

FIT2004

Algorithms and Data Structures

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Referencing materials by
Nathan Companeze, Aamir Cheema, Arun Konagurthu and Lloyd Allison



Faculty of Information Technology, Monash University

COMMONWEALTH OF AUSTRALIA

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Ready?

Agenda

- All possible assessments
- Current assessments arrangements
- Exam

Agenda

- All possible assessments
 - Current assessments arrangements
 - Exam
- 
- With stats

Let us begin...

Assessments

What has been in the unit?

- Studio preparation
- Assignments
- Mid-semester test
- Exam

Assessments

What has been in the unit?

- Studio preparation
- Assignments
- ~~Mid-semester test~~
- Exam

Assessments

What has been in the unit?

- ~~Studio preparation~~
- Assignments
- ~~Mid-semester test~~
- Exam

Assessments

What has been in the unit?

- ~~Studio preparation~~
- Assignments
 - 4 assignments
- ~~Mid-semester test~~
- Exam

Assessments

What has been in the unit?

- ~~Studio preparation~~
- Assignments
 - ~~— 4 assignments~~
 - 3 assignments
- ~~Mid-semester test~~
- Exam

Assessments

What has been in the unit?

- ~~Studio preparation~~
- Assignments
 - ~~— 4 assignments~~
 - ~~— 3 assignments~~
 - 2 assignments
- ~~Mid-semester test~~
- Exam

Assessments

What has been in the unit?

- ~~Studio preparation~~
- Quiz
- Assignments
 - ~~— 4 assignments~~
 - ~~— 3 assignments~~
 - 2 assignments
- ~~Mid-semester test~~
- Exam

Assessments

What has been in the unit?

- Quiz
- Assignments
 - 2 assignments
- Exam

Questions?
Break...

Assessments

Current Arrangements

- Quiz
- Assignment
- Exam

Assessments

Current Arrangements

- Quiz 10%
- Assignment 40%
- Exam 50%

- Quiz 10%
- Assignment 40%
 - Assignment 1 20%
 - Assignment 2 20%
- Exam 50%
 - 1 exam

- Hurdle of 45% remains
 - For quiz + assignment
 - For exam

Assessments

Current Arrangements

- Quiz 10%
- Assignment 40%
 - Assignment 1 20%
 - Assignment 2 20%
- Exam 50%
 - 1 exam

- Hurdle of 45% remains
 - For quiz + assignment
 - For exam
- Hurdle 50% total

Beginning of the sem:



Week 9 rn:



Questions?
Break...

Assignments

More than just marks...

- Assignment 1
- Assignment 2

Assignments

More than just marks...

- Assignment 1 = 20%
- Assignment 2 = 20%

Assignments

More than just marks...

- Assignment 1 = 20% week08
- Assignment 2 = 20% week12



Assignments

More than just marks...

