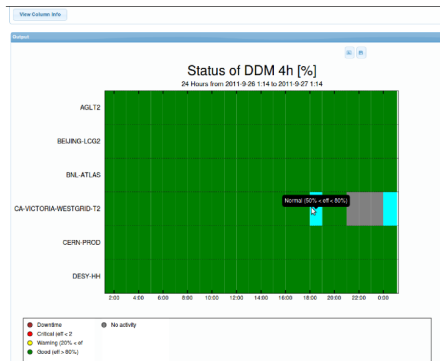
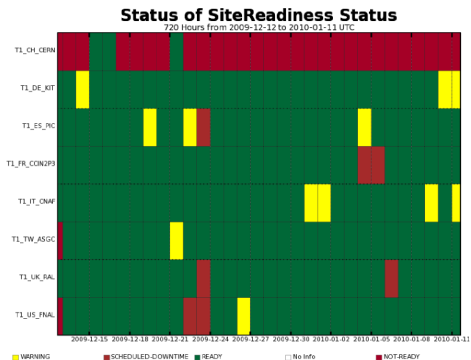
Show 10 entries Copy Print Save **view:** default Search...

Site Name	Visible	JobRobot	SAM TESTS		Production	Analysis	Site usage		Commissioned Links
			CE	SRM			Running	Pending	
T0_CH_CERN	OK	n/a	OK	OK	100%				Current number of running CMS jobs: Rndp: null Desc: null (last update: 2011-09-24 22:15:05 UTC; last value: 2011-09-26 21:42:55 UTC)
T1_CH_CERN	n/a	(100%/600)	n/a	n/a	n/a	n/a	n/a	n/a	
T1_DE_KIT	OK	(100%/600)	OK	OK	100%(2533)	100%(3)	413		
T1_ES_PIC	OK	(96%/600)	OK	OK	100%(1553)	n/a	12	1	3/5 combined
T1_FR_COMPS3	OK	n/a	OK	OK	100%(5820)	n/a	1056	589	3/5 combined
T1_IT_CNAF	OK	(100%/600)	OK	OK	100%(7235)	n/a	86	14	3/5 combined
T1_TW_ARGC	OK	(100%/600)	OK	OK	100%(3995)	100%(79)	8	347	3/5 combined
T1_UK_RAL	OK	(100%/600)	OK	OK	100%(1850)	n/a	326	2	3/5 combined
T1_UK_RAL_Disk	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	3/5 combined
T1_US_FNAL	OK	(100%/1000)	OK	OK	100%(71477)	100%(3403)	n/a	n/a	3/5 combined

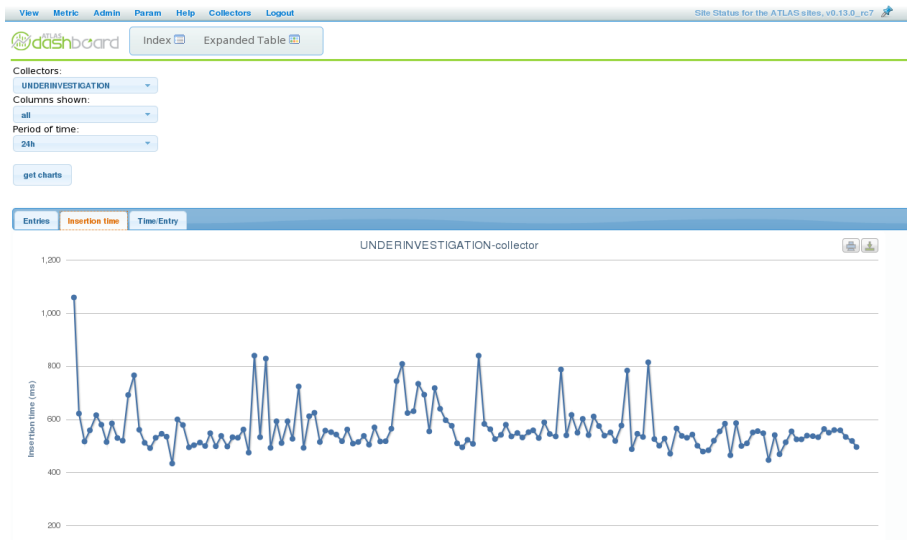
Showing 1 to 10 of 115 entries DB query took 0.0276 s

First Previous 1 2 3 4 5 Next Last

Old and new SSB



SSB – collector metainformation

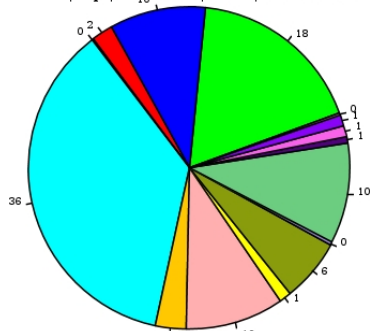


SSB – TODO

- Tests (jQunit, Selenium).
- Database synchronization.
- Web based installation wizard.
- Getting rid of FOUCs.
- Refactoring of DAO.
- Expanded Table should refresh periodically and highlight recent changes.
- NoSQL for Sieview Data.

