



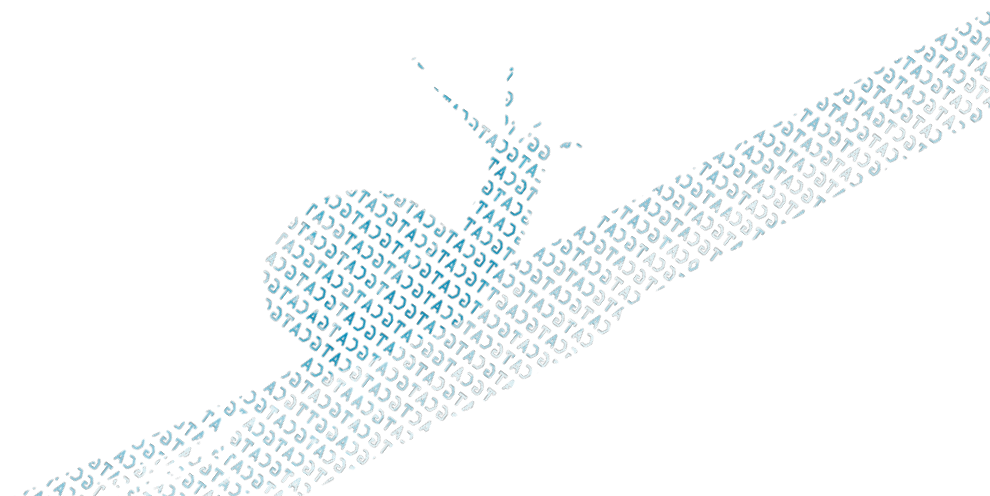
Welcome
to

701-1425-00L

Genetic Diversity: Analysis

June 15 - July 3, 2020

SPECIAL ONLINE EDITION



Jean-Claude

Ankara

Aria

Nik



Silvia

The Genetic Diversity Centre (**GDC**) is a knowledge and technology platform of the D-USYS Department at ETH Zurich. It provides scientific and technical support for research related to genetic and genomic diversity in a wide range of organisms with special focus on non-model organism.



Their Master's Voice - Michael Sowa

Good to know!

Zoom
Jean-Claude Walser
Nik Zemp

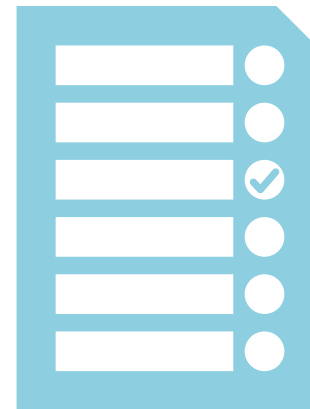
Google
Group: GDC20
jcwalsen@gmail.com
nikzemp@gmail.com

E-Mail
jean-claude.walser(at)env.ethz.ch
niklaus.zemp(at)env.ethz.ch

WWW
[https://www.gdc-docs.ethz.ch/
GeneticDiversityAnalysis/GDA20/site/](https://www.gdc-docs.ethz.ch/GeneticDiversityAnalysis/GDA20/site/)

Essentials:

- ➔ Internet access
- ➔ Terminal ready
- ➔ (S)FTP client installed (e.g. Cyberduck)
- ➔ Text editor installed (e.g. Atom)
- ➔ Markdown Editor installed (e.g. Haroopad)
- ➔ R and RStudio installed



Where can I find what?