- Assignment 1 = 20% week08
- Assignment 2 = 20% week12



Assignments

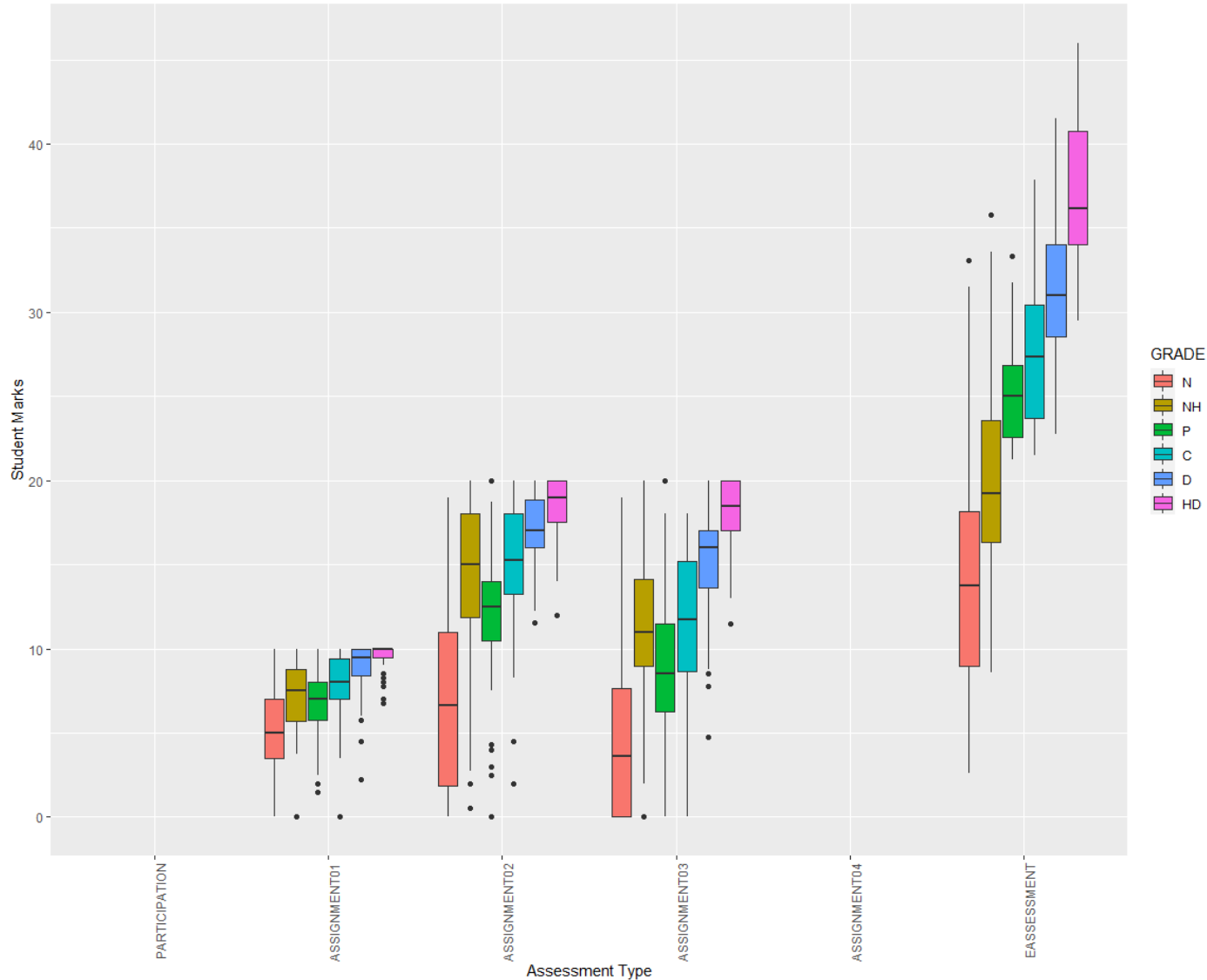
More than just marks...

- Assignment 1 = 20% week08
- Assignment 2 = 20% week12

- Questions are problem solving-based
- To be answered using what is learnt in the unit
- Requires independence
 - Understanding the assignment task
 - Working through the example
 - Making test cases, especially boundary cases
 - Ensuring solution is efficient

Assignments

More than just marks...



Assignments

More than just marks...

- Doing the assignment on your own help you
 - **Pass** the unit
 - Do well in your job interview

- Doing well in your assignment but not on your own (aka getting carried)
 - **Fail** the unit
 - Struggle with job interview

Assignment

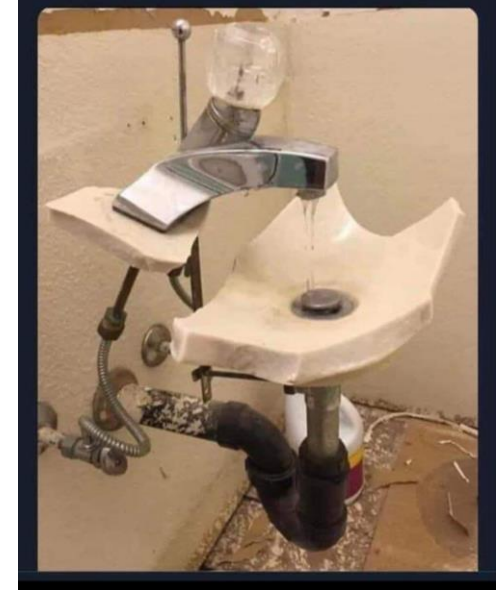
How is it like?

