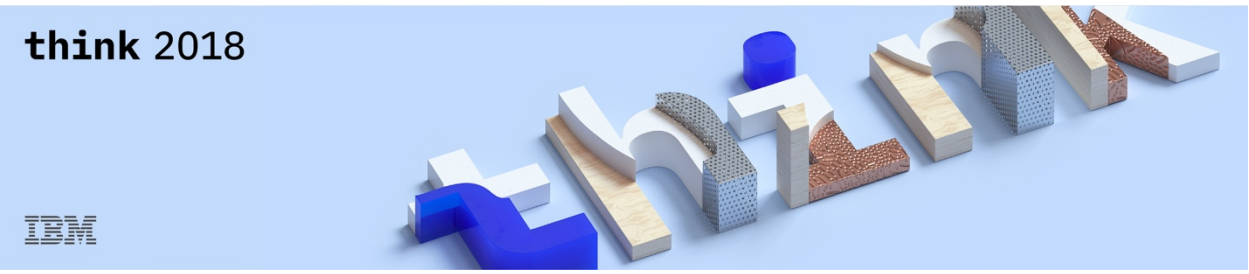

Lab Center – Hands-on Lab

Session 9600

Session Title Harness the power of IBM Mobile Analytics to define and derive customized insights

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IBM Mobile Analytics - Custom Data & Custom Charts

Custom Data is one of the very powerful feature in IBM Mobile Analytics service, which can be used to send any kind of data from the application. The same data can be leveraged as a metadata for using within the service for getting more insights from the Application. This customized insights can be used for understanding both the Operational and Business Analytics about the Mobile Application in the field.

For using Mobile Analytics, the mobile Application user needs to use the Analytics APIs offered via the Analytics Client SDK with very minimal development effort and extremely less time to learn.

This lab focuses on how to Analytics Logger APIs to send custom Data from mobile application to log various information about the User Navigation patterns. The recorded custom data then is used to orchestrate different custom Charts which can help the business/operations to understand the user flow and various navigation patterns.

This lab show cases the use of custom Data of Analytics and how the same can be done using Analytics SDK in a simple Mobile Application.

Lab Instructions can be downloaded from https://github.com/Think18/Lab9600 as well.

Procedure

1. Login into Ubuntu VM Provided with user id (**ibmuser**) and password (**passw0rd**)
2. From the Desktop open the "Terminal"
3. Change the directory to Desktop and clone the Android Project from GitHub using the following instructions –

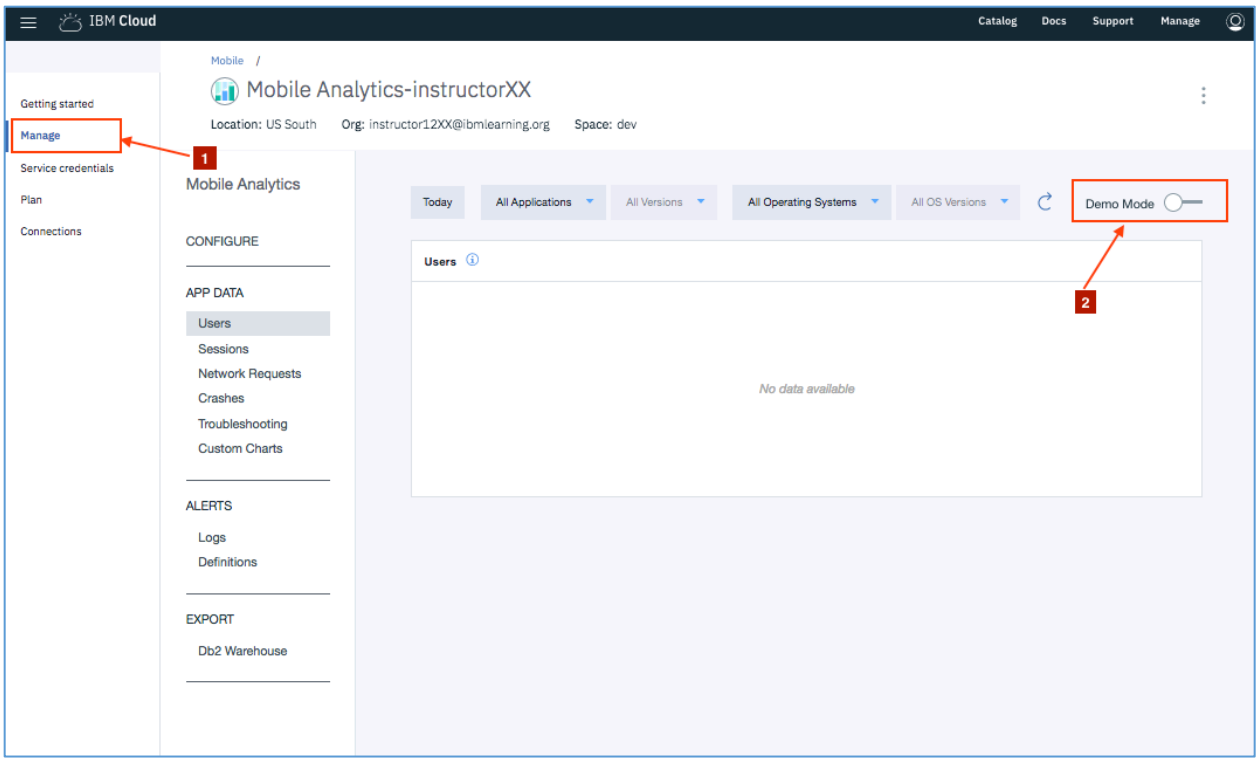
```
cd Desktop
git clone https://github.com/Think18/Lab9600.git
```