▶ Course Website

- Exercises
- Links
- Handouts

▶ Google Drive

- Movies
- Files
- Zoom Info

▶ Google Groups

- Q&A
- Discussion
- Links

▶ Zoom

- Meetings


COURSE WEBSITE

Genetic Diversity Centre (GDC) - Course Webpage Search

Genetic Diversity Centre (GDC) - Course Webpage

- Welcome
- Requirements
- Local Terminal
- Remote Terminal
- Biocomputing
- Biocomputing with R
- Biocomputing on a HPC cluster
- Reproducible Research
- NGS Introduction
- NGS Applications
- NGS Quality Control
- NGS Quality Filtering
- RNA-Seq
- SNPs
- RAD-Seq
- Amp-Seq
- Project

Genetic Diversity: Analysis ▶ Special Edition



- Course Catalogue Number: 701-1425-00L
- Credit Points: 2 ECTS
- Date: 15.06.20 - 03.07.20
- Organizer: Genetic Diversity Centre (GDC), ETH Zurich
- Location: Online Version

Overview

The current situation requires us to change our regular classroom setting to a safer online version. We will spread the intensive 5-day course over a period of three weeks. It does not mean more work but more time and more freedom for you. This setting, however, requires self-dependance! We split the content up into different topics. There is an online introduction for each topic. Afterwards you have time to dig deeper into the subject with the help provided and your advanced google-skills. We also provide exercises for you to test your gained knowledge. We finish each topic with a closing discussion and answer your questions. You do not have to engage in all topics. Choose the ones you will profit from the most.

