



PRESENTATION OF HIGHCHARTS

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AGENDA

- ❖ Introduction
- ❖ Statement of the Problem
- ❖ Purpose and Significance
- ❖ Review of Literature
- ❖ Research Questions
- ❖ Methodology
- ❖ Procedures
- ❖ Summary
- ❖ Questions
- ❖ References

INTRODUCTION

❖ HighCharts

- Highcharts is one of the leading tools in web charting (Kuan, 2015).
- Highcharts presents very appealing and professional-looking 2D/3D charts on the market.
- This is a product that stands out by paying attention to details.
- The charts are visually pleasant and still the style is simple.
- A JavaScript library completed in late 2009 by the Norwegian company called Highsoft AS, created and founded by Torstein Honsi (Kuan, 2015; Nelli, 2014).

❖ Short History of Web Charting

- Before jumping into Highcharts, it is worth mentioning that web charts evolved from pure HTML with server-side technology to this current client-side (Kuan, 2015).

STATEMENT OF THE PROBLEM

- ❖ Most people are apathetic with ordinary charts and therefore, they do not make use of such charts, to the extent that some web pages are unprofitable or uninformative due to the type of charts they feature. That is, some web pages are less visited than others because they have unattractive or unappealing charts.

PURPOSE AND SIGNIFICANCE OF STUDY

❖ Purpose

- To examine the difference between interactive and non-interactive Charts.
- Also, the purpose is to demonstrate Highcharts for better eye-catching interactive charts for web pages.

❖ Significance

- To pleasurable visualize statistical or scientific data
- The cores of a high quality visualization are the simultaneous features represented and the interaction tools which manipulate these features upon event capturing. These manipulations should provide the user the ability to focus on a specific subset of data and hover near other subsets (Eltayeby, Dwayne, Patel, & Simmerman, 2013)

LITERATURE REVIEW

ARE INTERACTIVE CHARTS INTERESTING?

- ❖ Interactive charts are visually pleasant (Kuan, 2015).
- ❖ External representations boost external cognition and visual thinking, and humans developed a rich set of skills for crafting and exploring them. In addition to mere visual exploration, the manipulation of external representations has been shown to be a key component of external cognition (Jansen & Dragicevic, 2013).
- ❖ Manipulations of data that provide the user the ability to focus on a specific subset of data and hover over other subsets (Eltayeb et al., 2013)

ARE NON-INTERACTIVE OR ORDINARY CHARTS INTERESTING?

- ❖ Non Interactive charts are not visually pleasant.
- ❖ External representations boost external cognition and visual thinking but not as effective as interactive.
- ❖ Does not exist in non-interactive charts.

RESEARCH QUESTION

- What is the difference between interactive and non-interactive or ordinary charts with respect to interest?

METHODOLOGY

❖ Research Design: A Critical evaluation of material to answer the research question.

- Highcharts-Editor: The *Highcharts Editor* is a JavaScript library for Highcharts 5 which enables non-programmers or any user to easily create and publish charts (Highcharts, 2017).
- Excel: For non-interactive or ordinary charts

PROCEDURES

❖ Highcharts Editor:

1. Go to <http://editor.highcharts.com/> ; it's best to use Google Chrome.
2. Click on "Full Editor"
3. Click on "Import"
4. The following table is going to be used as an example:

Categories	New Student	New Transfer Student	Continuing Student	Returning Student	Unclassified
2011	819	670	3303	885	253
2012	738	766	3369	864	323
2013	833	881	3352	803	310
2014	592	799	3493	734	281
2015	846	889	3614	335	420
2016	893	793	3814	284	439

PROCEDURES (CONT.)

You can type the following in the Import box. It's easier to upload a csv file. See "b".

a) Categories,New Student,New Transfer Student,Continuing Student,Returning Student,Unclassified

- 2011,819,670,3303,885,253
- 2012,738,766,3369,864,323
- 2013,833,881,3352,803,310
- 2014,592,799,3493,734,281
- 2015,846,889,3614,335,420
- 2016,893,793,3814,284,439

PROCEDURES (CONT.)

- b) You can also import a csv file. The attached csv contains the correct format. Click on this link to see a Youtube video that discusses the layout of the csv file. https://youtu.be/xM_KdeLV41c Click on “Upload & Import File”. The data should appear in the box.
- c) Delete the “.” In the Decimal Point Notation box.
- d) Click on the Import button. You should see a preview of your chart.
- e) Next, click on Templates to choose the chart you would like. For this example, I chose the Column Chart with Labels.
- f) Click on Customize
- g) The Titles option gives you the following information. I have typed the information in the boxes. The title, “Total Student Enrollment for the Fall 2011-2016 By Status” should be typed in the Chart Title box. “Number of Students” should be typed in the Y axis title box.

