Brought to you by :

Predictive Analytics

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Analuo analytics portal

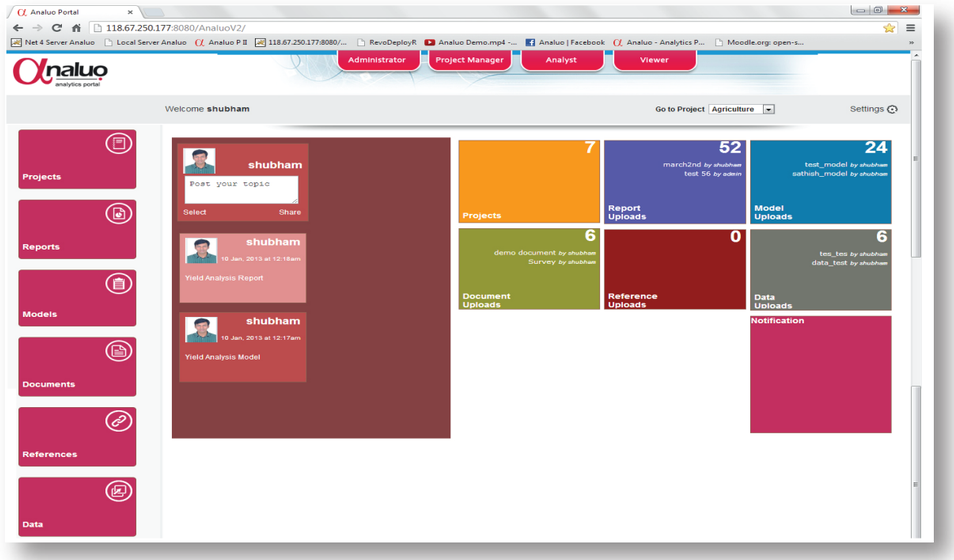
Operationalise Predictive Analytics

- Publish SPSS, Excel and R reports online
- Predict online using SPSS and R models
- Access models and reports via Android app
- Organise people and content into projects
- Monitor analytics tasks and deliverables
- Store related documents and data

Analuo analytics portal

While analytical software such as SPSS, R and even Microsoft Excel provide an excellent development environment on the desktop to analyse data, create statistical reports and in the case of SPSS and R, build predictive models as well, that very desktop environment poses a challenge when it comes to sharing all that information. Analysts must rely on email, physical media and even printed output to reach the results to their final consumers. Moreover, the isolated nature of desktops makes it difficult to collate together all the related and associated information of a project, including documents, spreadsheets and even images along with the results of the published output. All these frequently become a bottleneck in operationalising Predictive Analytics and making it available to a larger audience of end-users who stand to benefit most from the analytical reports and models.

Share the results of your analysis online with others



Analuo is the first ever web based analytics deployment portal for SPSS, R and Microsoft Excel users, to address these challenges.

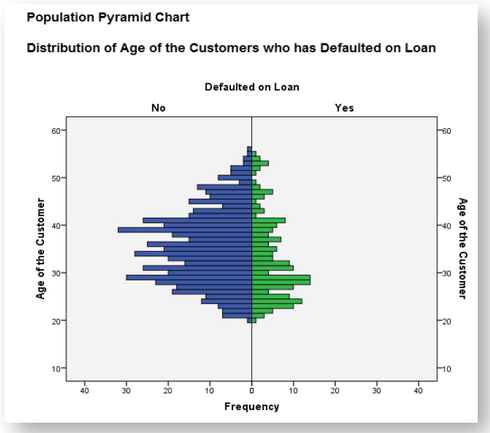
Analuo allows predictive models developed in SPSS and R to be applied to new data, both in online as well as in batch mode, thus making the power of these models directly available to geographically dispersed end users. Reports and charts created in SPSS, R and Microsoft Excel can be published by analysts on Analuo, making these too available over the web to the consumers of analysis. Files and documents associated with analysis can also be kept together on Analuo, organised as distinct projects, as can be some of the data used for the analysis. A social network like user interface in Analuo gives analysts the opportunity to collaborate better, while a Gantt bar based task and deliverables management system allows managers to closely monitor deliverable submission vis-à-vis deadlines.

