Mid Semester Report

Projects

Midterms

A Little Extra Announcement

Miscellaneous Videos

- We have a section on Multimedia for non-lecture video
- This includes:
  - Help Session Video   *(week 06 seems to be missing, I am searching for it)*
  - How to use PSQL
  - A recording of this Mid Semester Report
- Please head to the following link:
  - https://luminus.nus.edu.sg/modules/a506753a-3310-4bea-b514-e0a9e5c13b46/multimedia/channels/external/abbb7afb-345a-4ae5-a6b1-de81445bfa65

Projects

1st Deliverables

- 123 submissions are recorded
- Some groups did not follow the correct file name convention
- Some groups have different people submit
  - That's why we have individual group folder
  - But please follow the file name and just have one person submit
  - If not-equal, then we will take the "worse" outcome
- All comments have been made
  - Some minor comments may be missed
  - Major comments are the more important ones
  - We will send you the comment (either email or LumiNUS gradebook, as comments)

Notations

- Textual Notations
    - {attributes}   *oval*
    - [entity set]   *box*
    - <relationship set>   *diamond*
    - [<aggregate>]   *box and diamond*
    - {{composite attributes}   *double-lined oval*
    - [[weak entity set]]   *double-lined box*
    - <<identifying relationship set>>   *double-lined diamond*

    ❖   [<< ??? >>]

Common Project Comments

- Cosmetic Comments
    1. Make the report a report format, not a slide
    2. Make the ER diagram large
        - The smallest font on the ER diagram *(usually attributes)* to be as large as the smallest font on the report *(usually 10pt or 11pt)*
        - You may separate the ER diagrams:
            a) Lines/arrows showing the connections between ER elements *(entity sets, relationship set, aggregate, etc)*
                - Show only the keys on this part
            b) ER elements showing the attributes

Common Project Comments

- Minor Comments
  1. Setting the capacity of the [Meeting Room] need not be captured as relationship set *(e.g., <Set Capacity>)*
     - If captured, should at least capture the following two attributes
       a) The {date} when the update is made
       b) The updated {capacity}
     - Even this could still produce complexities on the implementations
       - Finding the latest capacity needs to query <Set Capacity> *(or make {capacity} a derived attribute)*
       - A manager may accidentally only make update once *(or make {date} a partial key of <Set Capacity>)*
       - A [Meeting Room] may accidentally have no initial {capacity}

Common Project Comments

- Minor Comments
  2. Some attributes are best described as derived attributes with common attributes to be made derived are:
     - {fever}
     - {is_approved}
     - {booker_id}
     - {approver_id}
     - {number_of_participants}

Common Project Comments

- Minor Comments
  3. Need to separate "queries" from "tables" *(entity sets, relationship sets, etc)*
     - Typically, these additional tables are added to simplify query
     - However, it adds problems of consistency:
       - How to ensure that the data is correct all the time?
       - Consider that we can only call the functions described in functionality AND we can call them in any order
     - Typically, smaller number of tables will be easier to maintain
       - Simply store the underlying simple data
       - The complex part can be queries instead

Common Project Comments

- Minor Comments
    4. The use of {end_hour} as part of the key for <Booking> or [Session] may complicate the implementation
        - Main complication is that an approval can be partial
            - A booking can be made for [Meeting Room] A from 10:00 to 12:00
            - An approval for the [Meeting Room] A is only given for 10:00 to 11:00
            - May need to split the entries to accommodate this
        - You can still have {end_hour} as part of key but just keep in mind the complications

Common Project Comments

- Major Comments
  1. <Booking> becomes ternary relationship set connected to [Senior], [Manager] and [Meeting Room]
     - The intention is that one of [Senior] or [Manager] can book the [Meeting Room]
     - Unfortunately, this is not the meaning of n-ary relationship set
     - The meaning is actually that we have a tuple (S, M, R)
       - S is a [Senior]
       - M is a [Manager]
       - R is a [Meeting Room]
     - In other words, both [Senior] and [Manager] must be involved in the act of booking

