Data Analytics Tool:
- Intimo, a clothing store, is in need of a way to analyze data they have acquired from past sales.
- Data analytics is common in larger stores because there is a vast majority of data that is obtained throughout the years that can help them attain insights to help increase their sales.
- Currently, Intimo does not have a system in place that allows them to use all the data that was collected in a way to make predictions that will increase their profitability and improve marketing.
- Having a system that can perform data analytics will help Intimo be more prepared for future sales.

Process Automation:
- Intimo is manually updating on processes tracking and shipping information orders. Intimo’s inventory is not synchronized with Yahoo! Small Business inventory.
- Automating the above tasks will save them time and will guarantee accuracy.

Current System
- Currently, Intimo has no way to analyze collected data.
- Intimo’s Inventory Database is not synchronized with the Yahoo Merchants Database. This process is currently being performed manually.
- Intimo does not control customer and order information nor can it create customized reports on such data.

Proposed System
The new system will allow users to access a secure application where they can fetch, customize and export reports on customers and orders data throughout the entire life of the business.

This system will enforce and maintain an automatic synchronization between the in-house inventory and Yahoo DB.

Requirements
My system functional requirements:
- Obtain a report of the customers who abandoned their shopping cart before completing their purchase.
- Manage security questions (add/update) when creating/updating an account.
- Validate setup security questions when attempting to update account.
- Edit account and reset password: The system should allow the user to update his/her account including the account’s password.
- Password Validation: The system validates the password when the user tries to login.
- Export Reports: The system should allow the user to export a fetched report.
- Inventory Synchronization: Intimo SQL Server inventory DB needs to be synchronized (upon order processing) with the Yahoo Merchant’s DB.

System Design
Below is a package diagram showing the main components of the system:

Object Design
This is the System Use Case Diagram

Implementation
- Data Analytics Tool is implemented in Java using NetBeans and Swing which is a Java GUI widget toolkit.
- The data for the reports is stored in a MySQL database and it is accessed from Java using JDBC.
- The data transfer from Yahoo! Merchants is implemented using REST calls and manipulated with XML. Below is a code snippet of the request call in java.

Verification
Below is the evaluation of the system test cases:

<table>
<thead>
<tr>
<th>Test Case #</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>System_ExportReport_SunnyDay</td>
<td>PASS</td>
</tr>
<tr>
<td>System_ExportReport_RainyDay</td>
<td>PASS</td>
</tr>
<tr>
<td>System_UpdateAccount_SunnyDay</td>
<td>PASS</td>
</tr>
<tr>
<td>System_UpdateAccount_RainyDay1</td>
<td>PASS</td>
</tr>
<tr>
<td>System_ValidatePassword_SunnyDay</td>
<td>PASS</td>
</tr>
<tr>
<td>System_ValidatePassword_RainyDay1</td>
<td>PASS</td>
</tr>
<tr>
<td>System_AbandonmentReport_SunnyDay</td>
<td>PASS</td>
</tr>
<tr>
<td>System_AbandonmentReport_RainyDay1</td>
<td>PASS</td>
</tr>
<tr>
<td>System_UpdateAccount_SunnyDay</td>
<td>PASS</td>
</tr>
<tr>
<td>System_UpdateAccount_RainyDay2</td>
<td>PASS</td>
</tr>
<tr>
<td>System_ValidatePassword_SunnyDay</td>
<td>PASS</td>
</tr>
<tr>
<td>System_ValidatePassword_RainyDay2</td>
<td>PASS</td>
</tr>
</tbody>
</table>

Screenshots
Export Report:
This report is customizable and exportable.

Abandonment Report:
Shows a report of customers who have reached the checkout page and for whatever reason canceled the order before executing it.

Data Transfer:
Report data is accessed from Yahoo! Via REST calls, then stored on MySQL database and then analyzed on java data processing algorithms.

Summary
- The Data Analytics functionality is completed.
- Reports to analyze order and customer data are available.
- Generated reports are customizable and exportable.
- Shipping and Tracking info is automatically updated on Yahoo Merchant’s Site
- Intimo’s Inventory is automatically synchronized with Yahoo Merchant’s DB upon processing an order.

Acknowledgement
I thank my group member Alicia Felix, for her great management work and from my mentor Sonia Centeno. I would also like to thank Masoud Sadjadi and Juan Caraballo for all the feedback and support given throughout the semester. Finally I thank the Stack Overflow java collaborative community for helping me decide on best design-coding approaches.