- Released around 2 weeks earlier
- Submit on Moodle
- Submit on Friday
- Submit by 16.30pm (Melbourne time)
- I will send a Google calendar invite for this, so you don't need to worry about daylight savings
- Late submission is 10% penalty from maximum marks, up to 5 days maximum

Assignment

How is it like?

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-
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- Assignment briefing during class
- Assignment debrief during class, after marks released

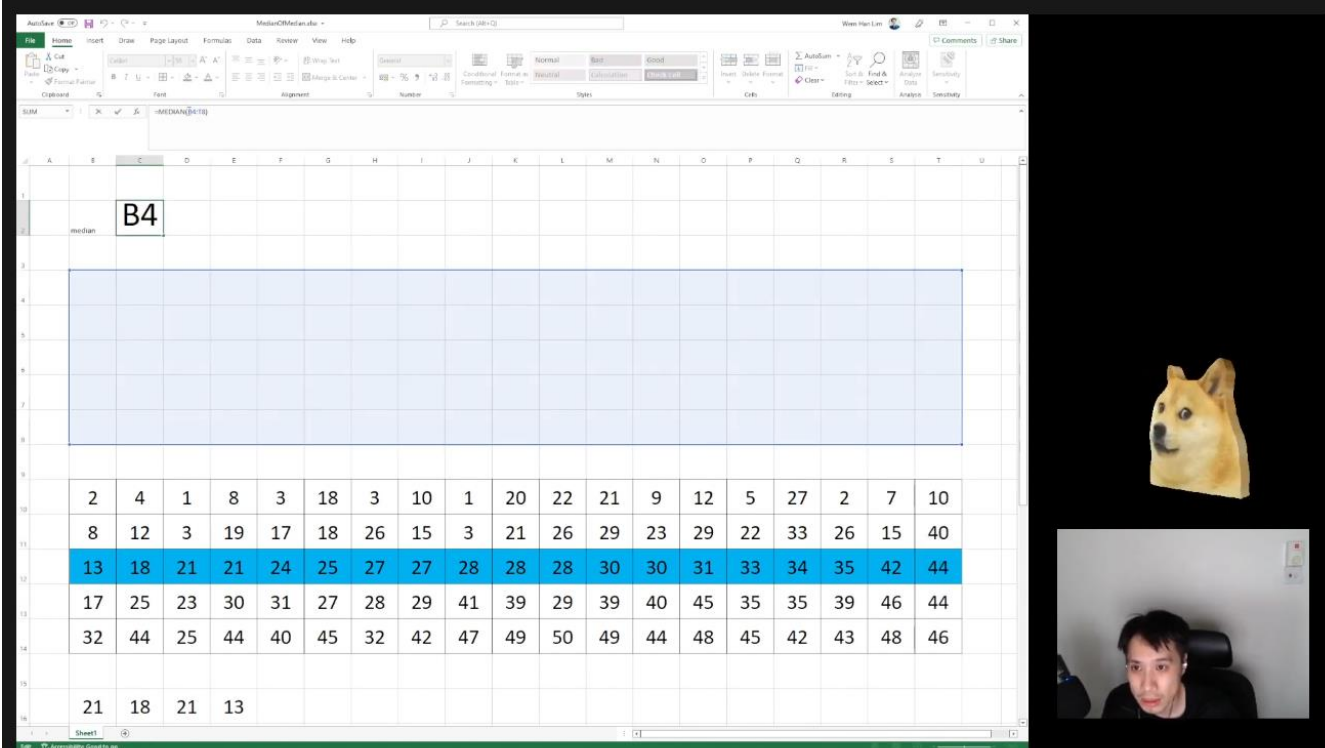
- Feel free to post your question:
 - Microsoft Teams where me or other Malaysian students will try to support
 - Ed forum where the Clayton teaching team will try to support

- Assignment briefing during class
 - Additional session (extra classes) might be conducted
- Assignment debrief during class, after marks released
- Feel free to post your question:
 - Microsoft Teams where me or other Malaysian students will try to support
 - Ed forum where the Clayton teaching team will try to support
 - Additional live QnA question might be conducted

- Assignment briefing during class
 - Additional session (extra classes) might be conducted
- Assignment debrief during class, after marks released
 - Statistics of performance
 - Common mistakes
 - Solution (from an algorithm POV, not coding)
- Feel free to post your question:
 - Microsoft Teams where me or other Malaysian students will try to support
 - Ed forum where the Clayton teaching team will try to support
 - Additional live QnA question might be conducted

Assignments

Additional support?