Taken together, these functionalities of Analuo enable organizations to roll out Predictive Analytics at an operational level to a wide cross section of users who can finally apply the power of Predictive Analytics to answer questions at field level.

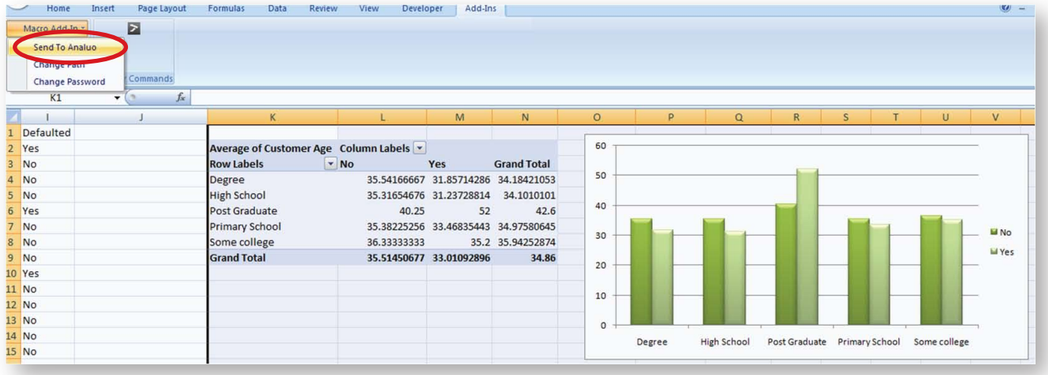
Publish SPSS, Excel and R reports online

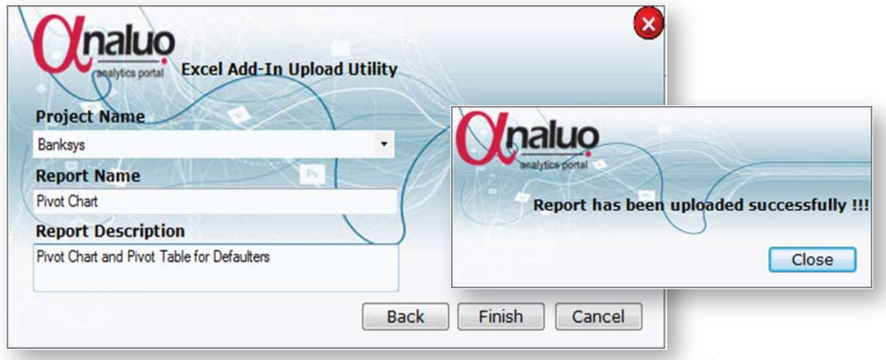
SPSS output can be directly published on to the portal from within the SPSS environment. Once analysis is over, a small utility embedded on the SPSS tool bar allows the analyst to connect to Analuo and upload the current SPSS output directly, without ever having to leave the SPSS environment. In a similar fashion, a Microsoft Excel user can select a portion of her spreadsheet and using a small utility added to the Excel menu, upload the selected section on Analuo. This means that an analyst can make available to the end users the result of the analysis instantaneously while she keeps on working on the data. An R user, on the other hand can convert the output to HTML using R's RHTML() package, and then drag and drop the relevant files on an open Analuo file upload dialog box. Once uploaded on the portal, these reports can also be edited, if the analyst needs to add in more information.

