**Meeting in \_General\_-20231023\_082955-Meeting Recording**

0:22  
So with that guess we are ready to go for today.

0:26  
Very good morning to everyone.

0:28  
Where the morning applies for some of you, it will be already a little bit later in the morning.

0:35  
So we are back to our weekly lecture in the Selected Topics in Geo Informatics series.

0:43  
My own background is a bit unusual today because in Salzburg this week we are starting the International Day to Week conference and I'm at the conference venue before we dive into the agenda for the conference, which by the way will provide some recordings in terms of data science which might be of interest later on for you.

1:10  
So if you try to find these on the IDW 2023 year old friend this.

1:17  
But for this morning I'm more than happy to welcome Van Manukian from the Yerevan State University.

1:28  
We have been in contact for quite a while collaborating in international projects, currently in a project which is looking into enhancing digital Earth's curriculum for a variety of disciplines and it's a great collaboration.

1:50  
So that's a perfect fit into that context as well.

1:55  
Before we get started, let me remind everyone that first of all, this session is being recorded.

2:00  
Secondly, please feel free to ask questions anytime through the Chatter Q&A.

2:08  
This does not mean that the question will be responded to in real time.

2:14  
We definitely will be looking at the end of the talk into whatever has been collected there.

2:20  
But again, feel free to put questions there anytime.

2:24  
And at the end when another Nasakulova will be moderating the Q&A, feel free to open your microphone during the talk, please make sure and that your microphones are being kept muted.

2:40  
With that, I guess we can kick it off into today's lecture.

2:44  
You can all already see the topic shared there, creating and sharing web maps.

2:52  
And this is a basic and at the same time very fundamental topic today, because as we all know, web maps are not just maps on the web.

3:05  
They serve in a way different purpose than traditional maps where we had one directional idea of someone is to also have a map and someone else hopefully reads the map.

3:20  
Web maps are much more frames for dialogue reference, frameworks for interaction and that's why the creation and of course sharing, creating and not sharing a web map would be kind of a contradiction in terms is an absolutely key way of doing, yeah, we call it sometimes Geo communication, which is the foundation also for public participation.

3:50  
But with that, I don't want to take any more time away from the speaker today.

3:56  
Raham, over to you.

3:58  
Please unmute yourself and take it away from here.

4:03  
Thank you.

4:04  
Thank you Professor Strabel.

4:05  
Hello dear students, Dear participants, I hope my screen visible for you.

4:12  
And the topic of today's is creating and sharing web maps.

4:17  
What is a web Map?

4:19  
An R JS web map is an interactive display of geographic information that you can use to tell stories and answer questions.

4:28  
They may contain a base map and the set of data layers which also referred as operational layers, many of which include interactive pop up windows with information about the data.

4:43  
Web maps can also be time enabled, have default extent, and provide navigation tools to pan and zone.

4:53  
On this example we can see the monthly snowpack of the earth starting from the period of 2000 until 2023 and we can see on winter months the snow.

5:13  
The area with the snow is very covered with the snow areas.

5:23  
See when we interacting with the areas randomly putting on one places we can see the information about the snow.

5:34  
Water equivalent 75 millimetres.

5:37  
It's mean that after melting and this area it will be probably have 75 millimetres of melted water.

5:49  
Web maps support visualization, editing, analysis time and they can be viewed in various ways including mobile devices, desktop application and web browsers.

6:03  
We can use an RJS online environment to put together the base map and operational layers to create web map and share it through the mobile application, desktop and web application.

6:25  
We can share it through the URL link.

6:30  
There are a few address information products.

6:33  
One of it is static map which is a stationary graphic representation of the spatial relationship of entities within an area.

6:41  
It can be printed on a paper or produced as a digital file.

6:47  
On this example we can see a geological map of the earth where different areas with the different structures have different colours according to the legend.

7:00  
A web map.

7:02  
Another example, A web map is a web-based interactive visualisation of geospatial content in two dimensions and they can be viewed and queried on various devices.

7:15  
Here we can see on this example the COVID cases for Nigeria by States and when we going to interact with it randomly on the pop up window we can read the information about COVID cases, confirmed issues, recovered dead and active issues here.

7:46  
Another informed market product is a website which is a web-based interactive visualization of geospatial content in three dimensions.

7:55  
The website can be viewed from different perspectives.

8:00  
Here on this example we can see the website with the three data which is from the meter line example.

8:09  
It's composed of different types of 3D3D3 dimensional files including general hate file, topography and other features.

8:20  
And we can see that all that is on 3 dimensional mode and on pop up window.