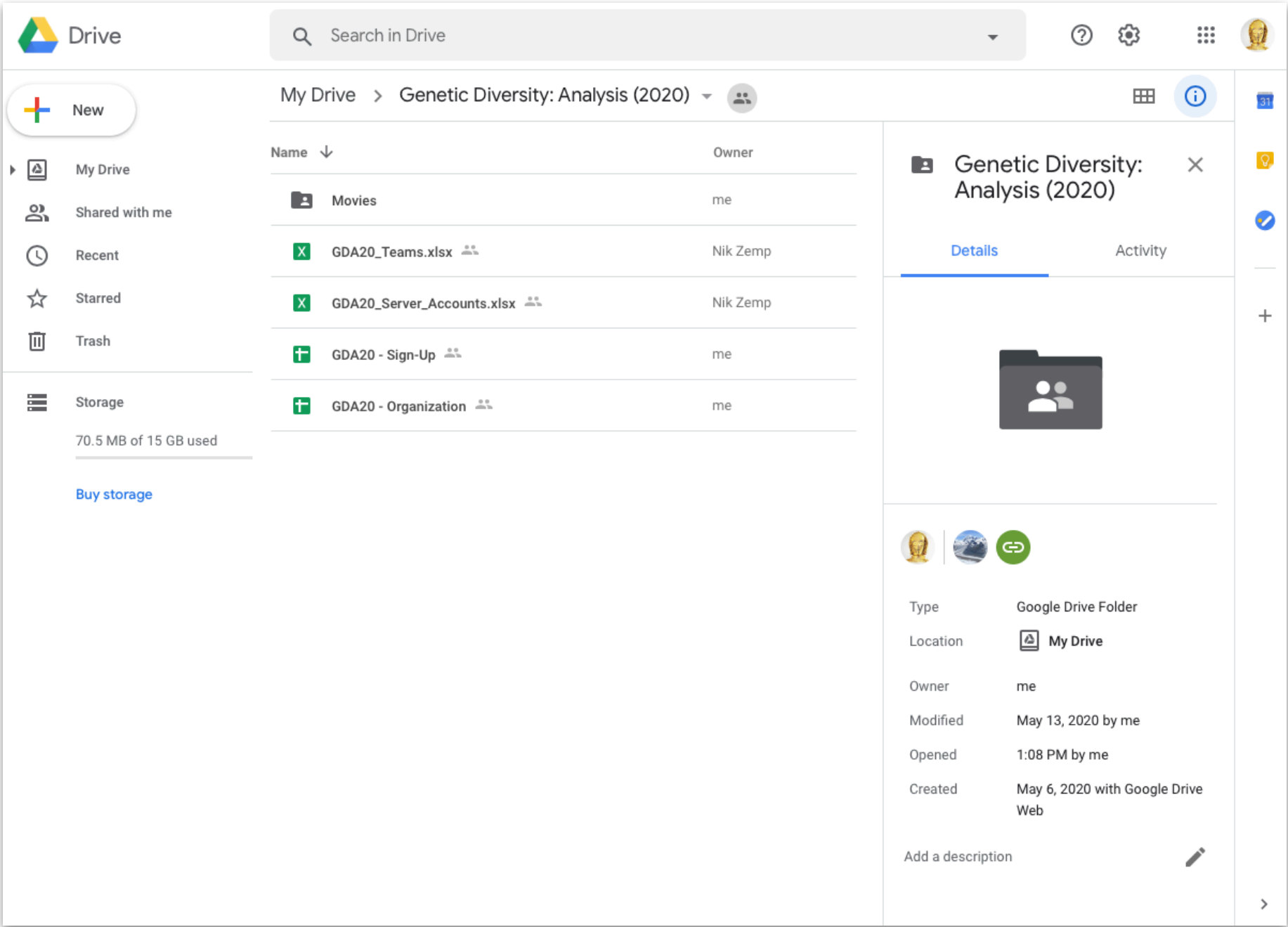
Table of contents

- Overview
- Requirements
- Time table
- Instructors
- The GDC

- ➔ Infos
- ➔ Challenges
- ➔ Links
- ➔ Handouts

<https://www.gdc-docs.ethz.ch/GeneticDiversityAnalysis/GDA20/site/>

GOOGLE DRIVE



The screenshot shows the Google Drive interface. On the left is a navigation sidebar with options like 'New', 'My Drive', 'Shared with me', 'Recent', 'Starred', 'Trash', and 'Storage' (70.5 MB of 15 GB used). The main area shows a folder named 'Genetic Diversity: Analysis (2020)' containing a 'Movies' folder and four files: 'GDA20_Teams.xlsx', 'GDA20_Server_Accounts.xlsx', 'GDA20 - Sign-Up', and 'GDA20 - Organization'. A details panel on the right shows the folder's metadata: Type (Google Drive Folder), Location (My Drive), Owner (me), Modified (May 13, 2020 by me), Opened (1:08 PM by me), and Created (May 6, 2020 with Google Drive Web).

Name	Owner
Movies	me
GDA20_Teams.xlsx	Nik Zemp
GDA20_Server_Accounts.xlsx	Nik Zemp
GDA20 - Sign-Up	me
GDA20 - Organization	me

- ➔ Course Info
- ➔ Movies
- ➔ Files



GDA20 - Organization

Genetic Diversity: Analysis (701-1425-00L)

Welcome	Time	Topic	Zoom ID	Lecturer
Monday, 15.06.20	09:00-10:00	Welcome / Info	944 9591 5909	JCW / NZ

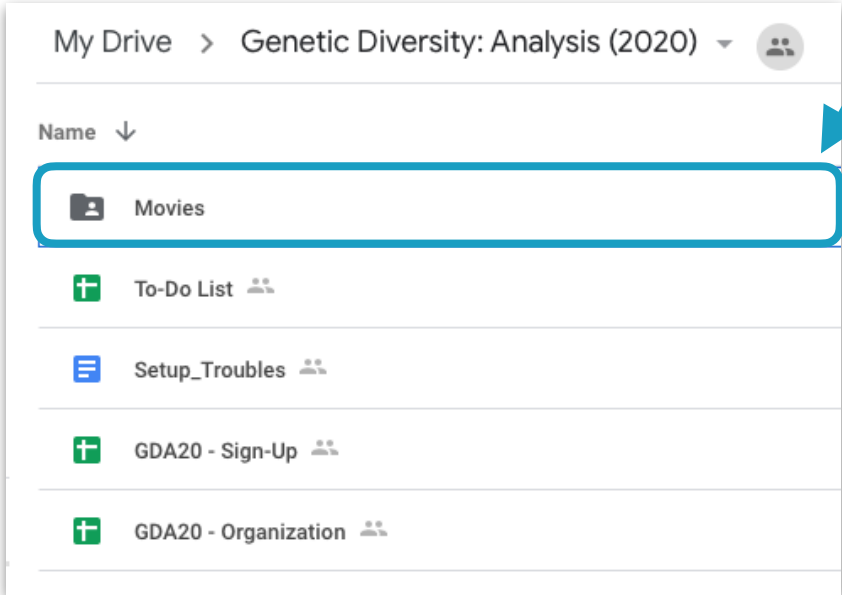
NGS	Time	Topic	Zoom ID	Lecturer
Monday, 15.06.20	10:00-11:00	NGS Introduction	957 5019 1876	JCW
	~9 min	NGS Applications	Movie	NZ
	~5 min	NGS Design	Movie	NZ
	~6 min	NGS Desgin: Genomics	Movie	NZ
	~6 min	NGS Desgin: Transcriptomics	Movie	NZ
	~4 min	NGS Desgin: Ampliseq	Movie	NZ
	~ 90 min	Exercises	Self-study	
15:00-16:00	Closing Discussion	941 9223 9333	JCW / NZ	

