

Ad2BioDB

Open Source Bioinformatics Platform for High-Throughput Data Management



UNIVERSITÀ
DEGLI STUDI
DI MILANO

Amitava Bhattacharyya^{1, §}, Andrea Calabria^{1, §},
Maurizio Mercurio², and Daniele Cusi^{1, 2, 3}

¹ Dept. of Medicine, Surgery and Dentistry, Università degli Studi di Milano, Milan, Italy ² KOS Genetic Srl, Via Podgora 7, Milan, Italy

³ Fondazione Filarete, Viale Ortles 22/4, 20139, Milano, Italy

[§] Corresponding Authors

AB: amitava.bhattacharyya@unimi.it; AC: andrea.calabria@unimi.it;
MM: mmercurio@kosgenetic.com; DC: daniele.cusi@unimi.it

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Introduction

- High Throughput Experimental data
- Available solutions

Not enough! ...We need all!

Genome
Browsers

Data Visualization

Data Analysis

GALAXY

Analysis Software

Data Management

LIMS

Experimental Data

Annotation Data

Phenotype



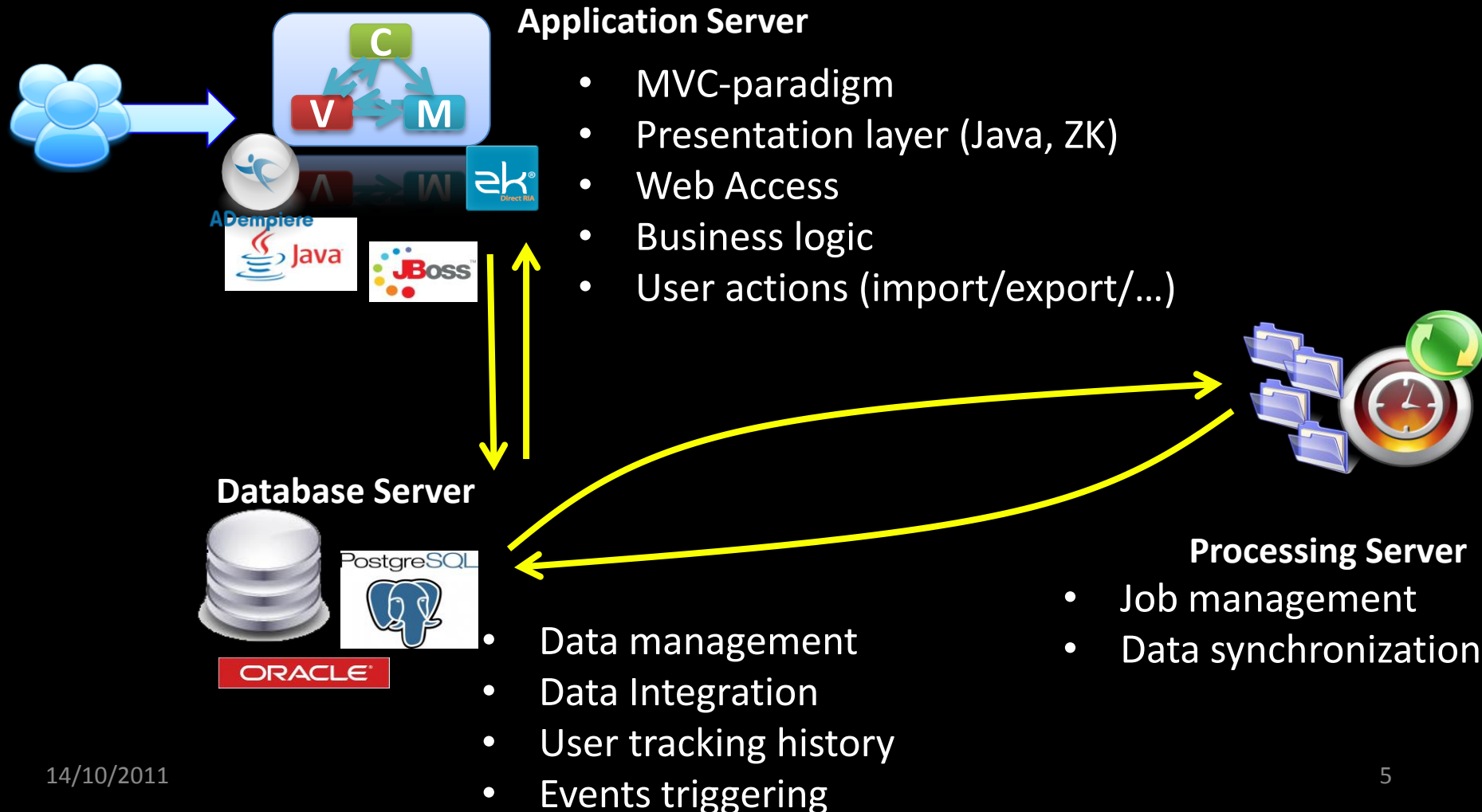
Bioinformatics platform development Requirements

Adempiere as Bioinformatics Platform

- Multiple Data integration → Experimental, Phenotype & Annotation Data
- Multi-Platform → Operating System independent
- Reporting System → Data summary and charts.
- Os independence and web access using Java & Zk.
- Open Source
- Administrative & business functionalities.