SSB – Impact chart

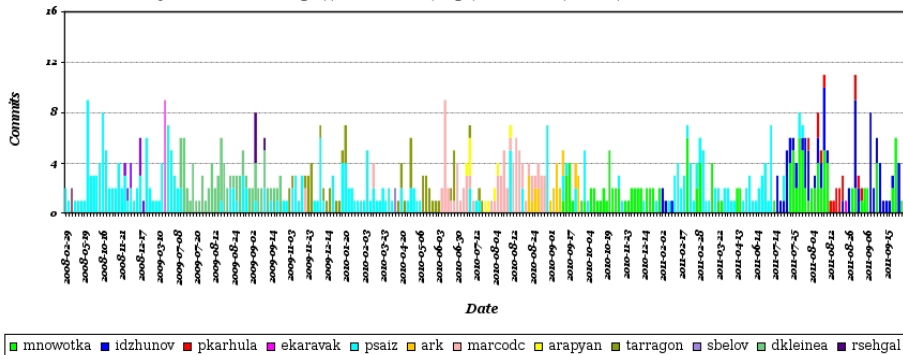
<https://svn.cern.ch/repos/dashboard/trunk/arda.dashboard.siteview>



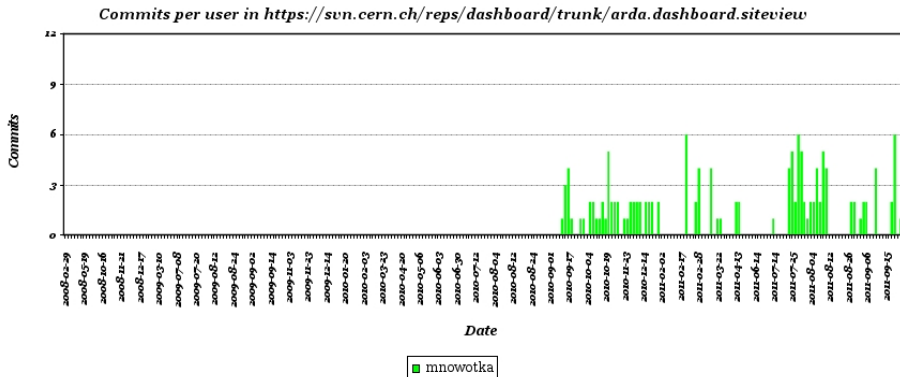
a ■ idzhunov ■ pkarhula ■ ekaravak ■ psaiz ■ ark ■ marcodc ■ arapyan ■ tarragon ■ sbelow ■ dkleinea ■ rsehgal ■ elisal ■ sic

SSB – Commits

Commits for all users in <https://svn.cern.ch/repos/dashboard/trunk/arda.dashboard.siteview>



SSB – My commits



Framework

Benefits for the dashboard framework:

- Coherent set of tools and libraries.
- Proofs of concepts.
- Authentication mechanisms implemented in framework.
- Better documentation.

MonAlisa

- Installation on every node.
- Instalation and tuning of ML Repository.
- Alarms.
- New Metrics.

MonAlisa



MonALISA Repository



[Repository Home](#) [Administration Section](#) [Events XML Feed](#) [MonAlisa GUI](#)

Repository

- MonALISA Repository
- Global Views
- Statistics
- Services
- Machines
- Collectors
- Repository info
- Installed packages