BioComputing	Time	Topic	Zoom ID	Lecturer
Tuesday, 16.06.20	~ 30 min	Terminal	Movie	JCW
	~ 60 min	Exercises terminal	Self-study	
	~30 min	Biocomputing	Self-study	
	~ 8 min	Biocomputing with R	Movie	NZ
	~ 13 min	R Demo	Movie	NZ
	~ 60 min	Exercises R	Self-study	
15:00-16:00	Closing Discussion	969 2197 4021	JCW / NZ	

Technical Issues	Time	Topic	Zoom ID	Lecturer
Wednesay, 17.06.20	09.00-10.30	Open hours for technical issues (e.g. Terminal or R)	945 9640 8203	JCW / NZ

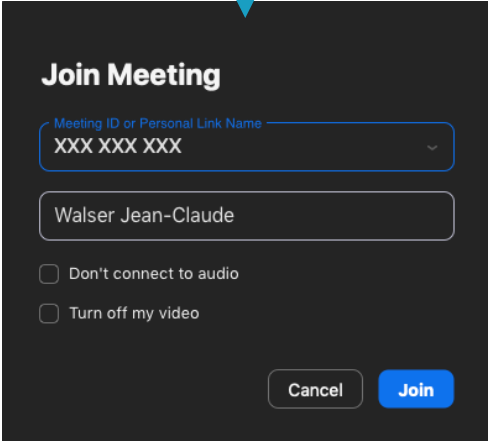
NGS	Time	Topic	Zoom ID	Lecturer
Monday, 15.06.20	10:00-11:00	NGS Introduction	957 5019 1876	JCW
	~9 min	NGS Applications	Movie	NZ
	~5 min	NGS Design	Movie	NZ
	~6 min	NGS Design: Genomics	Movie	NZ
	~6 min	NGS Design: Transcriptomics	Movie	NZ
	~4 min	NGS Design: Ampliseq	Movie	NZ
	~ 90 min	Exercises	Self-study	
	15:00-16:00	Closing Discussion	941 9223 9333	JCW / NZ

Google Drive



NGS	Time	Topic	Zoom ID	Lecturer
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	~ 90 min	Exercises	Self-study	
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Zoom