Common Project Comments

- Major Comments
  2. Extraneous keys, especially for <Booking> commonly named {booking_id}
     - From a purely ER diagram perspective, it means that you can have the same {date}, {start_hour} and [Meeting Room] being booked by different [Senior] or [Manager] as long as it has different {booking_id}
     - The {date} and {start_hour} can still be *candidate keys*, but if there is a natural key for an entity set, we should use that for simplicity

Common Project Comments

- Major Comments
  3. {{participants}} of a <Booking> or [Session] as a multi-valued attributes loses the nice property that the participant is an actual valid [Employee]
     - In other words, we lost the foreign key reference and it can be a bogus {employee_id}
     - However, this can be captured by the ER diagram by adding a relationship set <Participates>
     - Note what happens here:
       - Using {{participants}} does not solve problems
       - Using {{participants}} produce problems
       - ❖ Since it can be solved with ER diagram, we should solved it using that
     - ❖ Foreign key references are reflected in ER diagram via relationship set and ISA hierarchy
     - ❖ Similar problem with {approver_id} and {booker_id} *without* relationship set

Common Project Comments

- Major Comments
  4. [Resigned] employees as a sub-entity set of [Employee]
     - The problem here is that of "keeping the old data" and using a separate sub-entity does not keep old data
     - Most of the time, the ISA hierarchy uses ==> (which involves non-overlap)
       a) If the data is copied instead of moved, then the arrow ==> is wrong because there is an overlap
       b) If the data is moved, then the old data is not kept because the data is needed for the relationship set such as <Booking> which is now lost because the data is moved
     - ❖ A solution is simply to use an attribute {is_resigned} or {resignation_date} to indicate that the [Employee] has resigned
       - ❖ This technique is called "soft-delete"

Midterm

Midterm Admin

- Content
  - Everything up to week 6
    - ER model
    - Relational Algebra
    - SQL

- Type of Questions:
  - MCQ   *only one choice*
  - MRQ   *zero or more choices*
  - Essay   *write SQL query*
  - FITB   *short answer*
  - Pin   *put a pin on an image*

Important!
We will not ask you to "draw" ER model or write "Greek alphabet"

Examplify

1. Open Examplify
2. Log in
3. Download the exam

Download this exam file to prepare for your exam. Only download exams to the computer you will use to take the exam.

Download Exam

- The actual assessment name will be announced
- Do this well before the midterm as you will **NOT** be given additional time
- You can only download the exam paper **ONE** time
  - Download only on the device you intend to use for midterm

2nd Device   *(Phone)*

1. Save the zoom link on your phone   *(notes app)*
   - Also save the password just in case
2. Charge your phone
3. Prepare the charger
   - Battery can drain rather fast even at full charge
     - Zoom + Video + Internet
   - Even if you plug charger, it may still have a net drain
     - But at least slower and hopefully lasts 1+ hours

Other Devices?

- You are discouraged from using wireless device
  - Wireless mouse, wireless keyboard, etc
    - This may not work well with Examplify
- You can **NOT** have other devices
  - **NO** second monitor   *(laptop, no external monitor)*
  - **NO** headset   *(earphone, headphone, etc)*
  - **NO** smart devices   *(smart watch, 2nd phone, etc)*
  - **NO** calculator   *(do not even open the calculator app on your computer)*