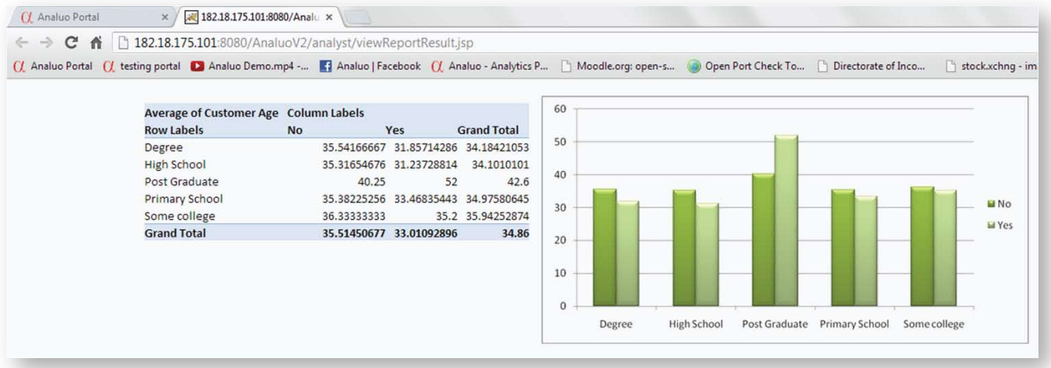
Publishing SPSS Reports



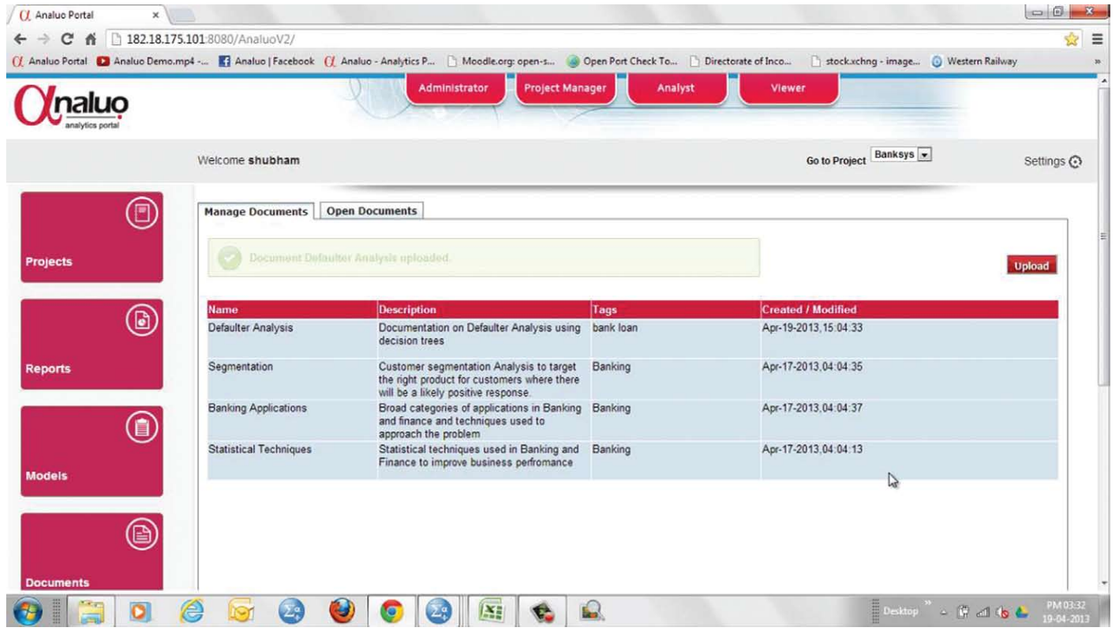
Publishing Excel Reports



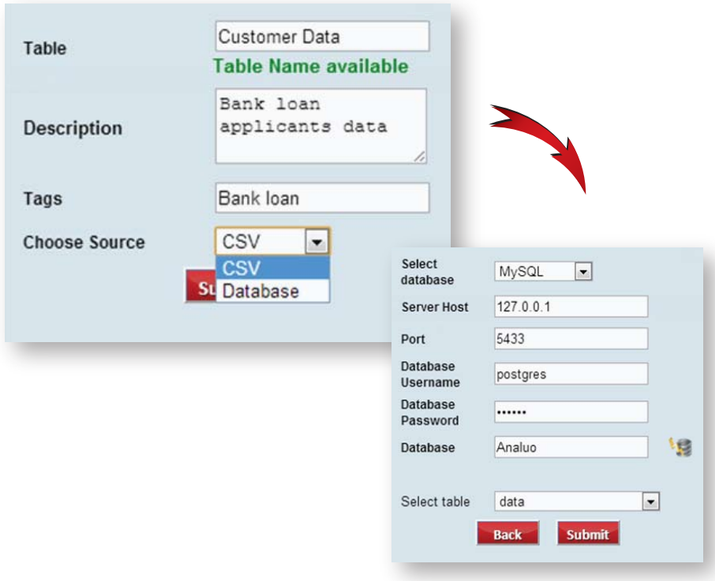


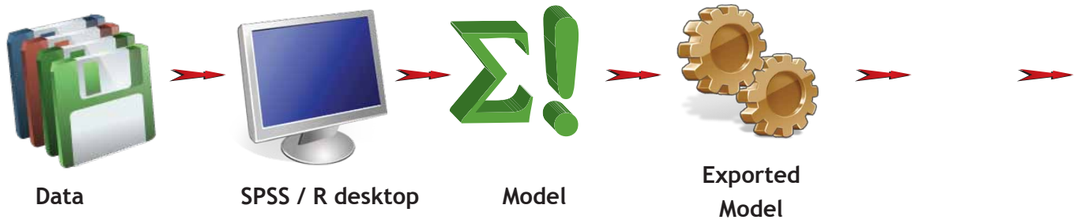


Store related data and documents together



Any Predictive Analysis related project will involve working with or producing a variety of related and relevant content, including PDF and MS Word documents, spreadsheets, presentations and even the occasional image or multimedia file as well as data. Given their importance as a source of future reference or as a knowledge-base, Analuo provides the capability to store and retrieve these documents along with reports and models produced by the analysis project. Analuo can even connect to popular data sources such as MySQL, PostGreSQL, Microsoft SQL and Oracle, so that moderate amounts of data could also be stored on Analuo as part of the analytics project.





In Predictive Analytics, mathematical techniques, often termed algorithms or procedures, are applied to data related to a parameter of intrest along with other observations to establish a mathematical formula that captures the relationship between the parameter and other observed phenomena. This mathematical relationship, termed a model, can thereafter be, used to predict the outcome, once the values of the observed phenomena are provided as input values. Though this can be achieved in batch mode, multiple records at a go, within SPSS and R themselves, there is no way to perform it outside these applications, apart from doing it manually, or entering and running the formula in a spreadsheet.