close all

This page: bookmark,
URL

Dashboard machines' status

What is this s

Machines status

		CPU				Networking (eth0)			Busiest disk			httpd workers		httpd now		httpd instance avg			httpd instance total			
Host	sms state	Online	Load	usr	sys	lowlat	idle	IN	OUT	Util (%)	Device	IOPS	Running	Idle	Req/s	Traffic	Req/s	Traffic	Bytes/req	Requests	Tml	
dashb-virtual06			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
dashb-board03	production		0.04	0.667	0.103	0.131	99.08	0.176 Mbps	0.711 Mbps	1.601	sda	5.38	2	98	7.491	0	3.8	46.1 KB/s	12390	107736	1.	
dashb-board17	production		0.03	1.662	0.75	0.355	97.07	87.4 Kbps	30.91 Kbps	0.997	hda	5.516	1	7	0.017	85.31 B/s	0.04	173 B/s	4342	170	72	
dashb-virtual09			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
dashb-virtual11			0.16	1.217	2.1	0	96.45	0.824 Kbps	3.868 Kbps	0.042	sda	0.817	-	-	-	-	-	-	-	-	-	
dashb-virtual04			0.42	13.73	11.01	0	74.33	1.718 Kbps	3.393 Kbps	0.083	sda	3.083	-	-	-	-	-	-	-	-	-	
dashb-board11	maintenance		0.08	0.36	0.2	0.015	99.41	12.53 Kbps	22.2 Kbps	0.12	sda	4.083	-	-	-	-	-	-	-	-	-	
dashb-board21	production		0.4	1.437	0.674	0.345	97.02	0.101 Mbps	0.529 Mbps	0.992	hda	5.549	-	-	-	-	-	-	-	-	-	
dashb-board09	production		0.01	0.965	0.125	0.021	98.88	80.69 Kbps	0.52 Mbps	0.213	sda	3.7	3	72	6.85	0	3.59	57.5 KB/s	16384	102092	1.	
dashb-board27	maintenance		0.01	0.282	0.218	0.161	99.26	2.349 Kbps	4.166 Kbps	0.43	hda	3.017	-	-	-	-	-	-	-	-	-	
dashb-board31	production		0.32	1.925	0.536	17.41	79.02	95.24 Kbps	91.88 Kbps	19.78	hda	5.699	74	54	-	-	-	-	-	-	-	
dashb-board22	maintenance		0.05	0.33	0.362	0.201	99.07	2.458 Kbps	3.152 Kbps	0.572	hda	2.666	-	-	-	-	-	-	-	-	-	
dashb-virtual07			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
dashb-board25	production		0.17	3.052	0.904	0.396	95.17	83.56 Kbps	51.35 Kbps	0.965	hda	9.632	-	-	-	-	-	-	-	-	-	
dashb-virtual02			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
dashb-board23	production		0.19	0.128	0.287	9.902	89.64	2.456 Kbps	3.215 Kbps	16.48	hda	2.066	-	-	-	-	-	-	-	-	-	
dashb-virtual05			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
dashb-board02	production		0.01	0.069	0.184	0.127	99.57	3.987 Kbps	4.478 Kbps	1.427	sda	6.3	-	-	-	-	-	-	-	-	-	

Other applications

- Dashboard for Google Earth.
- SiteView.

Presentations

Group meetings presentation:

- jQuery.
- Charting.
- Deployment and load balancing.
- noSQL.
- Architecture of JS applications.

Twiki articles:

- JS tools and libraries (<https://twiki.cern.ch/twiki/bin/view/ArdaGrid/Libs>).
- MVC architecture (<https://twiki.cern.ch/twiki/bin/view/ArdaGrid/ModelViewController>).
- Dashboard services documentation (<https://twiki.cern.ch/twiki/bin/view/ArdaGrid/Services>).
- MonAlisa installation procedure (<https://twiki.cern.ch/twiki/bin/view/ArdaGrid/MonAlisa>).
- Authentication mechanism in dashboard framework (<https://twiki.cern.ch/twiki/bin/view/ArdaGrid/Auth>).
- Form handling (<https://twiki.cern.ch/twiki/bin/view/ArdaGrid/FormHandling>).
- Google Earth emergency (<https://twiki.cern.ch/twiki/bin/view/ArdaGrid/DashbEarth>).

Other

- Contributing to CHEP papers.
- Attending to Daily Ops.
- Attending to CMS Ops.
- Summer Student.

What I learned

- Java Script technologies.
- Dashboard Framework.
- CERN School of Computing.
- Sys Admin stuff.
- Many interesting lectures (including those by Richard Stallman and James Watson).
- French course.
- Working in multinational environment.
- Working in large organisation.
- Living abroad.
- Faster than light neutrino.



Development of business applications intended for use by corporate clients:



Orange



T-mobile



Play



Netia

Horus Workflow

Horus Workflow

Horus Workflow is used to define and monitor workflow in business processes. It supports the implementation of any number of administrative processes, personnel, management or sales.