The screenshot shows a Microsoft Excel spreadsheet with a data table. The table has 17 columns and 10 rows of data. The 10th row is highlighted in blue. A video player overlay is visible on the right side of the spreadsheet, showing a person's face and a Dogecoin meme.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
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[FIT2004_2022sem01] Lecture03 Bonus Median of Median For QuickSelect

Unlisted

aecoian_CompSci
126 subscribers

ANALYTICS EDIT VIDEO

590 views 7 Apr 2022 FIT2004 Lecture03 Bonus Median of Median For QuickSelect
Recorded from 2022 semester 01.
All context are based on the recorded semester.

No timestamp, watch the entire thing

For Year 2022 Semester 01, Monash University Malaysia. Copyright to Ian Wern Han Lim from Monash University Malaysia.

PS: Video is not meant to be shared with anyone outside of my students. Additional details etc are on Slack/ MS Teams, so do not take the content out of context if you are not in it.

Show less

Questions?
Break...

Ethics

IMPORTANT

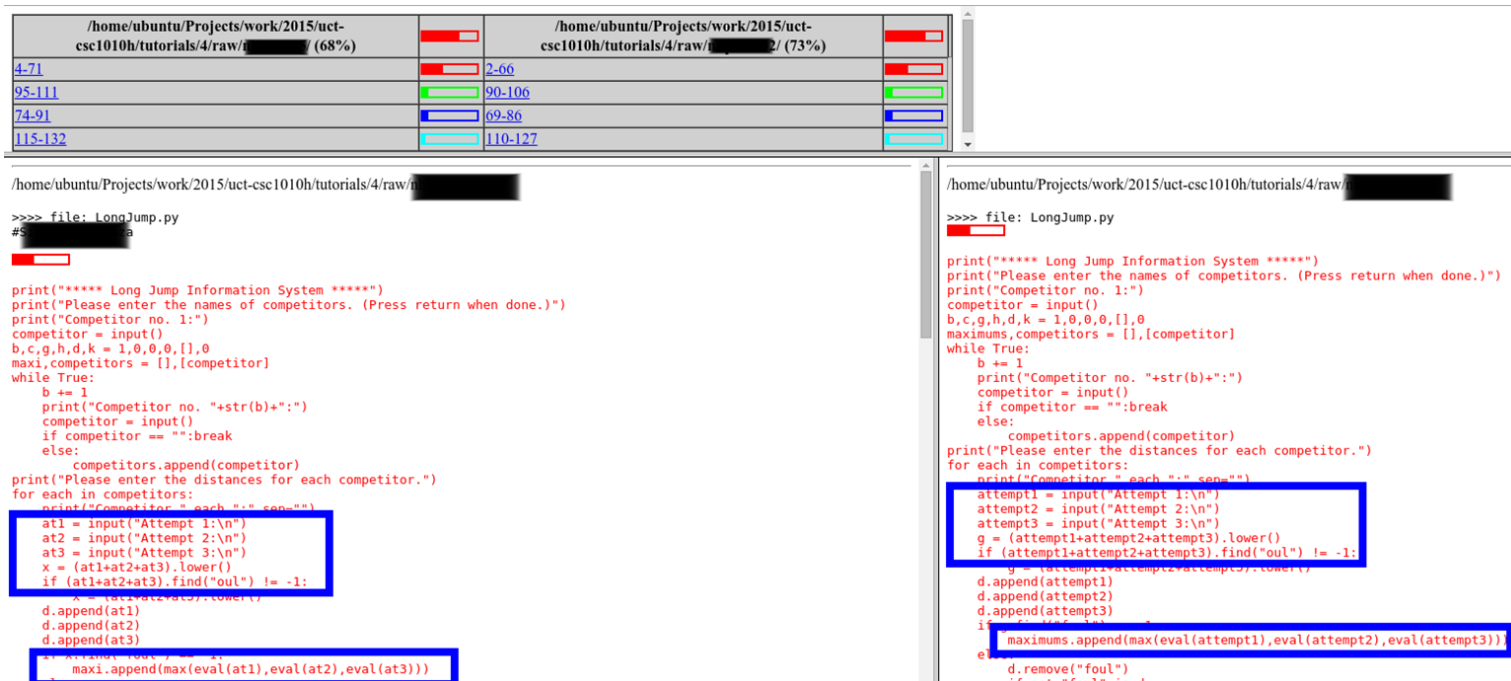
Cheating, Collusion, Plagiarism

- **Cheating:** Seeking to obtain an unfair advantage in an examination or in other written or practical work required to be submitted or completed for assessment.
- **Collusion:** Unauthorized collaboration on assessable work with another person or persons.
- **Plagiarism:** To take and use another person's ideas and or manner of expressing them and to pass them off as one's own by failing to give appropriate acknowledgement. This includes material from any source, staff, students or the Internet – published and un-published works.

<http://infotech.monash.edu.au/resources/student/assignments/policies.html>

- Plagiarism/ Collusion
 - Every semester, we still have cases

- Plagiarism/ Collusion
 - Every semester, we still have cases
 - We will know



The screenshot displays a plagiarism detection interface. At the top, two files are compared: `/home/ubuntu/Projects/work/2015/uct-csc1010h/tutorials/4/raw/...` (68%) and `/home/ubuntu/Projects/work/2015/uct-csc1010h/tutorials/4/raw/...