PROCEDURES (CONT.)

Titles

General

Appearance

Axes

Data series

Value labels

Legend

Tooltip

Exporting

Localization

Credits

Main titles

Chart title abc Total Student Enrollment for the Fall 2011-2016

Chart subtitle abc

Y axis title abc Number of Students

Total Student Enrollment for the Fall 2011-2016 By Status

Year	New Student	New Transfer Student	Continuing Student	Returning Student	Unclassified
2011	1 071	670	3 303	885	1
2012	1 061	864	3 369	0	0
2013	1 143	803	3 352	0	0
2014	873	734	3 493	0	0
2015	889	420	3 903	41	0
2016	893	439	3 814	0	0

Legend: New Student, New Transfer Student, Continuing Student, Returning Student, Unclassified

Navigation: Start Import Templates **Customize** Export

Taskbar: highcharts-editor.d...zip, tmp_5a4f16eb047...csv, tmp_5a4f16eb047...csv, tmp_5711e99b595f...c..., tmp_5711e99b595f...c..., tmp_5711e99b595f...c... Show all X

System Tray: 4:49 PM 12/12/2016

PROCEDURES (CONT.)

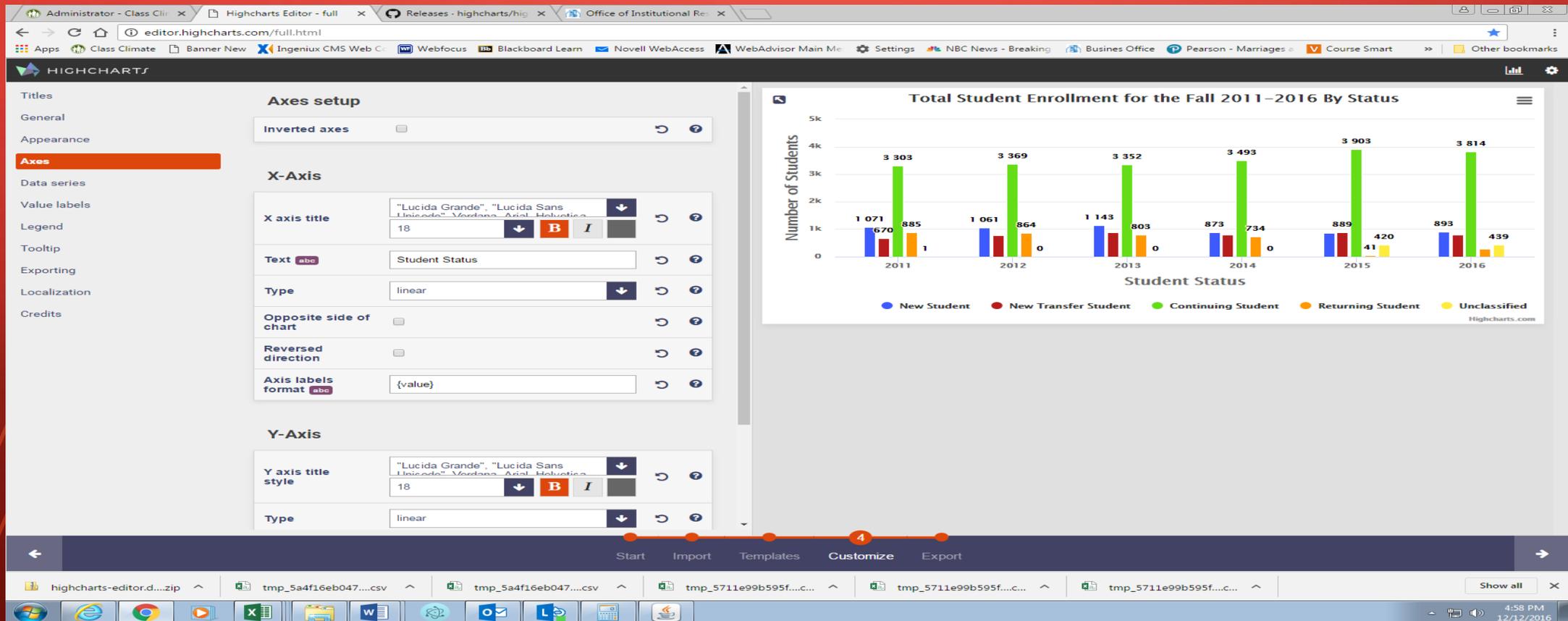
h) The Appearance option gives you the chance to change the font and series colors. If you click on the individual series color, you will be given different color options.

