Tableau Desktop Part 1 Transcript

Working with Data in Tableau

Good morning everyone we will be getting started in about 3 minutes. Before we get started I will put a poll question here on the screen. If you will please let us know how you heard about the tableau desktop.

Good morning everyone. My name is Amy Lorenz, chief of the customer assistance training and support (CATS) team. We are also the Tableau Desktop tableau server folks here in VBA.

Welcome to be Tableau Desktop training offered by the office of performance analysis and integrity. We’re glad that you could all join us and happy New Year. We are going to get started learn something new for those of you who are new to Tableau and Tableau Desktop and tableau in general. We are recording the session and it has been transcribed as well so we can post it to TMS and it will be available if you want to give that a look in the future as well. We are really excited to have you here. Looking forward to an exciting three hours of learning together, love what we do here and we love using tableau. We are glad to pass that along. Before we get started we have a few housekeeping items to cover. First if you would check your microphones, I think someone has an open mic can they can be a little distracting for others. If you would do me a favor and check and make sure you are muted, that would be great. Second and we are taking attendance so we can assign the TMS surveys after the course. That is what we are doing for the participation and TMS, if you take the survey that is how you get credit for attending training. And we appreciate your survey, we take that feedback and use it valuably and actually I will take an opportunity here to plug Tableau and to show you we do actively use your training -- or use your surveys.

This is an example of a workbook built by one of our to analysts so you can see here we look at your evaluation summaries, we record the number of people who have attended the courses, we take this information and use it to further develop training.

So I highly encourage you to complete those surveys. You also get TMS credit so what more could you ask for?

Okay I want to express that Tableau is a tool that is simple to use. It has lots of features and we cannot cover all of those features in these three sessions. This is meant to be an introduction to Tableau and the goal is simply to get you familiar enough with using the product so you can begin creating interactive analytic products as quickly as possible. Then we expect to continue developing your skills as you get more familiar with the product.

We will be working through some exercises and you are welcome to follow along. In the interests of everyone's time we were unable during the sessions to stop and wait for everyone to catch up.

That said, we have tried to make this as foolproof as possible. That way not that any of you are fools but we provide step-by-step instruction in the PowerPoint. We also have a list of resources after each session to help you find more information on a particular topic.

At the end of the presentation we’ll take some time if you’ll notice Stacy updated the meeting invites for today and in subsequent trainings to include an extra half an hour. That way if we need to we can take time and answer any questions you may have over go over anything else you may be interested in.

We also have some course assistants. These are Tableau SMEs, and they are on my staff and fantastic for you to reach out to. The first is Stacy Armstrong, the second is Kristin Speedling. And both of them will be available throughout the presentation. You can feel free to reach out to them and they will get back to you by the Lync window and if you have something you would like everyone in the group to hear or question you can type it into the Lync window and often times I will not be able to hear the beep because I am on do not disturb so one of those two will be the one -- responding to you by the chat window. We ask everybody to be on it but if you want to on me with -- on it yourself we can welcome that as well and if it is something we cannot answer during the course of the normal presentation we’ll set-up time to talk to you.

If you plan to follow along, you can download the course material [HERE](https://vaww.portal2.va.gov/sites/pai/TSCM/TableauDesktop/Tableau%20Intro%20Documents/Forms/AllItems.aspx). Let me share my monitor. Up here in the link window you will see little paperclip next to these little people. If you click on that come there are three downloads the first is the workbook, this is a package workbook you can hold onto. You can use again tomorrow or it will let you know where we would've ended up today. Here are some sample data. We will be working with that.

That is an Excel spreadsheet we will connect to using Tableau and then here is the PowerPoint the Tableau PowerPoint there for you to download so there are your course materials. You can also get that from the SharePoint site. If you are uncomfortable using the link window there is a link to the SharePoint site.

Primarily what we will use is the sample data. We downloaded that from data.gov. I did add one field to it but we’ll talk a little more about that when we look at the document. Are there any questions? Okay, we will jump right in there.

Here are the course objectives for today. This is the beginning of a three-part series, the purpose is to get you comfortable, introduction to Tableau and by the end of the third session you will have a workbook you will have developed using data source that we are using for this class so we will start with something and work through from scratch. I do want to point out this is an introductory class.