Final Preparation

Have a good rest

Overview

Important!
You can **NOT** be
in a public area

- Prepare your workspace
  1. Use 2nd device *(e.g.,* phone) to connect to this zoom
  2. Place your phone in a good location
     - We can see your monitor
       - **NO** glare on your monitor
       - The software on your monitor is clear
     - We can see your workspace
       - 1 blank A4 page
       - 1 A4 cheatsheet double sided
     - We can see your face
     - We can see your body
     - Put any beverages on the FAR SIDE
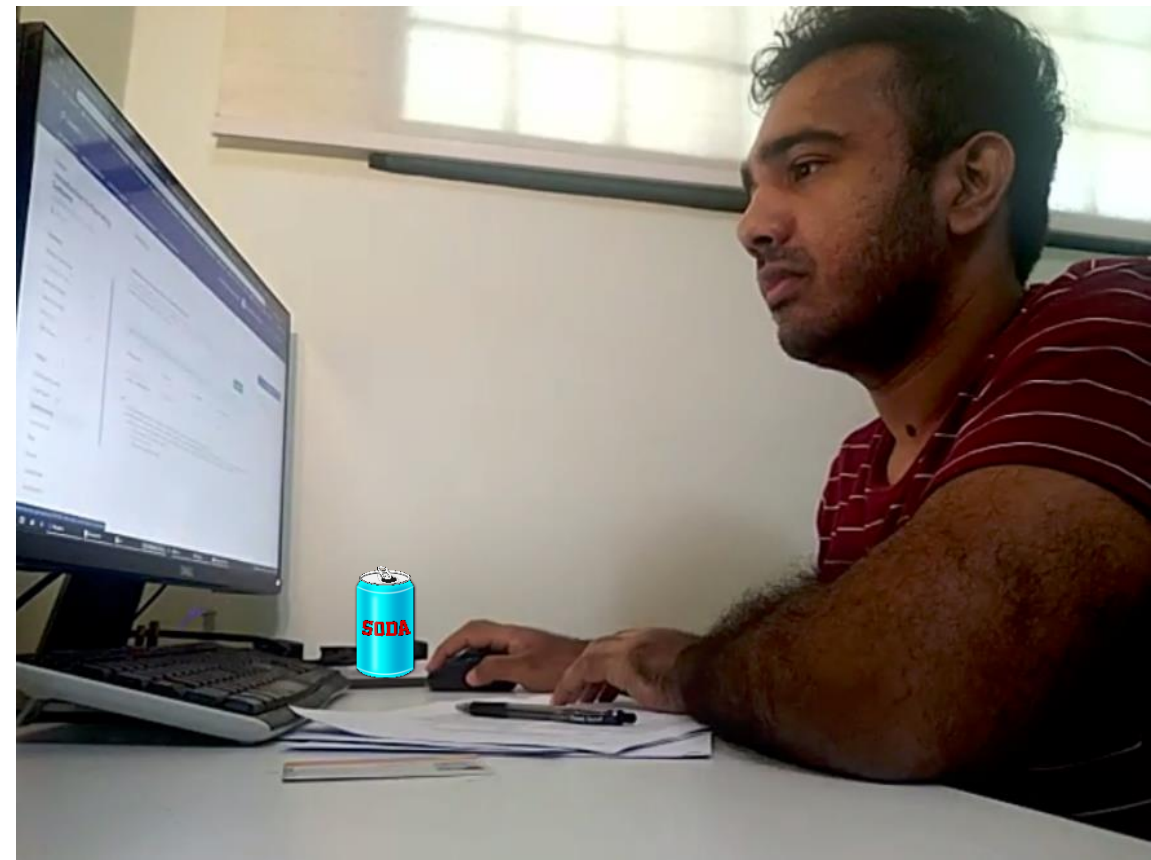
Overview