4. To Launch the Android Studio, on Terminal Type the following commands

```
cd /work/android-studio/bin
./studio.sh
```

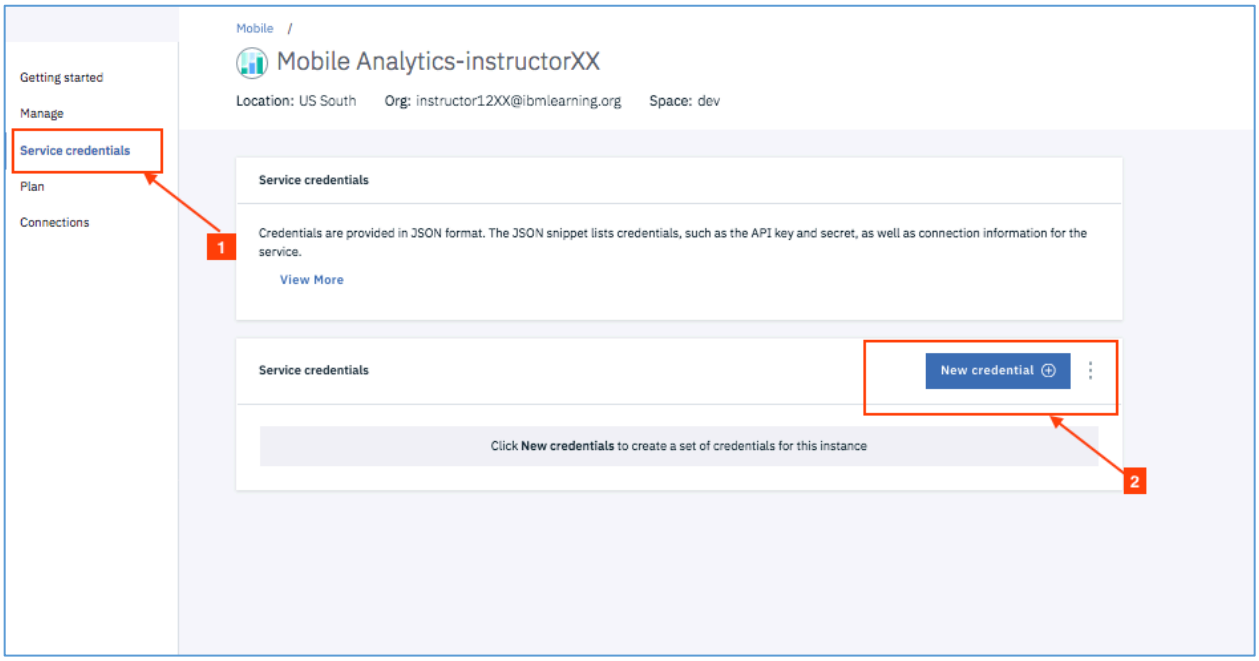
Creating the Mobile Analytics Service

5. Open the Firefox Browser and Login into the IBM Cloud Console Dashboard
6. Open the url https://console.bluemix.net
7. Click on **Login** Button
8. Enter the IBM (email)ID (use the Bluemix ID/Password provided) and Click **Continue** button
9. Enter the Password for the above provided IBM (email)ID and Click **SignIn** to Load the dashboard
10. On the Right Top of the Page Click the **Create Resource** button
11. Enter **Mobile Analytics** in the Text Box to filter and list the Mobile Analytics Service
12. Click the listed **Mobile Analytics** Service
13. (Optional) Enter a new Service Name as **MobileAnalytics-openLabXX** (say XX can be some ID used in the Login email ID) or any name you think that could be Unique