Join Meeting

Meeting ID or Personal Link Name
XXX XXX XXX

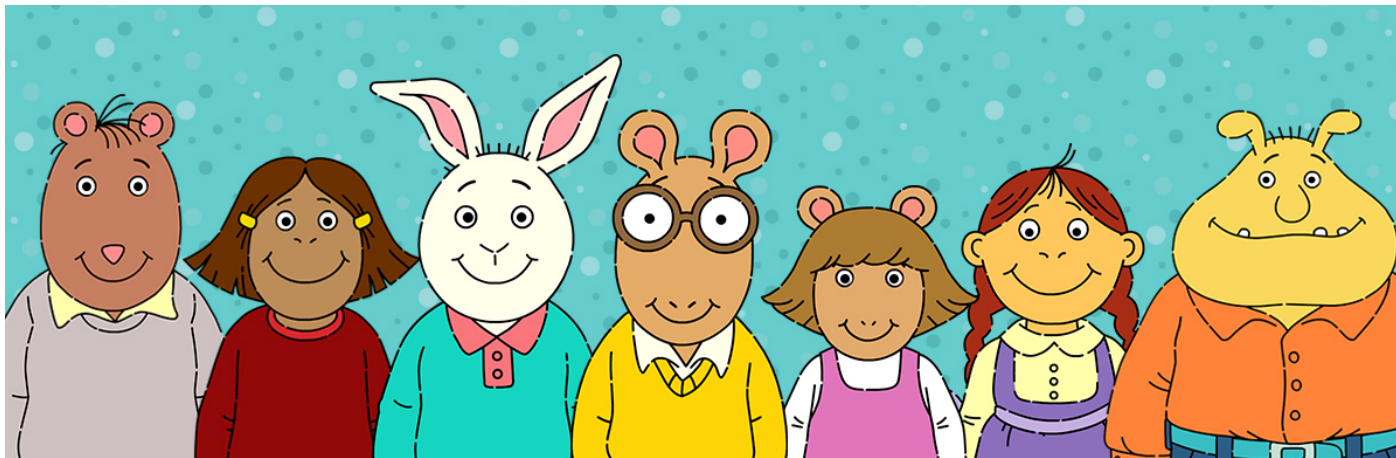
Walser Jean-Claude

Don't connect to audio

Turn off my video

Cancel Join

Virtual Learning Groups



- Solve challenges together
- Help and learn from each other
- Discuss ideas and problems