Firstly, a word about data cleansing and talk about understanding Tableau products. And we will take a look at different Tableau file types. Connecting to data and how to do that. Then we will look at editing, metadata, data about your data, so information like what type of field it is and things like that. How to rename columns, Creek aliases, then by the end of the first part we will have created the first view - a crossed tab view, it is like a little data -- data table and I think we will do a bar chart and then even look at creating a calculated field then of course provide you resources with getting lots more information.

Little bit about me I have a degree in computer information system and Tableau desktop certified and experience in online application systems development I’ve recently managed the transition from Excel-based reporting to Tableau-based reporting in the VBA environment. We manage the Tableau Server environment for VBA and I’ve worked with VBA since 2008 in a variety of capacities, but I’ve been with the office of performance analysis and integrity for just under five years now. And I love what we do. Before we get started this training has embedded images to demonstrate our activities and I provide step-by-step information but again we are just scratching the surface.

So there are some great resources. First of all, If you Google anything and type Tableau in there you will get a list of resources to answer your questions. But I know sometimes the questions themselves can be difficult. Tableau has some great help tools. I like to give people a quick example of these because they are so important.

If I go to Tableau.com and click on the learning and there you will see a series of free training videos from Tableau. If you click on that you can see here there is a bar, bar will actually, as long as you don’t clear the cache of your browser will keep track of how many minutes of this little overall session you participate in. For instance getting started videos, three videos here. First is 25 minutes but if you look here you will see most of Tableau videos about 5-7 minutes. In the little period of time you can actually take a quick lesson, and learn some valuable information. The other resources that Tableau offers are in -- I have a direct link here in the session -- PowerPoint. There is a support page. And here is the online help. You can just click that online help. And you will see here Tableau has a really great navigational system. It is not too hard to find any information. You can just click on there and follow the steps.

Okay. We have a Tableau Desktop Lunch & Learn series come up so in addition to these one-hour sessions, every two weeks it is hosted by Tableau and they are putting together a series where we will learn a whole bunch of other things like dig in more on calculated fields, we will dig in more on table calculation, all kinds of different things that you will scratch the surface of today.

Finally we have the tableau user group. -- VA Tableau user group and feel free to ask questions. -- That you have and we will get back to you as soon as possible.

Here is that link, in the PowerPoint, in the chat window now.

There were some other things we offer as far as resources or Tableau offers. If you have not already done so here is the link to the sample data file for anyone who joined late.

I think I have that here. It is in the chat window, just in case I will put it right there. >> This is an example of what you will end up with as of the third day if you stay for all three sessions. We will start with some raw data that I will show you in a moment and this will be an interactive dashboard so when you click on something, the rest of the dashboard items will filter and we will show you how to make the drop-down here so you can select a VISN. A little word about the data we are using here, again it was downloaded from data.gov. There is no PII or PHI. That allowed us to record the presentation and share them in a way that everybody could use, but it’s necessarily not meaningful to -- we want you stated that people might be more familiar with but I would not take this and go publish it is some great insight you have learned into the VA data so just a little word about that.

Tableau products, Tableau comes primarily three products that we use here in VA. First is Tableau Desktop and that is what you will be using today. Tableau Desktop is a data analysis software that is installed to your local computer. It is registered to you as a user of someone else locked into the computer they will not be able to use it but if they register, they would be registered user.

Tableau reader similar to what you would use to read a PDF file. If you create a Tableau packaged workbook but, someone without the full version of desktop can use and interact with your data without actually having access to making changes to the views or anything like that so similar to a PDF file. There is no way to lock a workbook and make it only available in a packaged workbook with the reader, but it does allow people without the full version to interact with the data.

Finally Tableau server is a web-based interface for workbooks design and Tableau Desktop. It allows users to work with the data but just in an interactive web-based form. Are there any questions about that?

POLL: Okay before we get started on the data cleansing, exercise, interested to know how much experience you have with data cleansing. >>

Okay great…interesting, this is what we’ve ended up with a couple times. It looks like majority of people are unfamiliar. You may actually be more familiar than you are recognizing because I'm using the term like data cleansing or data scrubbing. Really you have done it but probably just not aware of it like manipulating data we have missing fields, adding data in, things like that.