14. Scroll to the bottom of the Page and make sure the pricing plan selected is **Lite**
15. Click **Create button** at the bottom of the same page to create the Mobile Analytics Service
16. On the Service Dashboard > Left Side bar menu Click on **Manage** to view the empty dashboard – refer the below image – [1]
17. Switch of the **Demo Mode** slider button on the right side of the page refer the below image – [2]

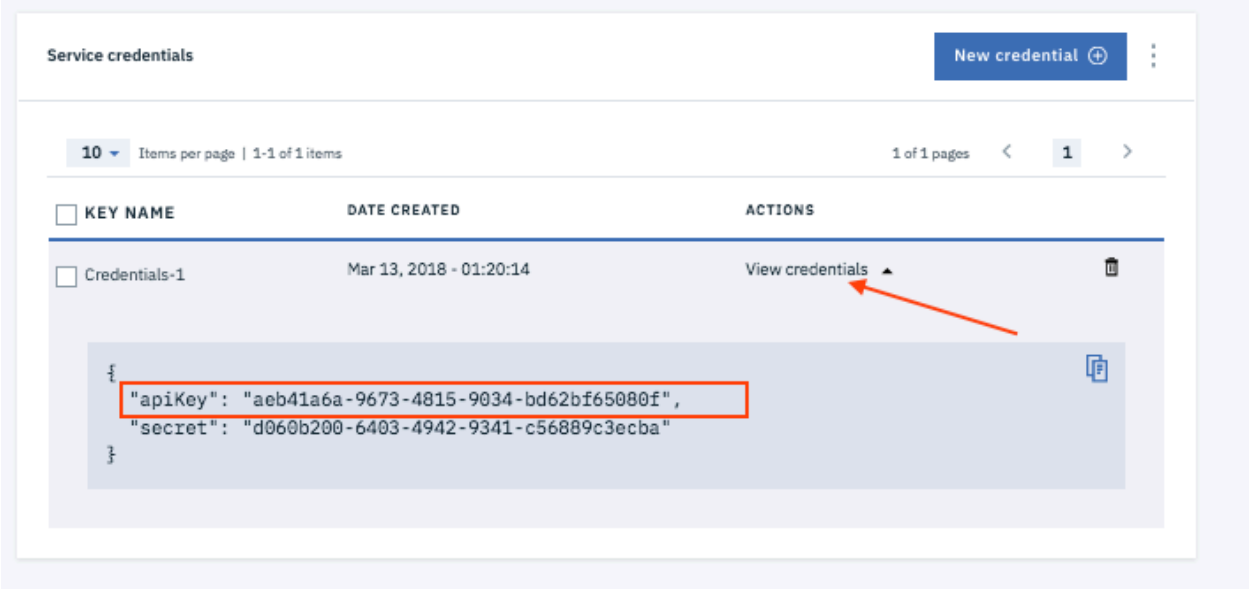


Creating the API Key on Service Dashboard

18. On the dashboard page > Click on **Service Credentials** menu (third menu item) > Click **New Credentials** button



19. On the **Add New Credential** dialog window, leave all values to default and press **Add** button to create the service Credentials
20. Now Click the **View Credentials** link as shown below and copy the **apiKey** Value



In this example **apiKey** value to be copied is `aeb41a6a-9673-4815-9034-bd62bf65080f`. This is unique for every service