Adempiere, suitable backbone for biological data management software, Ad2Biodb

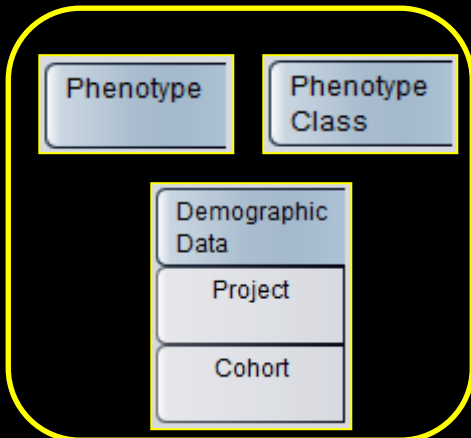
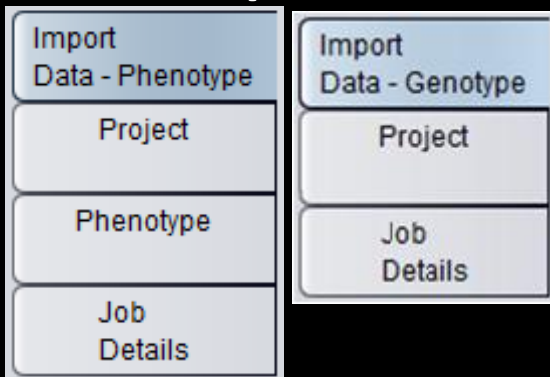
Bioinformatics platform development Architecture



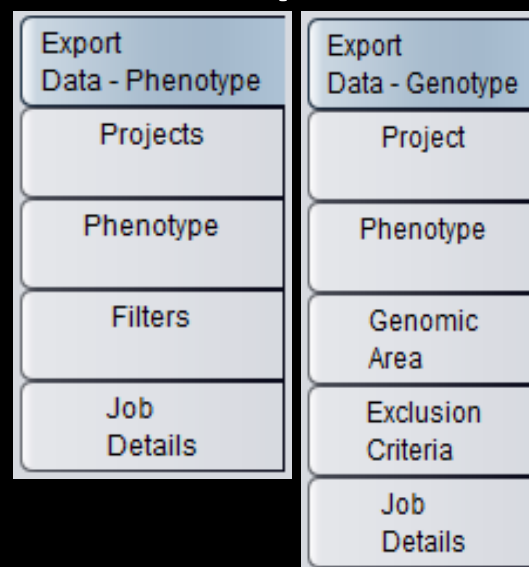
Bioinformatics platform development

Results

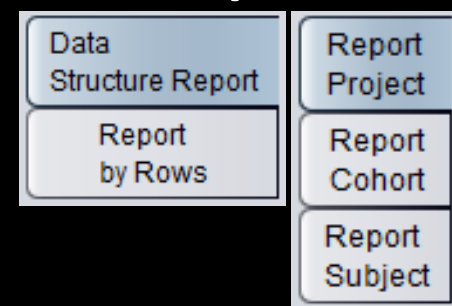
Import



Export



Report



- Process
- Workflow

Bioinformatics platform development

Usage Case

Export Data - Genotype	Export Data - Genotype
Project	☒ Active
Phenotype	Title: Export Test
Genomic Area	Job Description: Export phenotype BP for Cohort "Italian" and all SNPs for Illumina chip id "HG2.5SC_1"
Exclusion Criteria	File Name: Test_HG2.5SC_1
Job Details	File format type: .ped
	Specie: Human
	☒ Choose Subjects by Cohorts ☐ Choose Subjects by Patient
	Cohorts: Italian
	Add Cohorts
	Cohorts Selected: Italian
	Convert missing values with:
	Notes: This is a test for the export of data
Inserted	+*1/1

Bioinformatics platform development

Usage Case

The screenshot shows a web-based interface for a bioinformatics platform. On the left is a vertical sidebar with navigation links: 'Export Data - Genotype', 'Project', 'Phenotype', 'Genomic Area' (highlighted in blue), 'Exclusion Criteria', and 'Job Details'. The main content area is titled 'Genomic Area' and contains several sections for selecting genomic data. Each section has a checkbox, a text input field, and an 'Add' button. The sections are: 'By Chromosomes' (Chromosomes, Add Chromosome), 'By Region' (Regions Selected), 'By Gene Name' (Genes, Add Gene), 'By SNP' (SNP, Add SNP), and 'By Platform Name' (Platform, Add Platform). The 'By Platform Name' section is circled in blue. In this section, the 'Platform' input field contains 'HG2.5SC_1' and the 'Selected Platform' field below it also displays 'HG2.5SC_1'. At the bottom left of the interface is a status bar with the text 'Inserted', and at the bottom right is a page indicator '+1/1'.

Section	Checkbox	Input Field	Button	Selected Field
By Chromosomes	☐	Chromosomes	Add Chromosome	Chromosomes Selected
By Region	☐	Regions Selected		Regions Selected
By Gene Name	☐	Genes	Add Gene	Genes Selected
By SNP	☐	SNP	Add SNP	SNP Selected
By Platform Name	☒	Platform: HG2.5SC_1	Add Platform	Selected Platform: HG2.5SC_1

Bioinformatics platform development

Usage Case

_Job Description Export phenotype BP for Cohort "Italian" and all SNPs for Illumina chip id "HG2.5SC_1"

_File Name Test_HG2.5SC_1

_File format type .ped

_Specie Human

☒ Choose Subjects by Cohorts
☐ Choose Subjects by Patient

_Cohorts Italian

Export Data - Genotype

Project

Phenotype

Genomic Area

Exclusion Criteria

Job Details

Job Details

Start At Sep 20, 2011 11:10:00 AM CEST

Submit Job

Inserted 1/1



Conclusion

- Ad2BioDB integrates many heterogeneous biological data for complex knowledge extraction
- *Beneficial features to biological data management.*

Future Directions

- Improve Plugin System
- Improve Reporting tool
- Analysis



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FILARETE



THANK YOU !!