We will talk a little bit about that as we go forward, with that in mind that a lot of you don’t have experience. Before you start any project your data has to be formatted in all logical way that allows the software to perform the way you expect and provide accurate results. Anyone who is built a chart in Excel and had to move the data row to get format right has done some form of data cleansing so be confident in that. If you worked in Excel at all. So cleansing or scrubbing may include the following: normalizing data which we will talk about here momentarily, removing data that is incorrect or incomplete, properly formatting into a broken column structure and properly formatting numbers and to tax or vice a versa, unmerging cells and adding unique IDs, or ensure data is accurate. Normalizing data, let me give you an example of this. Say we have data in this cross tab format, I will demonstrate on the screen in a minute. Just for you to watch, not something you'll follow along with here in the first session but give you a couple of examples of what normalized data looks like if you are unfamiliar with it.

Crosstab makes a lot of sense to people. We would look at a table like this and if we see the year go across like this and we understand this is although in my bring this is backwards [Laughter] we can see this is the transition between year over year income.

But in a normalized data set, Tableau is going to want to use it in a way that’s shaped more like this; where the year is a separate column, rather than a column across the top. -- Let me give you an example as to why. And I will jump in Tableau and we will do more work here and this is a demonstration so don't feel like you need to follow along at this point just giving you an example of normalized data.

If I open Tableau, and we will step through this in a minute, I did open that once I guess. I will go head and connect to a file here. >> I will show you what has happened with the data in the two ways I just demonstrated in the PowerPoint. Here is our bad data example.

-- and tableau’s loading this now. We will step through this a minute. But you can see here I’ve got my VISN, my facility, and then I’ve got three years across the top. And if I go into work with the data in Tableau, you will see here my measures are listed in three separate little columns. But in essence these are three things we want to compare to each other, right? We want to make this a date and make it a field and we will get more into dimensions and measures here momentarily.

You can clean the data up so say and went right back into my Excel spreadsheet. I could clean the data up come to create a column called year. And now if I go over year, it put my year down there. But now I would have my year as one, two, three here so you can still get to the view that you're looking for but the way it is going to come in in the data, would be more -- this would be called normalized. >> Okay. So you can do it in Tableau and this is where I will give you a resource or a reference here on getting the data but if I come back and to might that data example you can clean that appear in Tableau. And you can have it that data and Tableau will do that for you or you can go back to the data source.

We will dig a little bit more into this but I'm trying to give you an example of what normalized versus crosstab data looks like. Are there questions about that before I continue? >> I trust some of this will make more sense as we proceed but I just want to make the point about instead of having all of your data go across in columns like this you want to put whatever you can into rows.

When you are cleaning up data, doing all those things like inserting columns, changing something from a text to numeric value, for instance, sometimes for instance in the VBA environment our file numbers come in as numbers and drops the leading zeros, right? So if a Veteran’s file number was 00123, it would just be 123 which is not the full file number. So we would change often times a numeric value to a text value, okay?

Tableau uses whatever is the properties of the data that you bring in from Excel. It uses that to make determination about how it assigns the data.

You can use a lot of Excel data cleansing tools before you even bring your workbook into Tableau. Once -- one strong recommendation is you keep a clean and raw data example so for any reason you need to go back to original data source, you could do that.

You can then use some of Excel functions like remove duplicates, any number of things. Not really necessary to trim in Tableau but this is an example of one you might use. >> That is just a quick reference on data cleansing, thinking about how you are bring in the data into Tableau, okay? And where you want to make modifications.

When you build something in Tableau, Tableau will not write back to your Excel spreadsheet, okay? Tableau will consume what is in your Excel spreadsheet and turn it into visualization. Always important to think about what you are bringing into Tableau.

There is information from articles available in the PowerPoint so if you are more interested in learning about data cleansing you can do that from here. Any questions before we proceed? >> Okay.

In Tableau there are three file types, we'll talk him Terry here first and I promise it will all come together by the end of the third hour. Tableau when you create a file in Tableau it is originally saved as a.TWB file so that will be your original file. A Tableau data extract is a compressed snapshot of the data stored on disk and loaded into memory. So that is required to run through this visualization. You will not always need a Tableau data abstract and we will cover in some cases when you will and will not.

Packaged workbook is your.TWB file but contains all the data within it. So the reason that is important is saying in my.TWB file, I am connected to Excel or an Oracle data source or some other data source. I want to send my workbook to someone but they don't have access to the data source or the drive with that data source sits. What I can do is I can create a package workbook and will pull all of the data in and make it into a nice profile so like a zip file for Tableau. So we will create a Tableau package workbook at the end of the third session.