Remote Server Guest Account

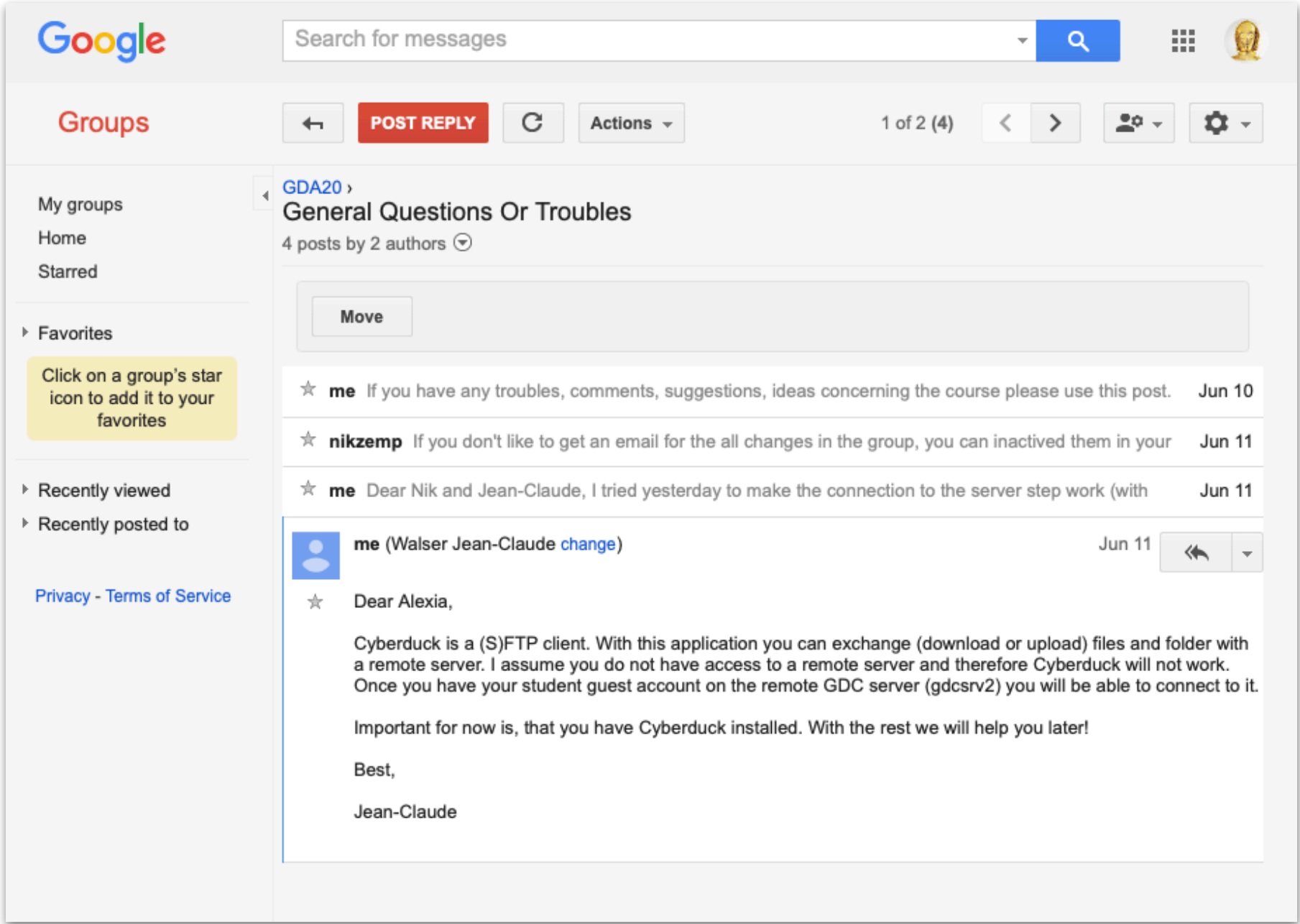


Drive

GDA20_Server_Accounts

- Choose an account (student01 - student25)
- Add your name
- Write down the pw for your account
- Delete the pw from the list

GOOGLE GROUPS



The screenshot shows a Google Groups interface. At the top, there is a search bar for messages and a user profile icon. Below this is a navigation bar with a 'Groups' label, a 'POST REPLY' button, a refresh icon, and an 'Actions' dropdown menu. The main content area shows a thread titled 'GDA20 > General Questions Or Troubles' with 4 posts by 2 authors. A 'Move' button is visible above the first three posts. The first post is from 'me' dated Jun 10. The second is from 'nikzemp' dated Jun 11. The third is from 'me' dated Jun 11. The fourth post is from 'me (Walser Jean-Claude change)' dated Jun 11. The content of the fourth post is as follows:

★ Dear Alexia,

Cyberduck is a (S)FTP client. With this application you can exchange (download or upload) files and folder with a remote server. I assume you do not have access to a remote server and therefore Cyberduck will not work. Once you have your student guest account on the remote GDC server (gdcsrv2) you will be able to connect to it.

Important for now is, that you have Cyberduck installed. With the rest we will help you later!

Best,

Jean-Claude

ZOOM MEETING



Video Meeting Etiquette

- ▶ Being on Time
- ▶ Eye Contact
- ▶ Pay Attention
- ▶ **Appropriate Background**
- ▶ **Audio and Video Settings**
- ▶ **Eliminate Distractions**



RULES



Guillaume Tell bravant l'ordre de Gessler.

Guillaume (Wilhelm) Tell Gessler STAHLSTICH von 1835 Etterlins Tell-Legende

Project



You need a project and hand in a report if you are interested in the 2 credit points. You are free to choose your project but please follow this general guidelines:

- Inform us about your project before your start.
- Choose a topic related to the course.
- You should work at least six hours on your project.
- Write a detailed report including figures and code using markdown format. We like to receive both the markdown document and a pdf of the report.
- **Death line** to hand in the report is **03.07.2020**.
- Use file naming: Name_Surname_GDA20_Report.pdf / Name_Surname_GDA20_Report.md
- Use report format:

Introduction - A brief project description. What is the project about?

Methods - What did you use, do and how? Do not forget to provide parameter and references.

Results - What did you find? What did and what did not work and why?

Conclusions - What did you learn? What would you improve or what would be possible next step?