8:25  
We can also interact with it and read information about buildings, trees, and everything around this website.

8:42  
Another example type of the information product is a time map, which includes one or more temporal layers that represent change over time.

8:57  
They can be played to visualize how the information in the map change over time.

9:03  
On this example we can see the household statistics in Mexico and the time the data time it's about information from 2010 and 2020.

9:17  
Comparing there is 2.

9:21  
It's only average occupants per room and bedrooms per home.

9:31  
And when we dragging, Sorry, do you see my screen?

9:42  
Yes we do.

9:47  
When?

9:48  
OK, when we dragging the information we can compare on the same area, the same place, the information from 2010 to 2020.

10:03  
I will demonstrate it.

10:05  
It's the leg followed by my connection.

10:12  
Just quick refresh it data loading heavily but with patient and it will work.

11:01  
So here we can compare on the same place two different datas selecting from 2010 and 2020 and when when we clicking on the area in particular area it we can read that in in 2020 it was 565,665 homes in Maslow pier area and when we trying to do the same in 2020 we can see it's growth.

11:38  
Another figure, another example of time up.

11:44  
We can see the National Park visits the United States comparing 2019-2020 cases and the arrows with the up direction means that change comparing from 2019.

12:05  
In 2020 we have growth of visitors but 23.1% and another example that means that we have different with the arrow down we mean that we have decrease of visitors in 2020 compared with 2019 example of time.

12:38  
Another informative product is an animation which is dynamic display of spatial data.

12:46  
The animation can show special navigation, temporal changes or alteration of layer and same properties such as transparency.

12:56  
On this example we can see in the United States line this is case and when we interacting with it and opening the legend we can see that the change over time and one green dot it's mean one case of Lyme diseases and with the polygons with the blue shade blue coloured it's mean that this place is high in incidences states for Lyme diseases.

13:37  
And last but not least, type is a chart now the informatic product which is a graphic representation of tabular data and they can help us to understand the patterns, trends, structure and relationships within our data.

13:56  
On this example we can see the average pop music sales by states, the mean of person mean in percentages and another example of visualisation of tabular data is a histogram which means that we can see the mean download distribution of music.

14:22  
We can see the mean, medium and standard deviation in on the this histogram.

14:28  
At the same time when we creating web map, web layer and another web applications so on, we need to decide how we are going to share it with others.

14:49  
In RJS online we have four options for sharing.

14:55  
First, it's owner type, which means we should keeping our maps web maps in private.

15:06  
Second is organization.

15:08  
It's mean we're sharing maps with everyone who's standing in this or just online organization.

15:15  
Third is everyone, which means it's public and everyone is allowed to see our web maps.

15:24  
And fourth option is group, which means we deciding specific amount of people standing on the group and sharing among the users of Arcgis Online.

15:42  
There is 4 mine types for sharing web maps.

15:47  
So let's create some web map and share it as an application.

15:55  
For those who are able, I will share the data through the Microsoft Teams and I will do steps slowly.

16:06  
For those who are able, just join me, I will try to share file anymore.

16:46  
Please could you help me?

16:48  
I can't find a place where I can upload the file or write a message.

16:53  
OK, could you write you look in chat?

16:57  
Yes, go to the chat.

16:59  
Yes, I'm just writing.

17:01  
Hello.

17:01  
Yeah there is the option to attach file to but I have never done myself so we can try today OK.

17:10  
I I I don't find a place when I can write a message chat does this it's I think start from the left if you look I think can you see this menu above this teams.

17:28  
Yeah I see the menu about the teams there are people's question and do I keep a rise rise a hand but I don't find a place where I was sending hello and I don't know if you can see that maybe it's popping up with the some this red spot red point it should be or you go just now maybe you can see better.

17:54  
I don't know.

17:54  
I'll try to stop the sharing and trying to yeah, find a chat.

17:59  
OK, now it's first from the left when they're all icon succumbing.

18:05  
I mean menu like Q&A is second Q&A yes, but before it's chat or you have maybe different settings.

18:14  
If I, I, I I find the chat I OK, good, wonderful.

18:19  
So then they can share Q&A.

18:22  
Q&A yes.

18:23  
No.

18:24  
Next to it, no chat.

18:25  
OK maybe Q&A.

18:26  
You can also attach some file.

18:28  
No here you cannot just in chat.

18:32  
There is a chat.

18:34  
It's separate.

18:35  
If you cannot see, you can go.

18:37  
There are three dots and more.

18:39  
Maybe you can find their chat.

18:42  
Can you see the chat there?

18:44  
Meeting info, language and speech?