And now we will jump in and start putting some of the theory into more practice. Let me get you back over here. >> And talk a little bit about get you going. Here we go. When you first open Tableau, feel free to open Tableau and follow along, this is the welcome screen in many of you might of been here already. You can see I have some things I have referenced recently. Here is the connect menu. Here is the connect menu where we select a file or data source to connect to. Here are some sample workbooks, Tableau gives a great examples and they tend to use sales data so if you want to see anything that work with any of their data, they've given you example data sets. Here are some of those tools I showed you as far as learning to you can get there right from within Tableau. And then to have some great blogs and other good stuff like that. So when you will connect to a data source, really pretty straightforward here and you click on connect. This example I will click Excel. You should have saved the sample data file, Excel spreadsheet we provided in the session.

If you click on Excel, you will see you will be prompted to select a data source, I have a busy desktop here but this is a sample data source right here.

I will just select the file and click open here in the bottom. It starts out here, this is the data pane. And here you can see I have a couple of things going here, here is a connection the Excel spreadsheet that I’m connected to. I can edit it from the drop-down menu. Tableau has drop-down menus on just about everything. You will come to rely on those and I’ll reference them frequently.

Here you can see all of the different spreadsheets available in my data source. What I will do is for this exercise I will select the infrastructure data source. I will do that by dragging and dropping, I use my left mouse button and drag it over to where it says drag sheets here.

Now Tableau has brought it in, first data source right here. Or first connection to the sheet that we are connected to.

And up here you will see we have life connection or extract. If you remember when I talked about .TDE file a minute ago, this is how you would create a .TDE file. For Excel workbooks it is not necessary but if you are connected to Oracle or MS SQL data source, you might want to create an extract and work with the data locally. Keep in mind the larger the data source the larger the extract will be. So you will -- might want to add a filter and filtered down and just bring in a subset of your data to work with.

You can create an extract if you do this when you save the workbook it will prompt you or when you go to a sheet it will prompt you to save the .TDE file somewhere. For this case we will work with this as a live connection. And that just means it will be connected to the Excel spreadsheet rather than a .TDE file. Questions about that?

I have a whole list in the PowerPoint up references for data extract , the first time we get the training we had quite a few questions come up about it which was really helpful. There is other resources in the PowerPoint that will help you learn more about data extract and when to use them, when not to. Now what we do, say we have our data extract here and this is a preview of the data we are working with. If I want to work with the data I want to click on this sheet one here found on the lower left-hand corners of you click on that you will be in the Tableau workspace. Now Tableau is automatically going to assign data to either dimension or measures based on the data type so you remember how I talked about in Excel, Tableau interprets database and the way it is in your workbook, so if you have something in Excel that you have listed as text that should be numeric or vice a versa, that is how Tableau will interpret it.

You can see here Tableau gets it right, does a pretty good job with it but a couple of problems we haven't our data that we will fix here in a minute.

To familiarize you with the actual layout here, this is what I call the data pane. Here is a dimension and measure and it is anything categorical, city is categorical, facility name is categorical or is measures of things value that we want to count, sum, average and things like that. Okay? >> Next to have the pages shelf and we don't use this very often, it allows you to create visualizations that kind of move and interact and Tableau server does not support it so we tend not -- wait we can interact with all data sources but this makes those like moving timeline then draws things on screen. We don't use that much but know that it is there and you might find it interesting one day.

This is your filter shelf right here, where you will drop items that you want to filter on. This is the marks card, it will be your best friend by the time date three is over. Well actually day 2. This is where you can make all kinds of changes to your visualization and workspace which this is your workspace right here.

You will see here we have a row and the column shelf, this helps us to find where we will place objects by dragging things over here or you can drop them right on the sheet. You will be able to interact with the workspace. Down here you can add your sheets and this is your dashboard and you create story points and we don't touch much on story points here but we provide resources in the third session.

You can create new worksheets here and you can also come up here to the file menu and say worksheet, new, new dashboard.

And then appear another magical tool from Tableau, so easy for data structuring, all of these are great all right not -- grayed out because I don't have them some of the purpose of the show me menu that shows recommendations for what kind of chart sites to collect based on the data you want to initialize so we will look a little bit at that in just a minute. >>

Before we get into building our first visualization I want to talk about field properties in metadata. So metadata is a set of data that describes and gives information about data sets.

It’s important to keep in mind as mentioned before, everything we do in Tableau will stay within this workbook. This is your editing metadata in the workbook and will not go back to the worksheet, okay?

For instance and I talked about the dimensions of measures of the and how Tableau data assigning of things based on interpretation of the data.