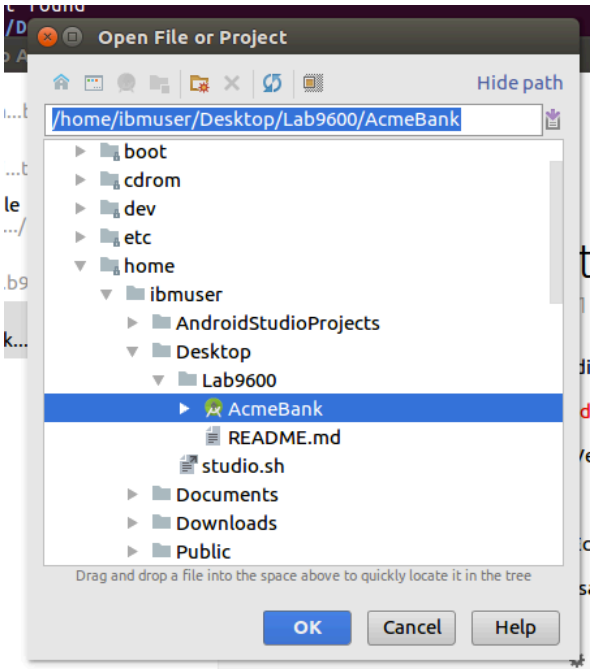
Loading the Mobile Application into Android Studio

21. Go to the **Terminal**
22. To open the Android Studio run the following commands

```
cd /work/android-studio/bin
./studio.sh
```

23. Once the Android Studio is open - if there are any already open projects, Close them. Click **File > Close Project**
24. On the **Welcome to Android Studio** Panel, Click on **Open an Existing Android Project**
25. On Open File/Folder dialog – browse to the location where the Android Sample was git cloned
    For this Lab : **/home/ibmuser/Desktop/Lab9600/AcmeBank**

    Refer the below image



26. Click **OK** to load the project into the Studio

    Note: On loading the project to the Android Studio, if the user encounters any need to install any plugins – it can be installed. User can click the same and proceed to install. It will be completed in 2-3 minutes maximum.

Using the Android Mobile Application to incorporate the Custom Data

27. In the Project View, Click & expand on the **app > java > com.acme.bank > activity** and Open the **CustomViewIconTextTabsActivity.java**
28. Locate **line# 51** and Modify the existing ApiKey (from step 20) as follows

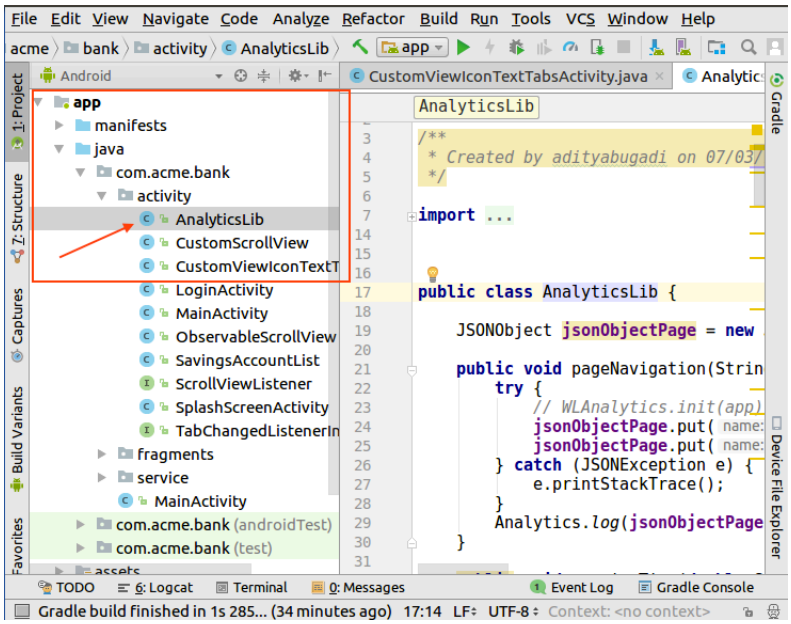
```
Analytics.init(getApplication(), "Acme Bank",
"<enter_your_apikey_here>", true, Analytics.DeviceEvent.ALL);
```

So it should look as similar to the following after the above change

```
Analytics.init(getApplication(), "Acme Bank", "08f14171-735f-43cc-b1a8-
c9c0abcb9344", true, Analytics.DeviceEvent.ALL);
```

This step will ensure your Application is connected to the Mobile Analytics Service you have created in this lab.