- Settings for 2nd device
  - Change your zoom name to the same name as in your student ID
    - Make sure it's the same character by character
  - Install Microsoft Teams
  - Mute your zoom   *(especially if you are in a noisy room)*
  - Set your volume to high   *(so that we can call your name just in case)*
    - *Announcement*
    - *Your camera is blocked*
   - *Your monitor is not visible*
    - *You are not visible*
    - ~~*Your zoom connection drops*~~
      - *Nope, we cannot do this, you need to frequently check that you are still connected to zoom*
        (every 10-15 mins)
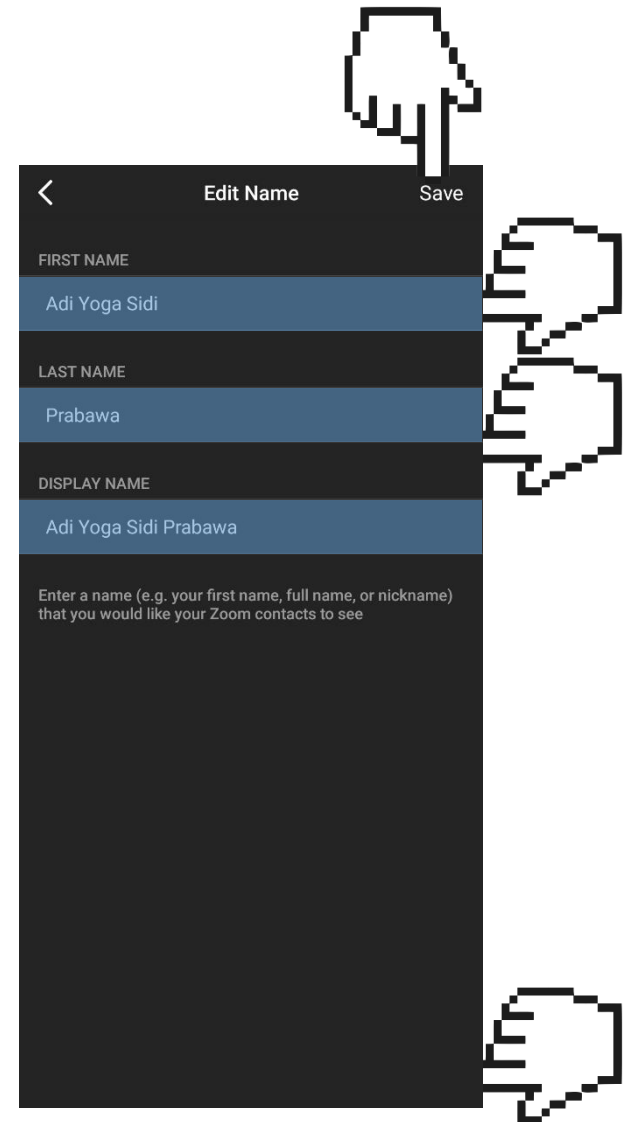
Overview

- Before entering the Zoom room
    1. Open psql and your preferred text editor
        - Never work directly on psql
    2. Disconnect and put away any unapproved devices or items
    3. Open Exemplify   *(on computer)*
        - Log in and make sure it is you
    4. Open Zoom   *(on phone)*
        - Log in and make sure it is you
        - Don't use your friend's account and only change name

Your ID   NUS APAC
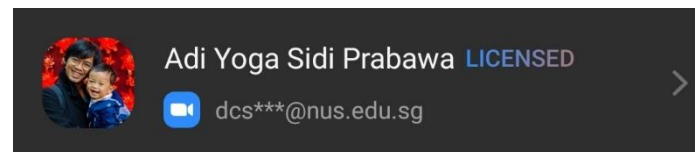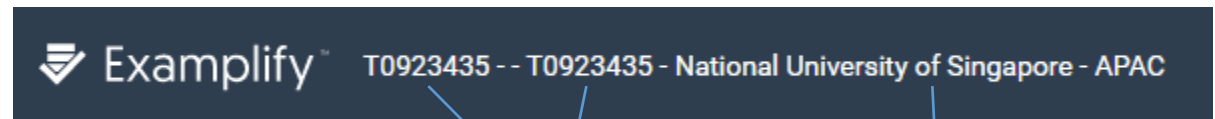
Overview

- How to Log in to Zoom
    1. Sign In with SSO
    2. Enter your company domain: **nus-sg**.zoom.us
    3. Enter your NUS username and password