So now what I will do is start with our first field property here and metadata. You see this FY sample data illustration only, that is kind of a long field name and if that into so people knew that I added that to the data so that way when we were working with it people knew it did not come from data.gov but we needed a data field in here. So let us go ahead and rename this and remember how I said that was going to be a drop-down for everything and if you click the drop-down, and you can click the rename.

Or you can write click and click rename. Whatever is more comfortable for you.

Now you can just call it sample data. Go ahead and type right in there. Now it is renamed. If you want to ever undo that change it can go in and hit rename and click the little circular button and it will go back to what it original field the name was. You can always undo your change.

Editing your first bit of metadata. Sounds fancy but really super simple. What else we have here, problem because we have station here is down in my measures so if I want to use station right now, it is not considered a categorical field, it has found it has summed it. I am giving you an example here in if I try to use it and put it on my visualization, workspace, it says sum station, no instance in where I ever want to sum station, right? So in Tableau it’s really easy to switch this from measure to a dimension. I will just use my left mouse button and drag that right up to stage dimensions. Now you can see here still a number, this field indicates what data type it is. It is still a number. But it is a dimension. Now when I drag it to my new sheet, now we have one value for every station. That is a difference between us to. So again edited the metadata. Let us go ahead and go the same for the VISN, I can just drag VISN up here to my dimension. And again it does that it doesn't because of numeric values in the Excel spreadsheet.

Any questions? So far. Okay.

I showed you example of how it summed the VISN workbook and automatically Tableau will default aggregate to sum. So let's say we want our aggregation to be average every time we use it and I do want to have to change it every time. So what I can do is I can actually set the metadata on a field to be a default type of aggregation so I will select any field, we will select total FTE for this example and you can either click the drop-down or use the right mouse button.

Here is the option for default properties. I will go ahead and click aggregation. Default properties menu. And I can select average.

Okay. Now when I drag on the total FTE, you can see here it is set to average instead of sum. You can change it on the mark, I can change it right here in this property. I can select drop-down here on the row and it says measure average. I can switch back to sum. Fundamentally when I add the value it will be the average because I set it here.

Okay. That is a metadata property and again to get there I select drop-down and went to default properties and I selected aggregation and then I said average. I will set it back to sum because I am showing an example.

But you can do that with any of these measures. There is some additional resources for field properties of you're interested in learning more. In the PowerPoint. >> That is it for metadata, any questions about that?

Okay we will go ahead with how to create a view and again the instructions are listed step-by-step in the PowerPoint so if you are at any point feeling behind open up the PowerPoint and you can follow along there and I am currently on slide twenty-five. How to create a view is so simple.

I will drag VISN from my dimension panel over here to the rows shelf. And I have one row for each VISN, Okay. Tableau automatically creates what every data set you bring in a number of records. It will tell you how many records there are in your data set. This is actually a calculated field which we will talk about the end of the presentation but you can tell the calculated field because of the little equals sign. It’s one record in your data set. If we looked at the calculated field you will see the value of one so it’s just counting every record.

I will go ahead double-click on my number of records and I want to count how many records are in my data set at this point. You can see here now this is just a quick process view, by VISN how many records a have in my -- how many records I have in this data set for each VISN.

If you stay on the show me menu by clicking on the upper right-hand corner, you can see here that these are not all grayed out anymore. There are some options I can select from the Tableau and it says I think this would be best for your data and I will go ahead and select horizontal bar so I will click on that.

Now we have five VISNs and number of records but it is visually represented here. >> This is nice but I could use a little bit more information. Let's go ahead and use the left mouse button to drag VISN name next to VISN so you can see you can add multiple dimensions.

And I can come right here on the sheet if I hover right here since some of my names are cut off, I can manually resize that so we can see the entire VISN name.

Now I will go ahead and -- the blue is nice but say we want to show some variation on the blue as to how many records we have. I can take my number of records again hear from the measures panel, and break that on to color ,so use the left mouse button. I drag it onto the color option here so this is your marks card and this is where we will become very familiar here, and we will go over this in more detail tomorrow.

But now my number of records is also driving my color on my sheet. >> Finally I will click on label. I will click this checkbox here for shell mark labels. And now you can see we have a label on the side of our sheet. One important thing and you might not do this is often in Excel but in Tableau it will be important for building dashboards, I highly recommend you rename each sheet so in this one I will call number of records per VISN. That is it, you’ve created your first view. Anyone have any trouble or any questions about that? >> I think someone has an open microphone, we are recording. Especially if someone is listening to the recording it can be distracting.