29. Again In the Project View, Click & expand on the **app > java > com.acme.bank > activity** and Open the **AnalyticsLib.java** (refer the image below)



30. This class takes care of recording various page activities performed on the Mobile Application, Some activities to refer are **fromPage, toPage, numberOfPagesVisited, onClosePage,...** etc. CustomData is used to save these activities. Here fromPage, toPage are customData which can be used to create CustomCharts later on the service Dashboard of MobileAnalytics Created on IBM Cloud

    Usually the Analytics API **Analytics.log( )** takes the parameter as **JsonObject,** so it is created as follows

```
JSONObject jsonObjectPage = new JSONObject();
jsonObjectPage.put("fromPage", sourcePage);
jsonObjectPage.put("toPage", destinationPage);
Analytics.log(jsonObjectPage); // Logging the Custom Data
```

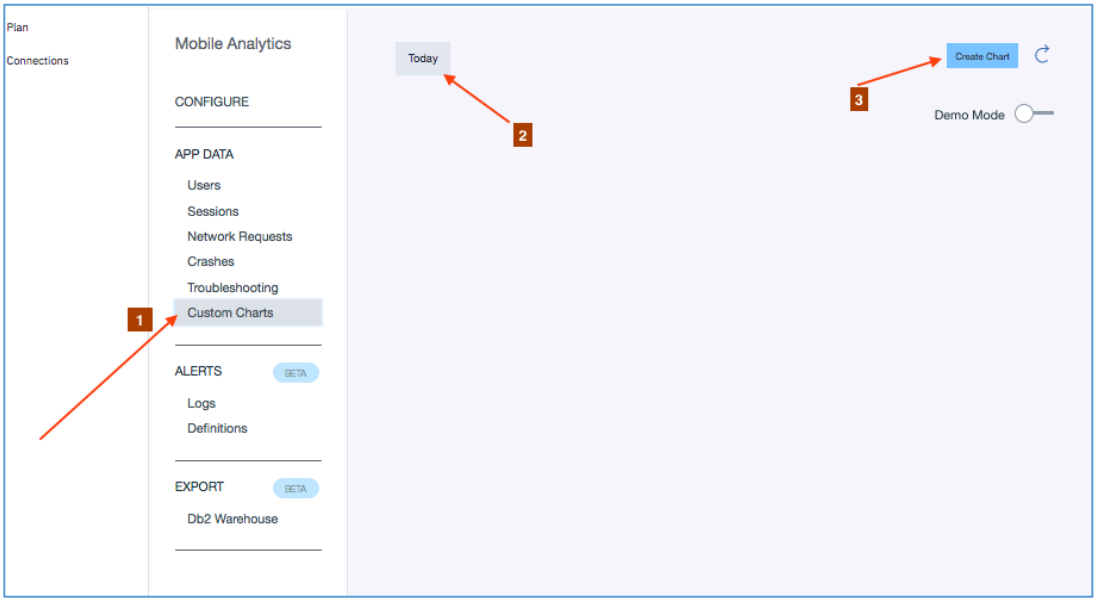
31. Analytics.log( ) API takes care of storing the customData in a buffer for sending it to the IBM Cloud Mobile Analytics Service Created initially in this lab.
32. Till the **Analytics.send( )** API is called in the Code the Analytics Log data (customData) not sent to the Mobile Analytics Service
33. Click on the Play button to Run the Project on the Device/Emulator.
34. Choose the **Nexus Device Emulator** from the List of Devices to run the Application
35. Wait for few minutes for the emulator to load the device and to start the Mobile Application

Using the Mobile App to record the Custom Data (App Activities)

36. Once the App starts running on the Mobile Emulator
37. Login into the Acme Bank App using user id(**user**) and password (**password**)
38. Now Play around with various pages of the Acme Bank App
39. The Navigation activities are logged as a part of CustomData and sent to the Analytics once the user performs the LogOut from the AcmeBank Application
40. Make sure the logout is performed on the AcmeBank App once your navigation across different views are complete. (This ensures the custom data sent to Analytics, without this action it wont send any customData – so user won't be able to see any app Activities on the Mobile Analytics Service Dashboard)