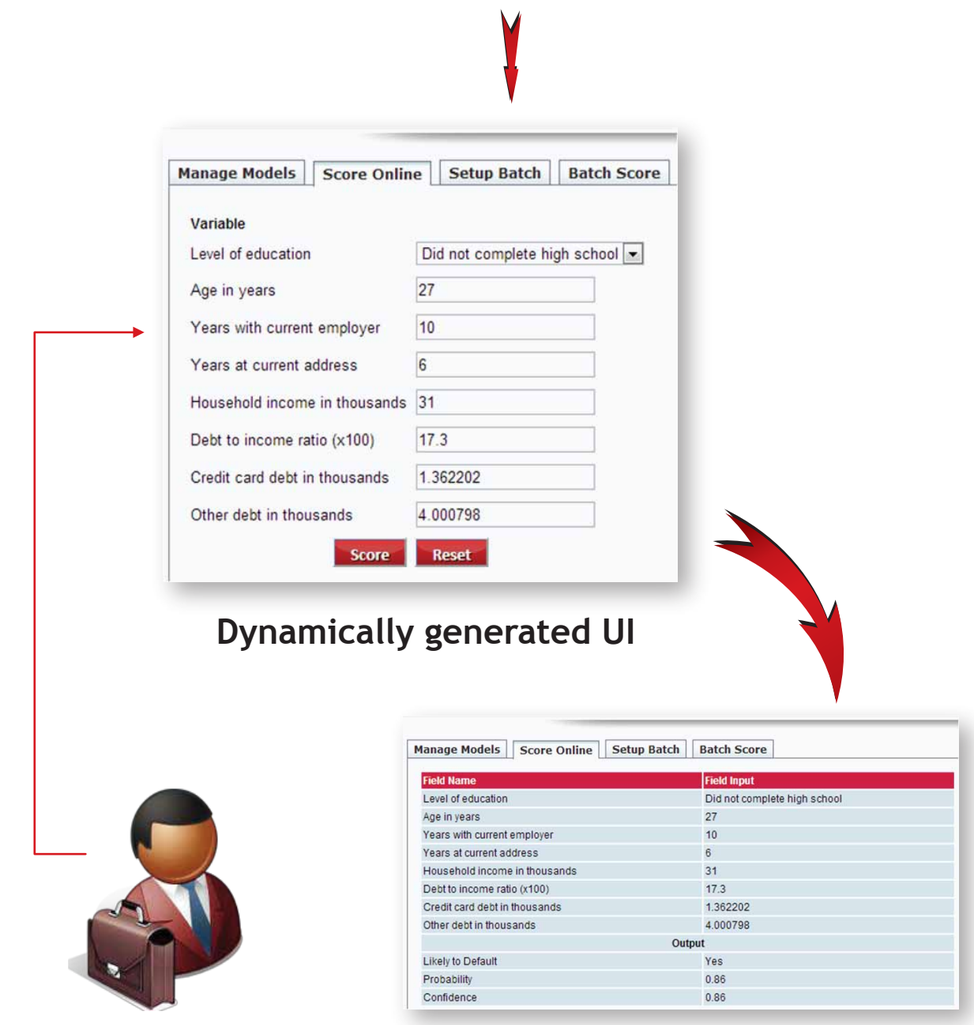
Predict online using SPSS and R generated models

However, SPSS and R provide the functionality of exporting these models as PMML files that follow the open Data Mining Group (DMG) standard, encapsulating all the complex mathematical information of the model in shareable format.

The unique feature of Analuo is that it can interpret these exported models, and generate a user interface (UI) dynamically.

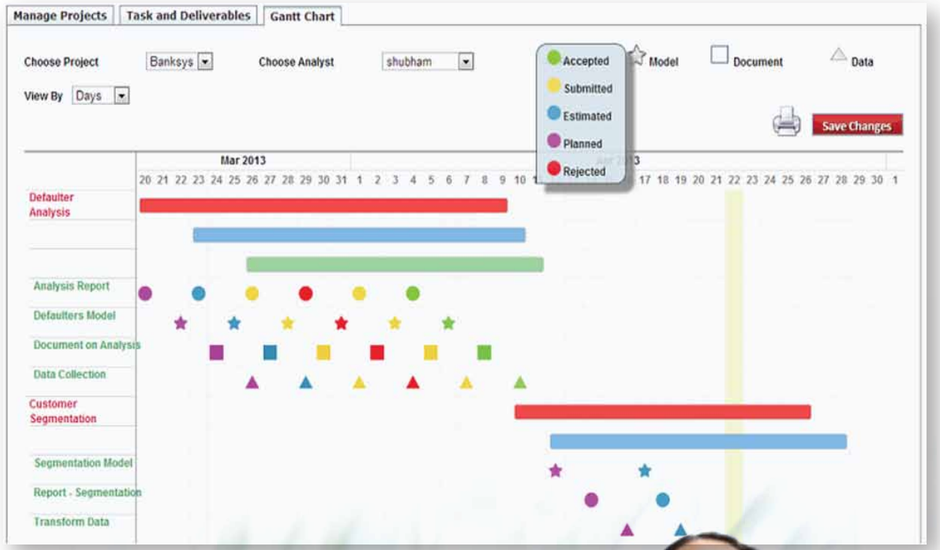
The UI makes it easy for a lay user to input the data and obtain a quick prediction, one value at a time. The UI changes every time the user chooses a new model or the model parameter itself changes. This allows the user to focus on getting the predictions without having to bother about the mathematical logic behind the models. This UI is available both for a browser as well as for a specialized Analuo app running on Android devices.