18:45  
No, I can't find this chat.

18:48  
Maybe it's disabled for my side.

18:51  
I didn't do it myself in this sense because I have the same I think role as you are.

18:57  
Or maybe not.

18:58  
OK, I see.

19:00  
OK, you can send me and show chat bubbles.

19:04  
OK, you can send me via WhatsApp if you can and I can attach this file via the chat if it's not so big.

19:14  
Is it fine?

19:16  
OK, it's fine.

19:18  
OK, I will.

19:19  
I will send it.

19:21  
I will send it right now.

19:29  
Guy send it via e-mail by e-mail.

19:32  
OK, I need a bit time for the emails, sorry.

19:37  
OK, I sent it and while Anura shared this information CSV file.

20:00  
I will explain what we are going to do here.

20:05  
So we are going to.

20:08  
I will share my.

20:13  
Again, so we are going to create a web map which includes the mountains of Armenian and Armenian Highlands.

20:25  
And 1st what we going to do, We should create the information data which need to assemble the data.

20:37  
The data we are going to gain today it's from mostly from Wikipedia.

20:49  
We are going to, We are going to collect such kind of files, select from Wikipedia, name of the mount, the elevation, the arrangement where it's from, where where it's composing standing and also the picture.

21:15  
All those information and also the coordinates, latitude and longitude which we are going to get from Google Earth or Google Maps.

21:27  
And all this information we need to assemble in in the CSD file.

21:33  
Let me show you this file.

21:38  
OK, I have uploaded this file so everyone I think right can have access.

21:44  
Can you see Helen?

21:46  
Can you see on the?

21:51  
Is it on the chat?

21:53  
On the chat?

21:56  
No.

21:56  
Is it from yours of struggle?

21:58  
No, no, it's from me.

22:01  
I think in chat you cannot really differentiate from.

22:05  
I mean I cannot send directly.

22:08  
I think it's not yet uploaded.

22:11  
So OK, none can see in the chat.

22:16  
So it's meeting chat and there is a mountains of Armenia file.

22:25  
Excel file name is a mountain of Armenia CS file.

22:29  
So we can see.

22:31  
OK.

22:31  
Lucas can see.

22:33  
Helen you can just try maybe look at chat.

22:38  
Thank you Lucas.

22:44  
OK.

22:45  
Sorry but my chat is not active same I suppose.

22:54  
So I just sent something in the meeting chat right now.

22:56  
I don't know Can someone see it?

22:58  
Yeah I can see.

22:59  
Can you see this?

23:00  
I see your OK but but I don't see the document.

23:04  
But yeah I don't think why.

23:06  
Yeah I think the reason can be if you may behave from.

23:11  
If you are using browser only, maybe then you cannot see the chat.

23:18  
Is it so?

23:19  
Maybe.

23:21  
But I'm from the application but I'm OK also unable to see the chat and like well I cannot in any case OK in any case we just follow we have this file.

23:33  
Could we have this file share with I will upload in teams then this file.

23:38  
If if it's fine, OK OK OK, so I will demonstrate the task and and explain how we'll getting the information.

23:47  
Further we are going to upload it in our environment and further we are going to create a web map and share it as a web application.

23:55  
So if you can see this CSV file, it's composed of seven columns and 14 rows.

24:07  
The 1st is a latitude longitude of the point, the point are the mountains.

24:17  
We are collecting the name of the mountains, the range where it's standing, the elevation in meters.

24:23  
Also we are uploading here file taking from the Wikipedia and also we're adding here the link as a Photo Credit from where we take this photo.

24:38  
And with all this data we are going to put in our address environment in our web map.

24:45  
So I will go to my web browser.

24:51  
I will share my web browser.

25:05  
So first what we are going to do it's sign into our or just online account.

25:14  
After signing in we need to prepare the place or appropriate folder where we are going to get the all those information.

25:28  
We are going to the content and creating some environment folder naming it and clicking OK Further all information we are going to create we are we will assemble here and save here.

26:00  
Further we need to go to the map and select appropriate base map for us for this task.

26:19  
Default we have topological information.

26:26  
Here we have topographic web map and when we're scrolling down from the left side of our window we can see the options for the base map.

26:38  
But what if we don't find appropriate one here and we are going to find it?

26:45  
For instance we are going to find and use here charted territory map which are in this free environment.

26:53  
We can find those kind map a layer in living the Atlas and use it as a base map.

27:05  
We are going to type here chart territory map and with the first option we can see this map and clicking use as a base map we will see all map.

27:31  
The base map is was changed and we can see the chart territory here.