- How to change your name
    1. Click Settings
    2. Click on your name
    3. Click on Display Name
    4. Change name (for best result change all)
        - Then click Save

Overview

- Entering the Zoom room

  1. Go to your respective zoom room
     - You will be **denied** entry *(from waiting room)* if you enter the wrong room
     - You will be **denied** entry *(from waiting room)* if the name does not match
  2. Please enter 30 minutes before the start of the exam
     - We may **stop** entry at 15 minutes before the start of the exam
     - We will use these 15 minutes to take attendance
     - Entry may then resume after this
  3. Your attendance will be taken   *(called one-by-one)*
     - Prepare your student ID
     - You may be asked to prove that you have no 2nd monitor
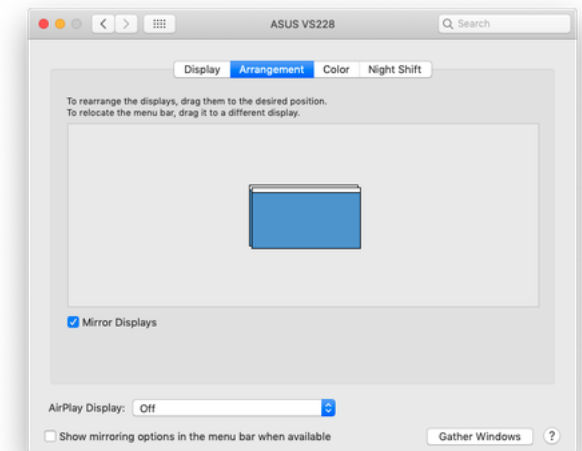 4. Sit back and relax while you wait for the exam to start

Enter Zoom	Attendance	PE	**STOP** & Wait
T-30	T-15	T	T+120 T+???
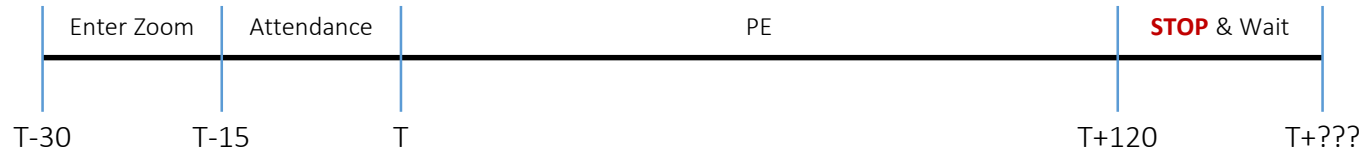
Multiple displays

Didn't detect another display.

Older displays might not always connect automatically. Select Detect to try to connect to them.

Detect

Display Settings > Multiple Display
Click "Detect"