MODELS SUPPORTED	
SPSS Models	**R Models**
Neural Network ■ MLP ■ RBF **Decision Trees** ■ CHAID ■ Ex. CHAID ■ QUEST ■ CRT	**Linear Regression** **Logistic Regression** ■ Binomial ■ Multinational **Generalized Linear Model** **Generalized Estimating Equation** **Two Step Cluster** ■ Euclidean Distance **Cox Regression**	■ **hclust** ■ **kmeans** ■ **lm** ■ **nnet** ■ **rpart**



Manage project tasks and deliverables

An analytics project will have defined deliverables as well as tasks assigned to individual team members. Analuo's flexible task and deliverable management system not only allows tasks to be planned and tracked with a Gantt chart , but also the status of deliverables to be monitored. While Gantt bars make it easy to understand task durations and delays, colourised deliverable icons make it easy for team members to understand the type of deliverable – a report, document, model or even data – that needs submission against a deadline, as well as whether it has been rejected or accepted by the Project Manager.

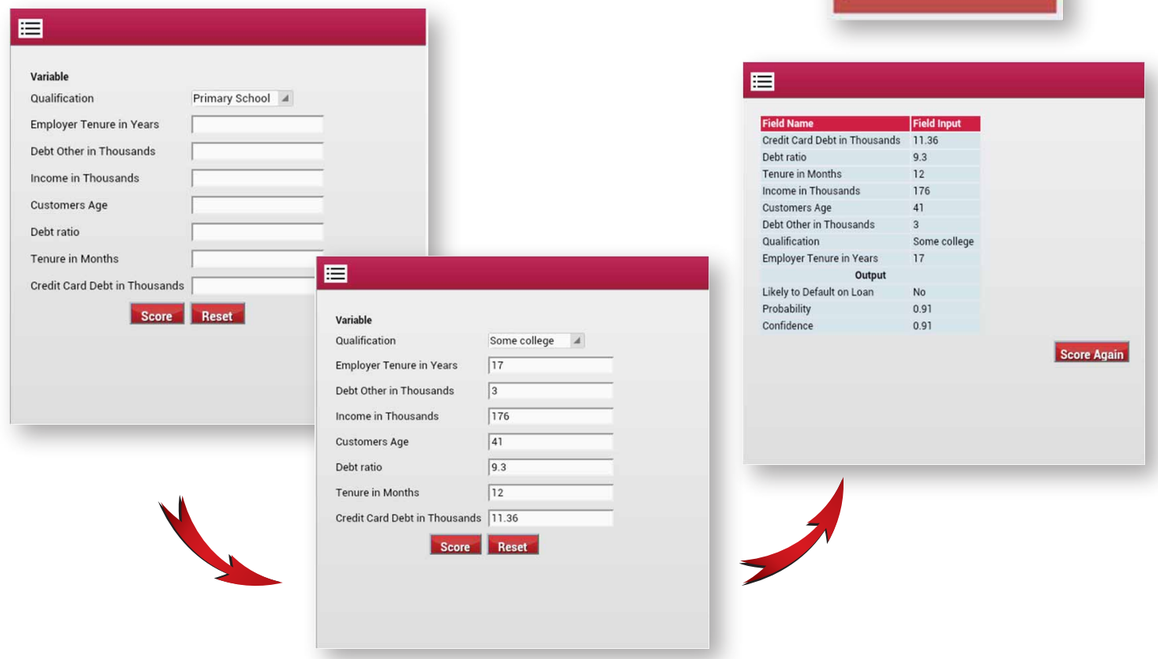


Collaborate through a Social Network like UI

People work on analytics projects as teams and need to communicate and collaborate with each other to take their work forward Analuo provides a collaborative social network like UI that allows members of projects teams to communicate and discuss among themselves from within the Analuo environment. This in effect provides an environment for active communication between analysts who create analytical reports and models and end-users who use them.

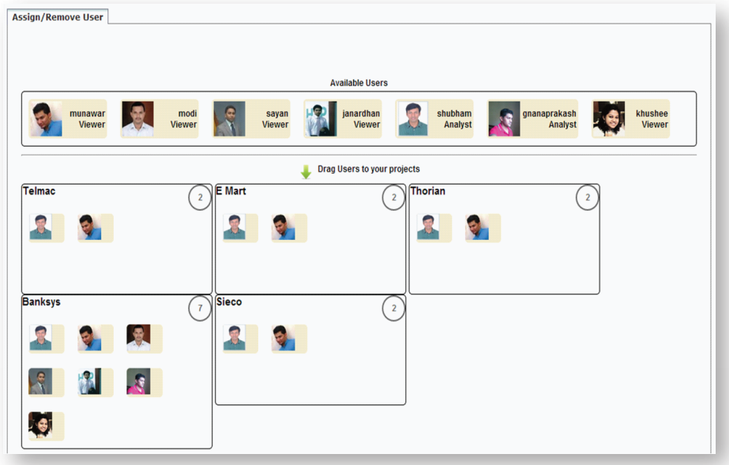
Access analytics from Android devices

Both the reports hosted online on Analuo Portal as well as the models hosted on Analuo via a specialized Analuo app running on android devices. This means the end user can take full advantage of sophisticated models devices by analyst and hosted on Analuo. With Analuo app end users can run online prediction on these models from remote locations from their android devices. They can also access and browse reports published on Analuo by analyst for additional information.