Thank you.

This is your view results, again steps are outlined. I did want to show you the soft icon here. See this guy right here? If I want to reshape my data without starting all over, I can click the icon and it will show me and reshape the data right there in Tableau for me. Pretty handy feature, right here in the middle and I think it is also control W, is what will do it so if you are a hotkey person, you can use that.

Finally we will talk a little bit about creating calculated fields. Data source may not contain all of the data you need to analyze or analyze a measure that you want to. For instance in this case say we want to find the number of registered nurses per VISN, right? I mean we have the number but we want to find a percent of total FTE so that is something we would want to create a calculated field for.

A calculated field is just like a calculated column in Excel, right? If I right-click here, we will create one row here and if I right-click on registered nurses per FTE, you will see here I have an option to create a calculated field. So I hit create calculated field and it will come up with the dialog box. This is a calculated field dialog box. >> Up here is your name so you always want to come up with the meaningful name. I will call this rate of our ends to total FTE.

This is a pretty simple calculation, I will show you here if you are trying to get more detail calculations, Tableau has a handy reference here where you can click on any of these and get information about how to use that expression or function , sorry. So in this case were actually really going to do a simple mathematical equation. I will divide the number of registered nurses by FTE and start typing Total FTE and you’ll see it’ll give me the option I can select or you can drag your total FTE here right onto your sheet. And now it is just giving us a number registered nurses FTE divided by total FTE.

Okay. >>

I will click okay. I want to point out before I do that here you have the gray that is a calculation is valid. You notice if I have missed typed something, or something did not work, right? This calculation is going to say contained errors and it will actually tell me -- does a pretty good job of telling me what the errors are in this case.

It will tell me here I cannot divide float value by date value so I cannot divide a value by a date so I will go back to my total FTE and it says calculation valid even if I was just missing a character, Tableau would say column name missing.

It will tell me what is missing. And then I can click okay. But that is it for calculated fields, as I pointed out here you will see the little = next to your calculated fields. So if I wanted to edit that I can use the right-click. And go to edit. And now I am back to my dialog box in the calculation.

Okay. What if we done today, we created of you and look at data cleansing, we talked about normalization, we talked about the workspace and part of the view, we looked at calculated fields and we will take more into this calculated field tomorrow but I will give you a little hint, there is a problem with our calculated field. It works but it will end up in something really interesting tomorrow. You will have to come back to find out more when we talk tomorrow.

Here is Tableau reference on calculated fields. It is one of those areas that can be simple and complex so feel free to read it again and there is great essential guide to Tableau calculated deals with examples, really helpful. That is what I'm going for, Matthew [Laughter] so tomorrow we will look forward to talking more about data visualization, we will look at some of the best practices for data visualization like when you use the probably turn and things like that. Some people think never used by chart and I argue that occasionally there is a good reason to use a pie chart but only in certain circumstances and then we will talk about how to create those views, we will look at bar charts and geographic maps, some other options for different data types, right? Depends on what type of data you are working depends on what kind of view you’re going to use. Then we will look at formatting menu and how to do all the great stuff that you can format. And that will frustrate you because it is not Excel, so you will learn that quickly course and that we will look at filtering and sorting data, how to filter by selection, create filters in the view and how to sort data. And we will also talk about table calculations, table calculations are different than a calculated field so I will highlight that and obviously give you some more resources for going forward.

But that we will stick around for a few minutes and this is a quiet group and we made a right to have 10 minutes left. We've been kind of struggling to hang on, I think everybody is coming back from the new year. That or some of you have been here before. That or some of you are hanging out again for another session which is great too.

Again more information on where to get lots more, I will hit on this twice every session for the next couple of days so sorry if that might get a little annoying but try to make a point there that we use these resources, so helpful.

With that I will be happy to answer any questions but we will go ahead and wrap up the actual formal part of this session. Feel free to ask questions if you have any of we will hang out here and thank you again for joining us today we have enjoyed be sessions and look forward to learning more with you.

Happy new year to you. Tableau reader is available, it is a free download, I don't know how they -- we have it on our VBA applications menu but it is available and free for download so I think you have to check with your IT folks, but I’m not sure how they do it in VHA. You can send me an email and I can give you some more information on that as well.

You're welcome, everybody. Have a great day. Welcome back to work.

[event concluded]