27:42  
We need to save our map.

27:43  
First we'll give this map a name we we'll select appropriate folder we which which we previously created.

28:03  
It will be mounted Superminia.

28:06  
Also we can add text here for easy finding for others when we sharing for easy finding this layer, it will be mountains, Armenia range and we could add a short brief summary here.

28:38  
Here we can find the maps, the mountains.

28:44  
Sorry and we clicking save it we could we could see here that that the name of our untitled map is changed and now we need to add our previously created information which we are assembled from Google map and Wikipedia.

29:23  
It it is layer and we are going to the layer menu clicking to add and selecting the third option Adding layer from file.

29:38  
After we selecting our device because we are going from directly take it from our computer selecting appropriate folder.

29:49  
When we where we creating those CSC file in my case it's already opened and clicking to open it there is two option we're selecting first create a host future layer and edit to the map because we are going to interact and use it order clicking next all information.

30:13  
All data are here.

30:15  
We can see here the seven data types and we can read to make sure that it's correct for all attributes, attribute names, the data types corresponding or not.

30:29  
The latitude and longitude are numbers and they are double.

30:33  
The name range are strings because they composed of letters elevation, it will be integer and Tom URL and Photo Credit are also streamed because they are composed from symbols, figures and letters.

30:52  
By clicking next we need to select in which way we are going to combine our CSP file with the RJS online environment.

31:07  
We are going to connect it via latitude and longitude.

31:12  
We have several options here we if you have the data with the names or street names we can try to put it with the street names or addresses.

31:28  
But in in this particular task we have only latitude and longitude and we can add it via that.

31:39  
Also here we are creating acsb file and we need to take appropriate place for saving it.

31:49  
It's all will be.

31:51  
Also in this folder mountains of Armenia tags will be.

31:55  
This will be the same and the summary it will be.

32:08  
Here you can find the information about our CSV about our mountains file.

32:57  
After filling the summary we can click create and add to the map.

33:23  
Here we can see the dots which are our information from the file and when we interacting with it.

33:32  
Clicking on those dots we can see all the information here.

33:40  
From our data, let's change the symbols.

33:47  
From the left side we have styles and here we can select the appropriate one for changing and representing the mountains.

34:02  
Let's go to the style options and select Pen on a symbol style.

34:11  
From here we can select appropriate symbol.

34:14  
The basing point was that and we can select geometrical figure triangle for instance.

34:24  
Adjust the size, select the field color with appropriate one based in our test and select the outline color and click done.

34:48  
But what if we don't need this geometrical figures and we are going to select another type which could be much more representable as a mountain, For instance this this symbol.

35:09  
But also we can select the size and another options for filling color and outline color are disabled.

35:17  
On this option we also can select from the our own created symbols.

35:30  
When we when we can create or upload some PNG, JPEG, jib files and upload here and use it as a symbols.

35:41  
We go to leave it like this and by clicking down it will be double click down it will be saved order.

35:54  
We need to configure it our pop up window because here is default the representation type and we're not going to put here all the information.

36:08  
We are going to make it in different different way.

36:13  
So going to the pop up window we could delete all these fields and configure it the mountains of our new title.

36:29  
So we are going to delete the title and leave only the name of particular mountain and we are going to delete all those information from the pop up window.

36:45  
Here we can add a text, add a content by clicking add a content.

36:51  
We need to add a text and type the following information.

36:58  
The open the bracket and select the name attribute from the menu.

37:08  
It will represent the name of the mountain and in any place when we clicking I will show it after when I finishing the this part of of the task.

37:22  
The mountain name is located in the range of and I'm going to find the range name from attribute table and has elevation of approximately and I'm going to find the information about the elevation here meters and clicking OK so we can see the name is located in the range of the range.

38:13  
What I typed in the brackets and has elevation of approximately 3555 meters.

38:23  
Let's make it's bold and it's a link name, range and elevation and we can see the changes and each time when I'm clicking on a different object it will represent on the name place and the range place and the elevation place its own attribute names.

39:01  
So we need to add here also a picture because we have some both pictures.

39:11  
For this part we need to click add content and find an image on the URL place we need to select Tom URL which means it's will be our photo.

39:31  
And here when I hovering the mouse here you can see only the mouse.

39:37  
But I want to also put it also the link, because I assembled a link for this picture and I add also the link part.

39:49  
Here you can see now I have another point, the hand and when I clicking it, it's directly going to the link which I assembled for my mountain.

40:12  
So after it we clicking that and.

40:18  
If you don't forget we have also a Photo Credit here.