Organise people and content into Projects

Analysis is done by teams, not by individuals alone. As old work gets completed and new work gets undertaken, the content related to the work, as well as the people who perform it change over time. Sometimes even though work progress in parallel, it may also be necessary to keep them separate in the interest of confidentiality, information security and responsibility allocation. Analuo therefore follows a Project based architecture that allows people and the content to be grouped under as Projects.



A Project, managed by an user designated as a Project Manager, restricts the use of the Project's content, or assets, only to the members of that particular Project and no one else besides.

System Requirements for Analuo 2.0

1. Server

Hardware

- Processor – Intel i7 or equivalent
- Memory – 4GB RAM or more recommended. Memory needs to increase with increase in number of users, as well for high volume batch scoring requirements

Operating System

- Microsoft Windows Server 2003 Enterprise Edition Service Pack 2 or higher

Software

- **Database**
  - PostgreSQL 9.1.2
  - pgJDBC – A JDBC interface
- Apache Tomcat 5.5
- Java Runtime Environment (JRE) 1.6 and above
- Microsoft .NET Framework 4.0

Note: Dedicated server with no shared web applications running.

Network

TCP/IP network protocol

Port 8080 to be opened

2. Client

Software

- IBM SPSS Statistics 19 or 20 or 21
- IBM SPSS Statistics – Essentials for Python 19 or 20 or 21
  (The Essentials and Plugins for IBM SPSS Statistics Version 19 or 20 or 21 for Python.)
- Java Runtime Environment (JRE) 1.6 and above
- Excel 2007
- Microsoft Visual J#

Browser

- Best viewed in Google Chrome 26.0.1410.64 m

3. Android Enabled Devices

- Android OS 4.0 and above