Apple Menu > System Preferences
Click "Displays" then click "Arrangement" tab

Overview

- We will announce/show/chat the password to start *(at start time)*

    1. Enter the exam password and click enter
    2. You should start *immediately*
        - If you delay *intentionally*, you will **NOT** be given extra time even if the timer is still running
        - Technical problems will be granted extra time
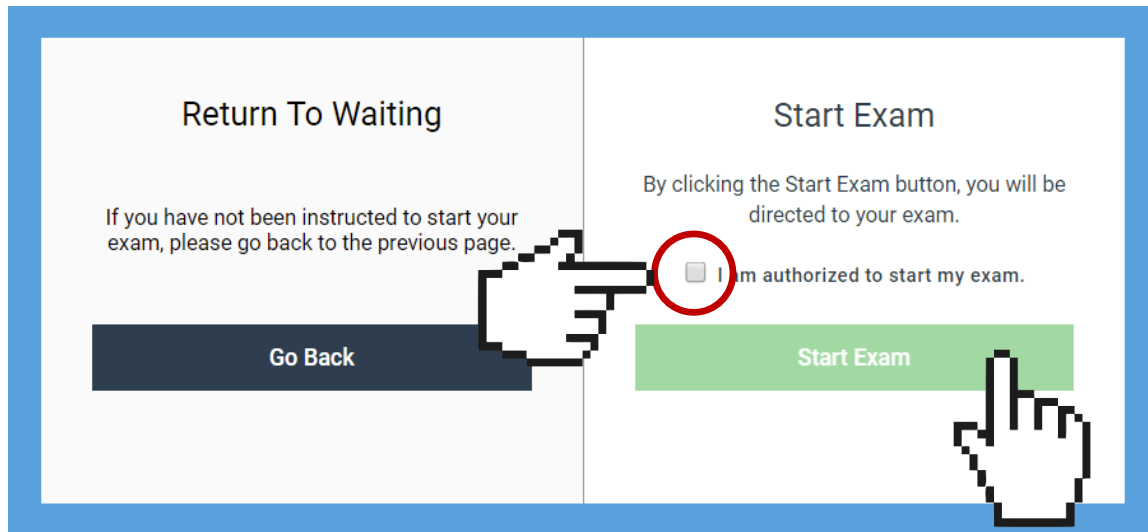
Practice Exam - Non-Secure Block Internet
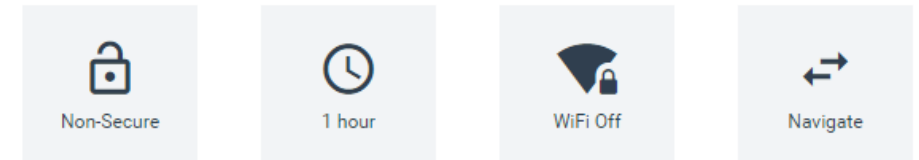
Please enter the exam password to start this exam.

EXAM PASSWORD

| ********** |

Enter

Remove Exam Download

Exam Settings

| Non-Secure | 1 hour | WiFi Off | Navigate |

Return To Waiting

If you have not been instructed to start your exam, please go back to the previous page.

Go Back

Start Exam

By clicking the Start Exam button, you will be directed to your exam.

☐ I am authorized to start my exam.

Start Exam

3. Click Continue on yellow warning
4. Tick on "I am authorized …"
5. Click on Start Exam

Overview

- You can start work
    - Remember, you only have 1 hour for midterm
    - You need to code on IDE, test on psql and copy-paste into Examplify _within this 1 hour_
    - **NO** additional time will be given to copy-paste into Examplify