Creating Custom Charts on the Analytics Dashboard

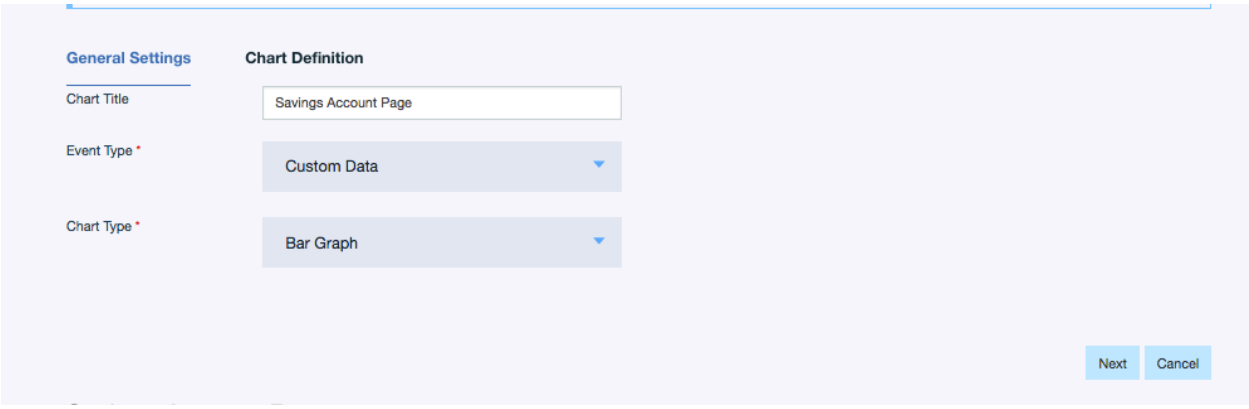
41. Open the Mobile Analytics Service Page Created on IBM Cloud (https://console.bluemix.net)
42. Double Click (to open) the Mobile Analytics Service created - that will be listed under Cloud Foundry Services
43. From the Left navigation menu, Click the **Manage** Menu to view the Dashboard



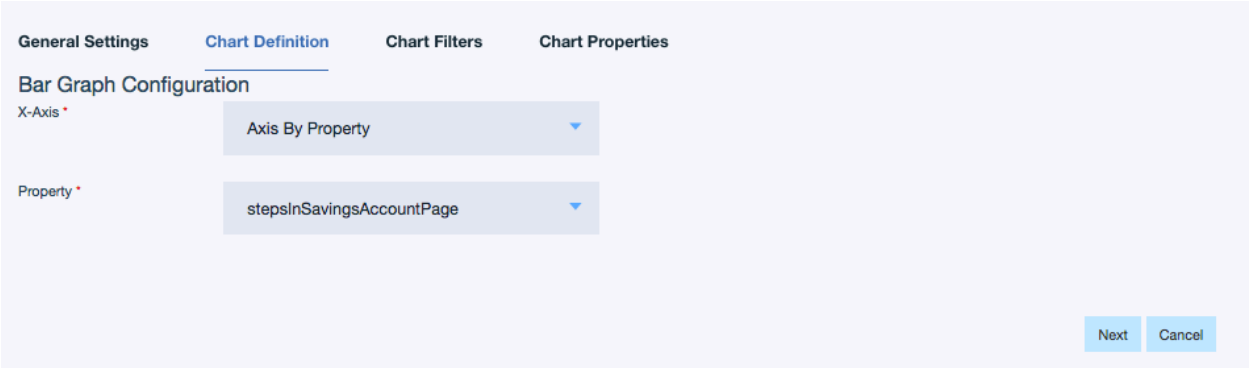
44. Click **Custom Charts** menu

Custom Chart - 1

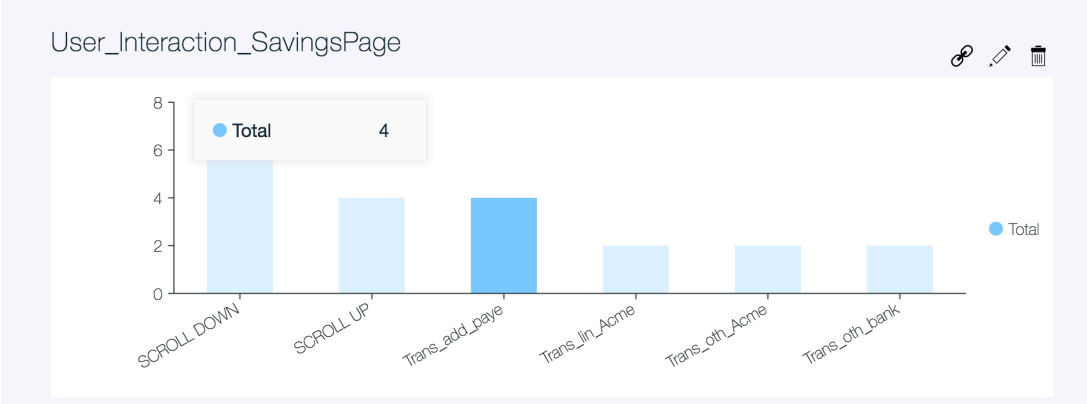
45. Make sure the date filter is selected **TODAY** and Click the button **Create Chart** on the left top corner of the page (refer the above image)
46. Under the **General Settings** tab, Enter following settings
    a. Chart Title : **User Interactions Savings Page**
    b. Event Type : Choose **Custom Data**
    c. Chart Type : Choose **Bar Graph**
    d. And Click **Next**