Horus Workflow System Features:

- Support for managing tasks
- The ability to define own processes
- Support for document management processes
- Support for a variety of organizational structures
- Monitoring of user activity (change history)
- Management of the company organizational structure

Horus Workflow – application screenshot

The screenshot displays the Horus Workflow application interface. On the left is a sidebar with navigation links: 'Mój profil', 'Moje dane', 'Baza danych' (with sub-items 'Klasy (68)', 'Lokale (310)', 'Nieruchomości (132)'), 'Zadania' (with sub-items 'Bieżące (1)', 'Archiwalne (10)'), and 'Nr zarządzania'. The main content area is titled '266+ Nieruchomość | Zarejestrowana' and contains a form for property details. The form is organized into two columns. The left column includes fields for 'Nr zarządzania' (12/ABC/14/07/2011), 'Data zarządzania' (14-07-2011), 'Adres (ulica i numer)' (Sierakowskiego 90), 'Kod pocztowy' (03-445), 'Dzielnica' (Praga-Północ), 'Nr działki' (216/4562/87/9), 'Nr obrębu' (4569/48), 'Rodzaj użytków' (B - tereny przemysłowe), 'Nr księgi wieczystej' (54654/K.VV/44), 'Powierzchnia ogółem' (4459 m²), 'Władający' (brak danych), and 'Użytkownik' (brak danych). The right column includes fields for 'Sposób zagospodarowania' (Na potrzeby jednostek państwowych), 'Kubatura budynku' (10245 m³), 'Wysokość całkowita' (16,45 m), 'Długość' (30 m), 'Szerokość' (30 m), 'Liczba kondygnacji naziemnych' (4), 'Liczba kondygnacji podziemnych' (1), 'Rok budowy' (1956), 'Liczba lokali ogółem' (25), and 'Zdjęcie nieruchomości' (with a small image of a building). At the bottom of the form are buttons for 'Przygotuj przetarg' and 'Przygotuj umowę'. The top right corner shows the user 'Użytkownik: Janusz Nowotka'.

Dane podstawowe		Lokale	Media	Stawki	Umowy
Nr zarządzania	12/ABC/14/07/2011	Sposób zagospodarowania	Na potrzeby jednostek państwowych		
Data zarządzania	14-07-2011	Kubatura budynku	10245 m³		
Adres (ulica i numer)	Sierakowskiego 90	Wysokość całkowita	16,45 m		
Kod pocztowy	03-445	Długość	30 m		
Dzielnica	Praga-Północ	Szerokość	30 m		
Nr działki	216/4562/87/9	Liczba kondygnacji naziemnych	4		
Nr obrębu	4569/48	Liczba kondygnacji podziemnych	1		
Rodzaj użytków	B - tereny przemysłowe	Rok budowy	1956		
Nr księgi wieczystej	54654/K.VV/44	Liczba lokali ogółem	25		
Powierzchnia ogółem	4459 m²	Zdjęcie nieruchomości			
Władający	brak danych				
Użytkownik	brak danych				

Horus Workflow – technologies

Used technologies and libraries:

- Spring
- Maven
- JBoss
- Hudson / Jenkins
- Coffee Script
- JQuery UI

TMS Brokers Brokerage House



Tasks and responsibilities:

- Development of financial reporting software
- Supporting promotional campaigns
- MetaTrader API programming

TMS Brokers – technologies

Used technologies and libraries:

- JQuery UI
- Highcharts and Highstock
- Python
- Django
- C++



GO4Challenge 2012
WYŚCIG INWESTORÓW RYNKU FOREX

O KONKURSIE
Zasady i terminy

RANKINGI
Sprawdź
wyniki

NAGRODY
O co walczysz?

POLEĆ ZNAJOMYM
Zdobądź dodatkową nagrodę!

EDUKACJA
Poznaj rynek FOREX!

WEŹ UDZIAŁ »

RANKINGI

RANKING GENERALNY

RANKING TYGODNIOWY

RANKING DZIENNY

Sprawdź swoją pozycję w rankingu:

OK »

POZYCJA	GRACZ	STOPA ZWROTU
1.	Eve	1005%
2.	GANESZA	761,41%
3.	konkur	750,65%
4.	STUFF	507,84%
5.	siwek00	396,04%

Aktualizacja z dnia: 01-06-2012 23:30:25

NIE BIERZESZ JESZCZE UDZIAŁU
W KONKURSIE?

**ZACZNIJ GRAĆ O NAGRODY
CZAS UCIEKA**



WEŹ UDZIAŁ »

ZOSTAŃ MISTRZEM FOREX

- sprawdź porady i bezpłatne
szkolenia w sekcji edukacja

SPRAWDŹ »



KOMENTARZ DO WYNIKÓW OSIĄGNIĘTYCH W DNIU 31.05.2012

Github

Source

L^AT_EX source of this presentation can be downloaded from github:

```
git://github.com/mnowotka/ChEMBL-job-web.git
```

Thank you for your attention.