Overview

- Asking questions?
  - You need to use Zoom chat
    - ❖ From our perspective you are going to:
      1. Look away from your computer
      2. Touch your phone
    - ➤ Looks suspicious!!
      - ➤ Don't do this unless you have questions
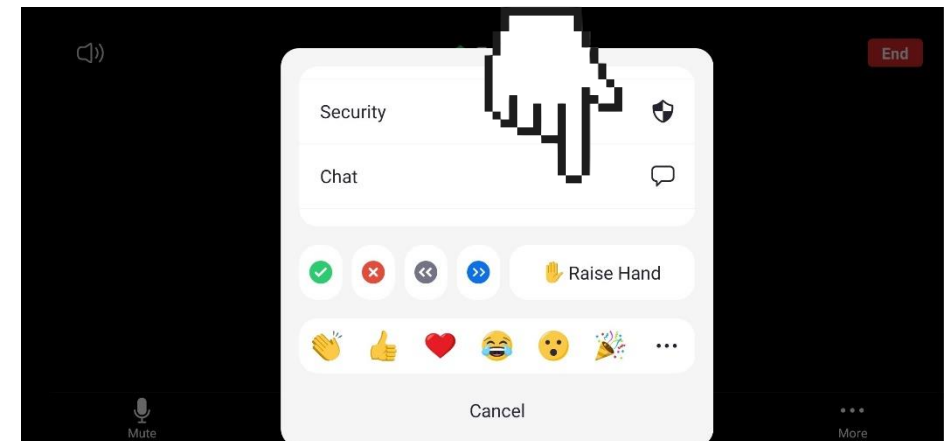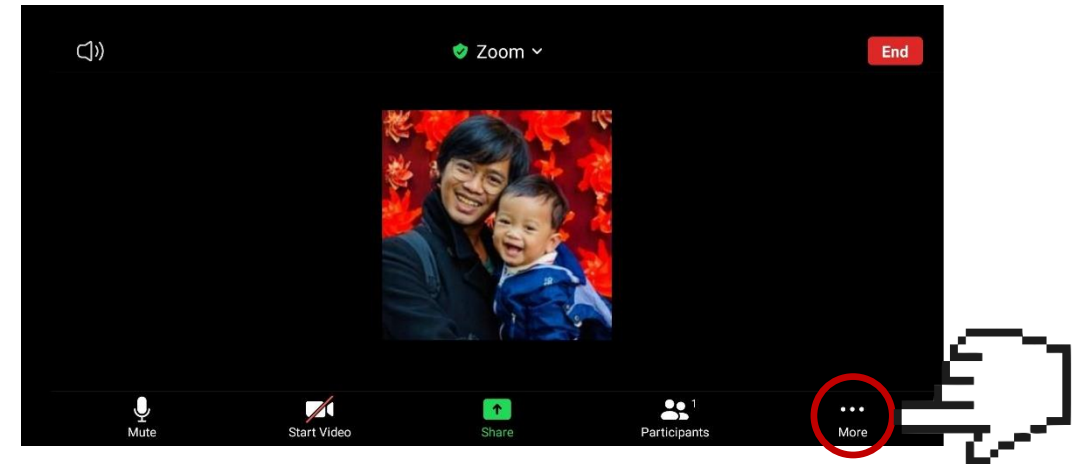   - ❖ Answers will be a reply on your chat

Close | Chat | 🔔

You can only chat with host
(I have no picture since I'm always host)