40:22  
Let's see as a let's create it as a link.

40:26  
So we need to edit text here below we need to add a Photo Credit order.

40:40  
We need to find this link.

40:41  
We will open the brackets and find Photo Credit.

40:48  
Click to cut it and create Photo Credit as a link.

40:56  
Going to the link option and past it.

40:59  
Here it will be the active link.

41:04  
By clicking OK we can see it's changed in our pop up window and by clicking it on it we can see directly the place from where this photography we take.

41:21  
It also will bring us detail when it's taken and from whom, who is the author of this picture.

41:31  
So order we need to select the option for sharing this web map.

41:48  
I will Click to save it to make sure I've saved my changes here and I will select the sharing option.

42:03  
It will be everyone and I'll save it.

42:16  
I'll update this information and was updated here.

42:22  
And what if I don't want to share it as a web map?

42:28  
I would like to share it as a web application and have others to interrupt as an application instead of web layer.

42:36  
Here I will.

42:41  
From the left side I will go to on the three dots and select more and here I have a option to create application.

42:48  
There will be instant apps and from here there's a lot of options.

43:03  
I will select the basic one.

43:08  
We are going with the basic one.

43:10  
It will create application.

43:13  
It will be a multi sub Armenia.

43:15  
Let's add here app like it's two of the other application and the folder and adding texts are also are presented here.

43:25  
We will create the app just a few seconds.

43:47  
There's a guide for helping us what we need to do.

43:52  
But in this case there are four or five steps.

43:58  
I will cover it quickly.

44:00  
First is map.

44:02  
We are need.

44:03  
We need to select the map.

44:05  
It's the our previously created one.

44:08  
If you need to change it, we can select map or source from here.

44:17  
Further we clicking next and adjusting our interface.

44:23  
Oh well in our application we will enable the hitter, the legend and we don't need to fixed prop up locations.

44:32  
So it's depend on the tests.

44:33  
I don't enabling this option and going to next here we can add some information from here.

44:45  
For instance we need to add a layer list.

44:48  
In our case it's one layer.

44:49  
But if we have some different layers we can edit and operate with them.

44:55  
We could enable a screenshot options and also we can enable search and open at start it will be on the right place, find others or place.

45:09  
Or we can disable this option.

45:11  
It will be our own loop.

45:15  
Further, we'll click Next.

45:24  
We will can also adjust the application interface on the like light mode or dark mode and see the configuration of our objects.

45:35  
The search and lighting button will be on our top right side, Layer list will be on our bottom right side and from the top left side we will see the screenshot home buttons and controls.

45:48  
If we need to adjust it, we can adjust it manually from here.

45:56  
So it's well it's our last step and when we going to click publish, we're confirming publication and we'll see that our changes published and here we need to decide how we are going to share our application.

46:23  
So the default user sharing level is owner and we are going to change share settings and clicking to everyone and saving it.

46:39  
So it's it's a bit updated and from this part when we are repeating this procedure we can easily copy the link or from size here from here and paste it and share it with other people and just make to launch what we are going to see.

47:21  
Copying this link and sending to others we will see such kind of application from where all information which we previously created presenting information about the mountains.

47:49  
The ARAT is located in the range of army in highland and has elevation of approximately 5 hundred.

47:55  
137 meters is the picture from the urban side or the mountain forward and we can interact with the menu, for instance find others or place we type R up and finding it here.

48:21  
It's working well.

48:27  
It's a legend.

48:28  
It's about one point mountain or mountains of Armenia with one urgent information.

48:37  
And we can also have a screenshot here with the different options.

48:47  
We can add a legend here, set them up area and drag it.

48:57  
After we can see our created screenshot and we can download it and use it further.

49:08  
So this much for creating and sharing a web map and sharing as a web application.

49:15  
Thank you for your kind attention.

49:21  
Thank you very much Wahan.

49:23  
I think it was very clear for all and thanks a lot actually for the good and careful explanation of adding CSV file into the map and also setting up pop up for the map.

49:37  
And actually it was very important.

49:40  
I think that you will put in Photo Credit yeah which is we sometimes forget.

49:45  
And I also want to mention that it's really good rabbit to describe layer and giving text while you are creating them.

49:56  
And this is also you showed very well and I think it's always we postponed it and to make it OK we can do later.

50:03  
But this time I think it you were already giving very good example how it should be done.

50:09  
Thanks a lot.

50:10  
And if I think now I can stop the recording and OK, I think everyone can ask questions if you want and if you have any.

50:25  
So you can just, I think open up your microphone and ask questions or write in chat or the Q&A, but so?