47. Under **Chart Definition**
    a. X-Axis : Choose **Axis By Property**
    b. Property : Choose **stepsInSavingsAccountPage**
    c. Click **Next** and Proceed to Finish to create the Chart

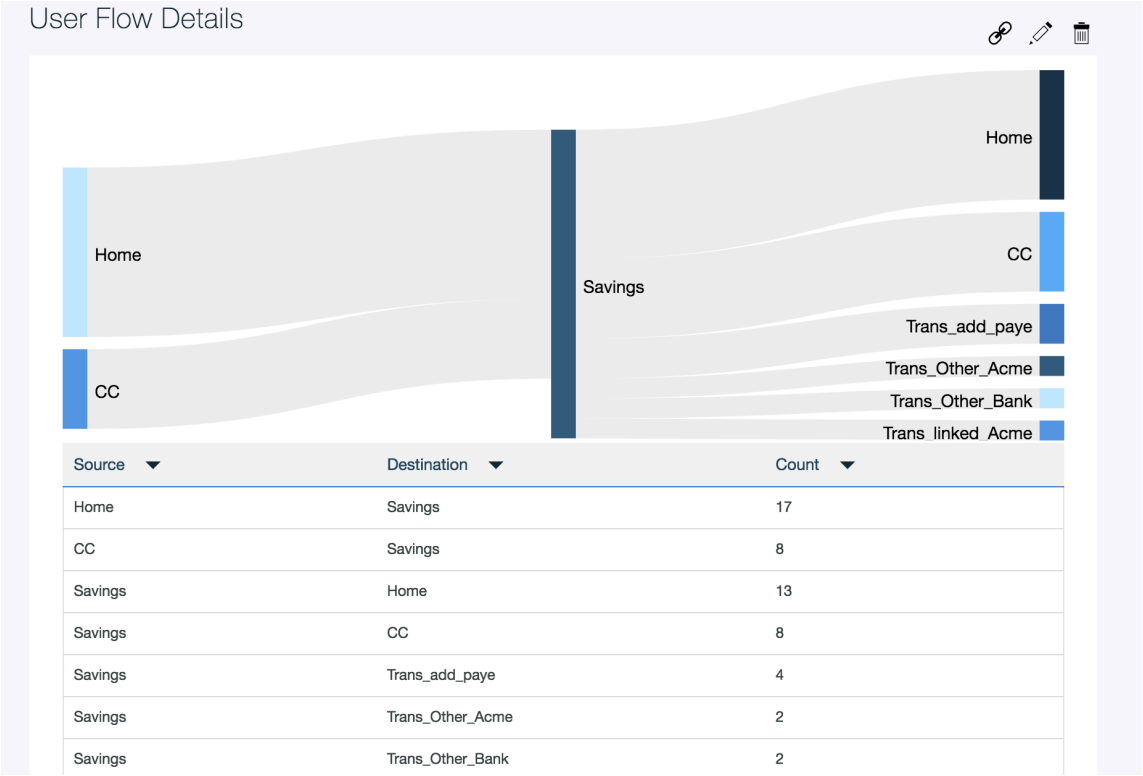


48. In similar way, You can create multiple custom Charts with other Custom Data.



Custom Chart - 2

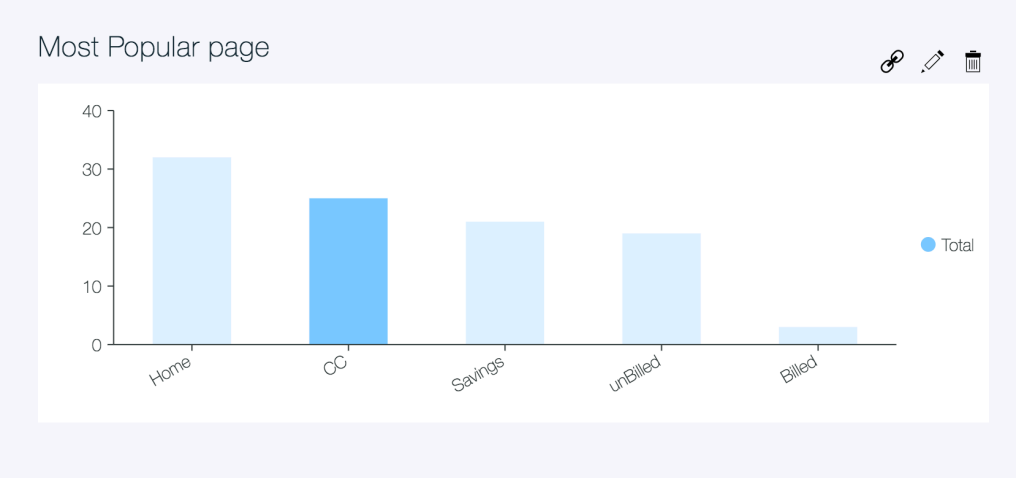
49. Click the button **Create Chart** on the left top corner of the page
50. Under the **General Settings** tab, Enter following settings
    a. Chart Title : **Savings Page Navigation**
    b. Event Type : Choose **Custom Data**
    c. Chart Type : Choose **Flow Chart**
    d. And Click **Next**
51. Under **Chart Definition**
    a. Source : Choose **FromPage**
    b. Destination : Choose **ToPage**
    c. Property : Choose **Savings**
    d. Click **Next** and Proceed to Finish to create the Chart



Source	Destination	Count
Home	Savings	17
CC	Savings	8
Savings	Home	13
Savings	CC	8
Savings	Trans_add_paye	4
Savings	Trans_Other_Acme	2
Savings	Trans_Other_Bank	2

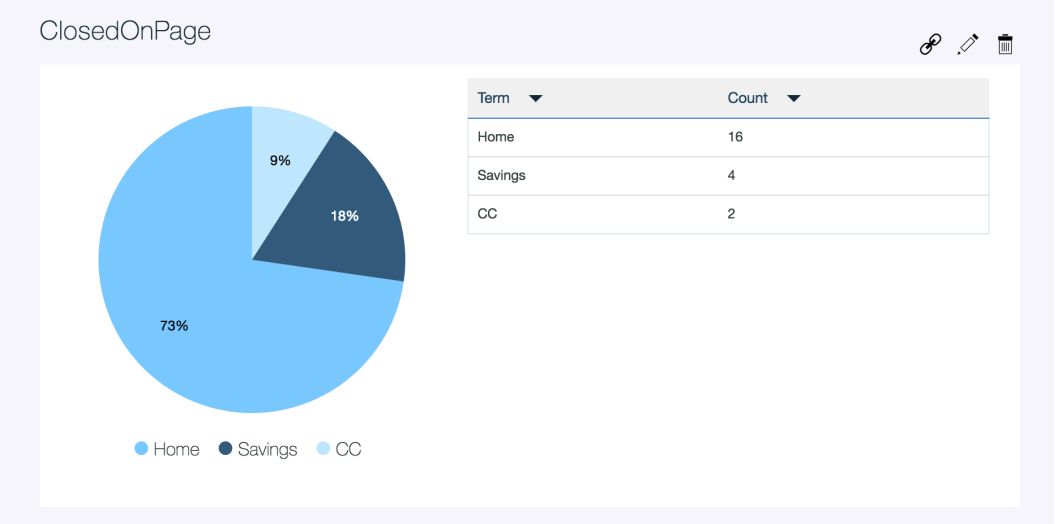
Custom Chart – 3

52. Click the button **Create Chart** on the left top corner of the page
53. Under the **General Settings** tab, Enter following settings
    a. Chart Title : **Average Session Time Chart**
    b. Event Type : Choose **Custom Data**
    c. Chart Type : Choose **Metric Group**
    d. And Click **Next**
54. Under **Chart Definition**
    a. Metric Title : Enter **Session**
    b. Measure : Choose **Average**
    c. Property : Choose **SessionTime**
    d. Click **Next** and Proceed to Finish to create the Chart



Custom Chart – 4

55. Click the button **Create Chart** on the left top corner of the page
56. Under the **General Settings** tab, Enter following settings
    a. Chart Title : **Closed On Page**
    b. Event Type : Choose **Custom Data**
    c. Chart Type : Choose **PieChart**
    d. And Click **Next**
57. Under **Chart Definition**
    a. Property : Choose **closedOnPage**
    b. Click **Next** and Proceed to Finish to create the Chart



Note: In similar ways, one can create various other charts with the listed custom data properties.

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