Send to : Everyone ⌄

Tap here to chat or tap a message to reply | Send

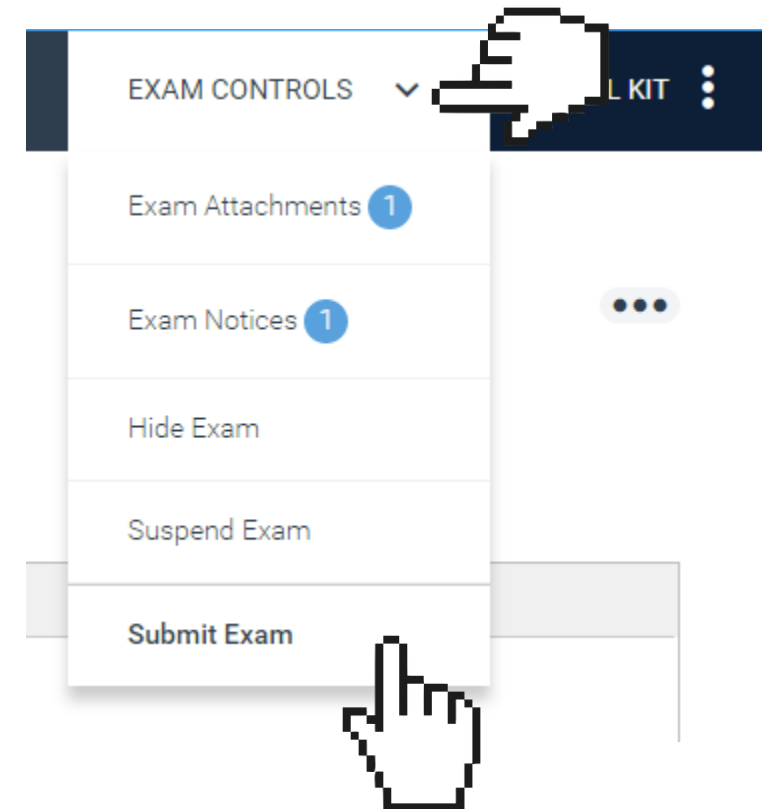👤 Who can see your messages?
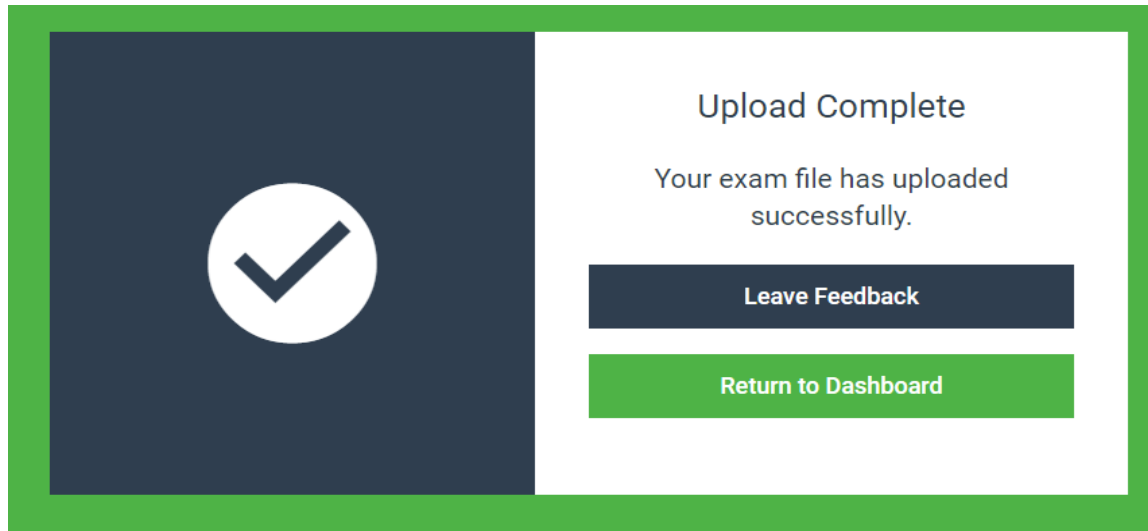
Type your question here

Overview

- Once you are confident with your answer *(or before time limit)*
    1. Copy-paste your answer from IDE to Examplify
        - You will lose indentation
        - Do not worry about this
        - This is a known Examplify problem
    2. You do **NOT** need to correct the indentation on Examplify
        - Just be careful that newline might also be lost
        - If you are using comments on your code, do not use the single line comment (i.e., `--comment`)
            - Use the C-style block comment (i.e., `/* comment */`)

Overview

- Submit your answer on Examplify
    1. If you still want to improve your code, do it before the time limit
    2. Otherwise, click Exam Controls
    3. Then click Submit Exam
    4. Wait until "Upload Complete"
        - **Stay** on this green screen until end of exam

More Information

- Briefing Slides
  - https://wiki.nus.edu.sg/display/DA/Examplify+Student+Briefing+Slides
- Briefing Video
  - https://wiki.nus.edu.sg/display/DA/Examplify+Student+Briefing+Video

- There is a briefing by CIT on Monday, 4 October 2021 at 10:00am
  - Please attend if you still have any questions and/or problems

Midterm Practice

- We will release a past year midterm
  - Examplify
    - 2018-2019 Semester 2
    - 2019-2020 Semester 1

  Examplify Check
  Check that you can open psql (or pgadmin) with Examplify.
  Otherwise, stick with psql.

  - PDF/HTML
    - 2020-2021 Semester 1
    - 2020-2021 Semester 2

  Training Check
  Do the past midterm paper within the time-limit. For some past midterm paper, the time-limit was more than 1 hour.

  - ❖ Solution may not be available for some
    - ❖ It was not taught by me, so my collections are limited