The screenshot displays the Highcharts Editor interface. On the left, the 'Appearance' settings are visible, including options for Font family, Font size, Main title style, Subtitle style, and Series colors. The 'Series colors' section shows a list of colors: #3d5afe, #b71c1c, #64dd17, #ff9800, and #ffeb3b. On the right, a bar chart titled 'Total Student Enrollment for the Fall 2011-2016 By Status' is shown. The chart displays the number of students for five categories: New Student, New Transfer Student, Continuing Student, Returning Student, and Unclassified, across the years 2011 to 2016. The Y-axis represents the Number of Students, ranging from 0 to 5k. The X-axis represents the Student Status. The chart data is as follows:

Year	New Student	New Transfer Student	Continuing Student	Returning Student	Unclassified
2011	1,071	670	3,303	885	1
2012	1,061	864	3,369	0	0
2013	1,143	803	3,352	0	0
2014	873	734	3,493	0	0
2015	889	41	3,903	420	0
2016	893	439	3,814	0	0

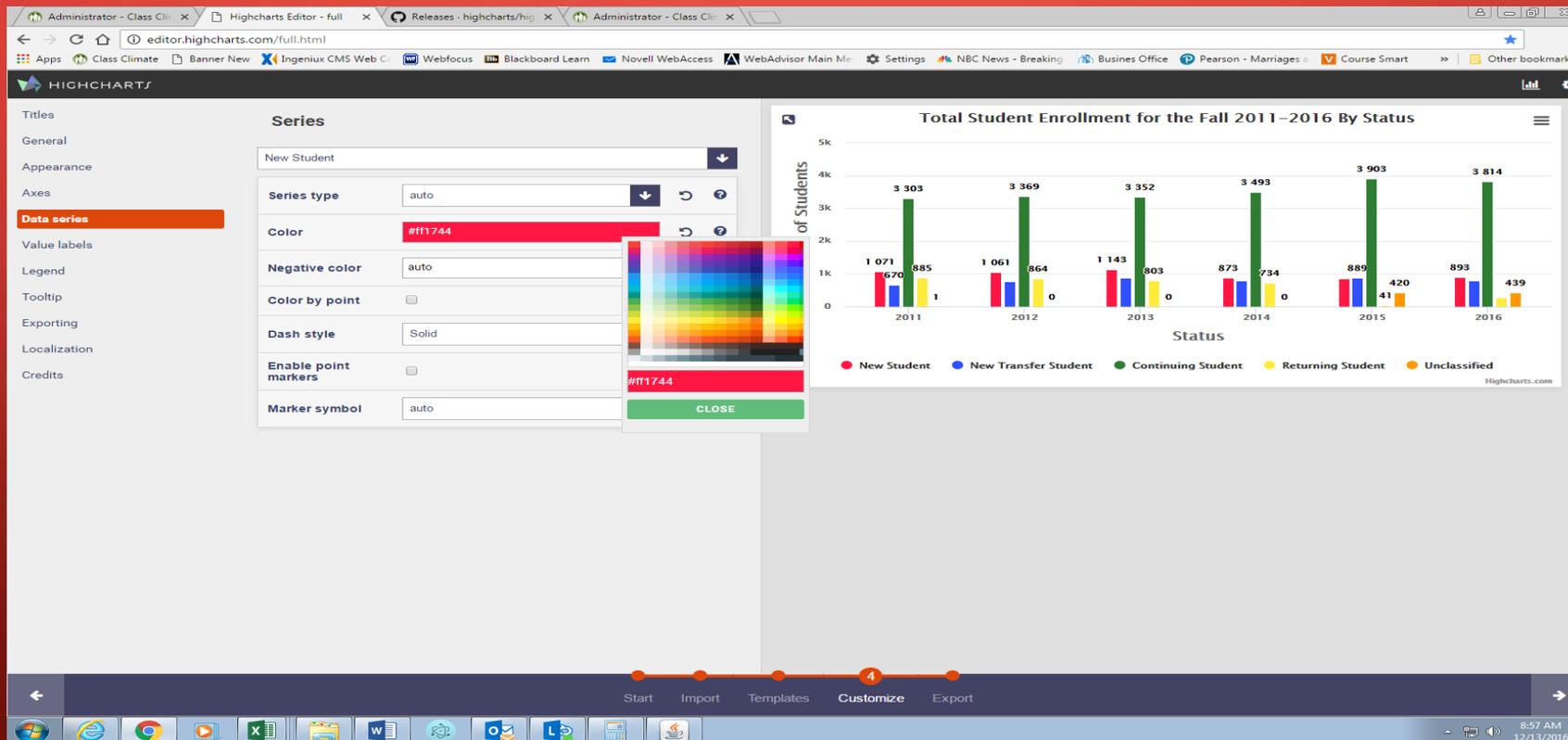
PROCEDURES (CONT.)

- i) The Axes option gives you the chance to change fonts and add additional labels to the X axis. I typed “Student Status” into the X-Axis Text box.



PROCEDURES (CONT.)

j) The Data Series option gives you the opportunity to customize individual series color and style. Click on the down arrow next to the first box. Choose the series. Next, hold your mouse arrow over the Color box and click. You will then see a secondary box pop up that will give you color options to choose. You can then repeat these steps with the remaining series.



PROCEDURES (CONT.)

- k) The Value labels option allows you to enable or disable data labels for the series by checking or un-checking the Enable data labels for all series box.
- l) The Legend options gives you the chance to enable or disable the legend and to change the placement and appearance of the legend.
- m) The Tooltip option lets you enable or disable Tooltip and also make changes to the color and border.
- n) The Exporting option allows you to export the html code.
- o) The Localization option allows you to change number formatting and to also choose buttons that appear on the menu.
- p) The Credits options allows you to enable or disable credits.
- q) Once you have made all your changes in Customize, click on Export at the bottom of the screen. You can download the html version or cut and paste this html code into another program such as Ingeniux for view on a webpage.

PROCEDURES (CONT.)

The screenshot displays the Highcharts Editor interface. On the left, there is a code editor showing the HTML code for the chart. On the right, a preview window shows a grouped bar chart titled "Total Student Enrollment for the Fall 2011-2016 By Status". The chart has a y-axis labeled "Number of Students" ranging from 0 to 5k and an x-axis labeled "Status" with years 2011 through 2016. The legend includes New Student (red), New Transfer Student (blue), Continuing Student (green), Returning Student (yellow), and Unclassified (orange). The total enrollment for each year is displayed above the bars: 3,303 (2011), 3,369 (2012), 3,352 (2013), 3,493 (2014), 3,903 (2015), and 3,814 (2016).

Year	New Student	New Transfer Student	Continuing Student	Returning Student	Unclassified	Total
2011	1,071	670	3,303	885	1	3,303
2012	1,061	864	3,369	0	0	3,369
2013	1,143	803	3,352	0	0	3,352
2014	873	734	3,493	0	0	3,493
2015	889	420	3,903	41	0	3,903
2016	893	439	3,814	0	0	3,814

The interface includes a navigation bar at the bottom with steps: Start, Import, Templates, Customize, and Export (highlighted with a '5'). The taskbar at the bottom shows the Windows taskbar with the time 9:02 AM on 12/13/2016.

PROCEDURES (CONT.)

r) You can also preview your chart, save the project, create a new chart, etc. by clicking on the setting button in the upper right-hand part of the screen.

The screenshot shows the Highcharts Editor interface. On the left, there is a code editor with XML/HTML code for the chart. Below the code editor is a 'DOWNLOAD' button. On the right, a bar chart titled 'Total Student Enrollment for the Fall 2011-2016 By Status' is displayed. The chart shows the number of students for each year from 2011 to 2015, categorized by status. The y-axis is labeled 'Number of Students' and ranges from 0 to 5k. The x-axis is labeled 'Status' and shows years from 2011 to 2016. A legend at the bottom identifies the categories: New Student (red), New Transfer Student (blue), Continuing Student (green), Returning Student (yellow), and Unclassified (orange). A settings menu is open on the right side of the chart area, showing options like 'Preview Chart', 'New Chart', 'Save Project', 'Load Project', 'Export as PNG', 'Export as JPEG', 'Export as SVG', 'Export as PDF', and 'Help'. The bottom navigation bar includes 'Start', 'Import', 'Templates', 'Customize', and 'Export' (which is highlighted with a red circle and the number 5). The Windows taskbar at the bottom shows the system tray with the date and time: 9:03 AM, 12/13/2016.

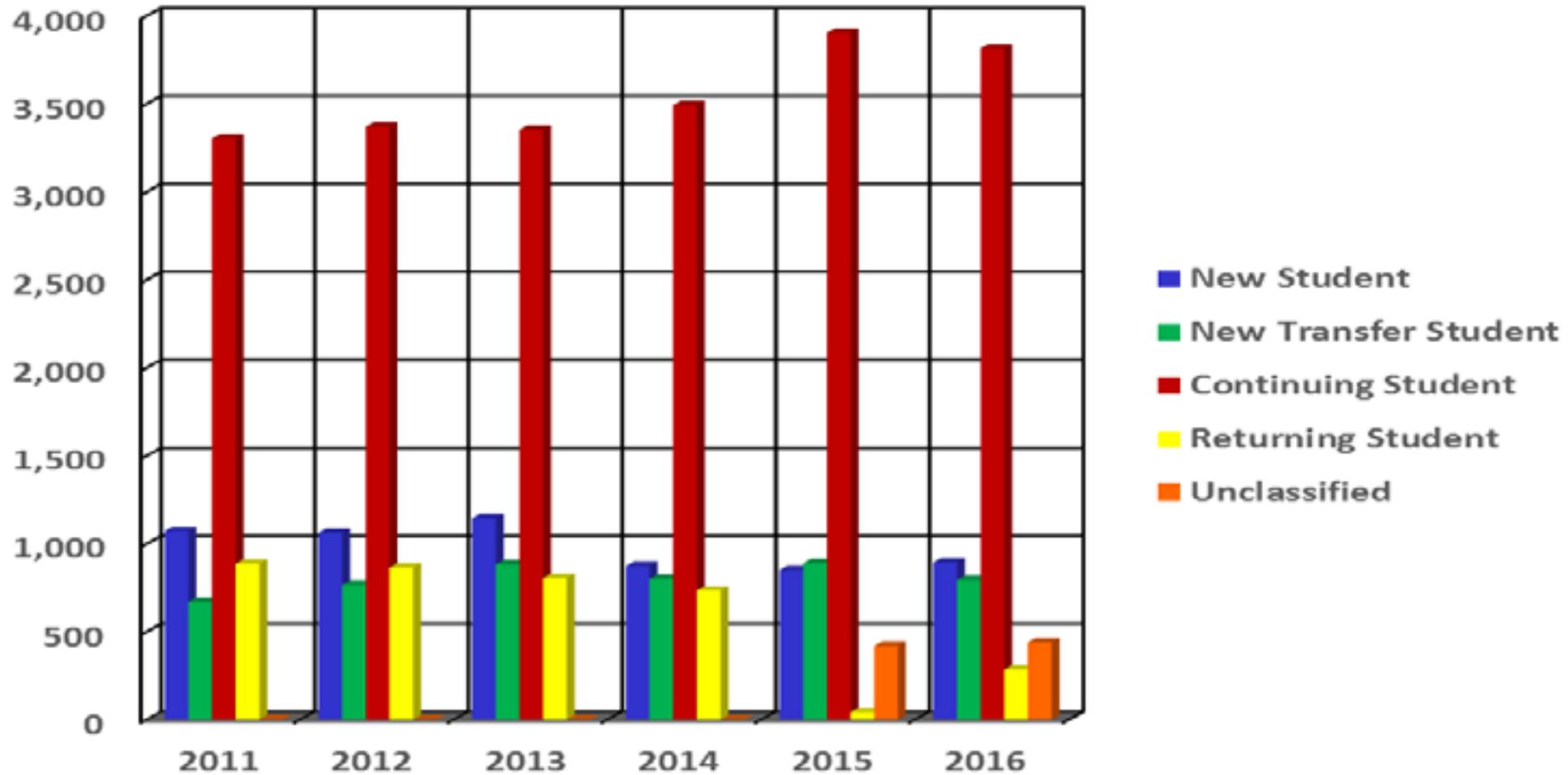
Year	New Student	New Transfer Student	Continuing Student	Returning Student	Unclassified
2011	1071	670	3303	885	1
2012	1061	864	3369	0	0
2013	1143	803	3352	0	0
2014	873	734	3493	0	0
2015	889	41	3903	420	0

PROCEDURES (CONT.)

- Creating Stacked charts follows similar procedures with column charts listed earlier.

PROCEDURES (CONT.)

- Non-interactive or Ordinary chart



SUMMARY

- Interactive charts such as Highcharts are more interesting than ordinary charts because interactive charts are more pleasant and manipulative. Therefore, they are more eye-catching and informative.



REFERENCES

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