` (73%). Below this, a table shows the similarity scores for different code blocks. The first block, lines 4-71, has a score of 2-66. The second block, lines 95-111, has a score of 90-106. The third block, lines 74-91, has a score of 69-86. The fourth block, lines 115-132, has a score of 110-127. Below the table, the code for `LongJump.py` is shown. The code is a Python script that prompts the user to enter competitor names and distances for a long jump competition. The code is divided into two sections, each with a blue box highlighting specific lines. The first section, lines 115-132, contains the code for entering competitor names and distances. The second section, lines 110-127, contains the code for calculating the maximum distance and removing any fouls.

```
>>> file: LongJump.py
#S...
print("***** Long Jump Information System *****")
print("Please enter the names of competitors. (Press return when done.)")
print("Competitor no. 1:")
competitor = input()
b,c,g,h,d,k = 1,0,0,0,[],0
maxi,competitors = [],[competitor]
while True:
    b += 1
    print("Competitor no. "+str(b)+":")
    competitor = input()
    if competitor == "":break
    else:
        competitors.append(competitor)
print("Please enter the distances for each competitor.")
for each in competitors:
    print("Competitor = each "-" sep="")
    at1 = input("Attempt 1:\n")
    at2 = input("Attempt 2:\n")
    at3 = input("Attempt 3:\n")
    x = (at1+at2+at3).lower()
    if (at1+at2+at3).find("oul") != -1:
        x = (at1+at2+at3).lower()
    d.append(at1)
    d.append(at2)
    d.append(at3)
    maxi.append(max(eval(at1),eval(at2),eval(at3)))

>>> file: LongJump.py
print("***** Long Jump Information System *****")
print("Please enter the names of competitors. (Press return when done.)")
print("Competitor no. 1:")
competitor = input()
b,c,g,h,d,k = 1,0,0,0,[],0
maximums,competitors = [],[competitor]
while True:
    b += 1
    print("Competitor no. "+str(b)+":")
    competitor = input()
    if competitor == "":break
    else:
        competitors.append(competitor)
print("Please enter the distances for each competitor.")
for each in competitors:
    print("Competitor = each "-" sep="")
    attempt1 = input("Attempt 1:\n")
    attempt2 = input("Attempt 2:\n")
    attempt3 = input("Attempt 3:\n")
    g = (attempt1+attempt2+attempt3).lower()
    if (attempt1+attempt2+attempt3).find("oul") != -1:
        g = (attempt1+attempt2+attempt3).lower()
    d.append(attempt1)
    d.append(attempt2)
    d.append(attempt3)
    if (attempt1+attempt2+attempt3).find("oul") != -1:
        maximums.append(max(eval(attempt1),eval(attempt2),eval(attempt3)))
    else:
        d.remove("foul")
        if not "foul" in d:
```

- Plagiarism/ Collusion
 - Every semester, we still have cases
 - We will know
 - Online
 - Your friends
 - Your seniors
 - Not everything you see online is correct

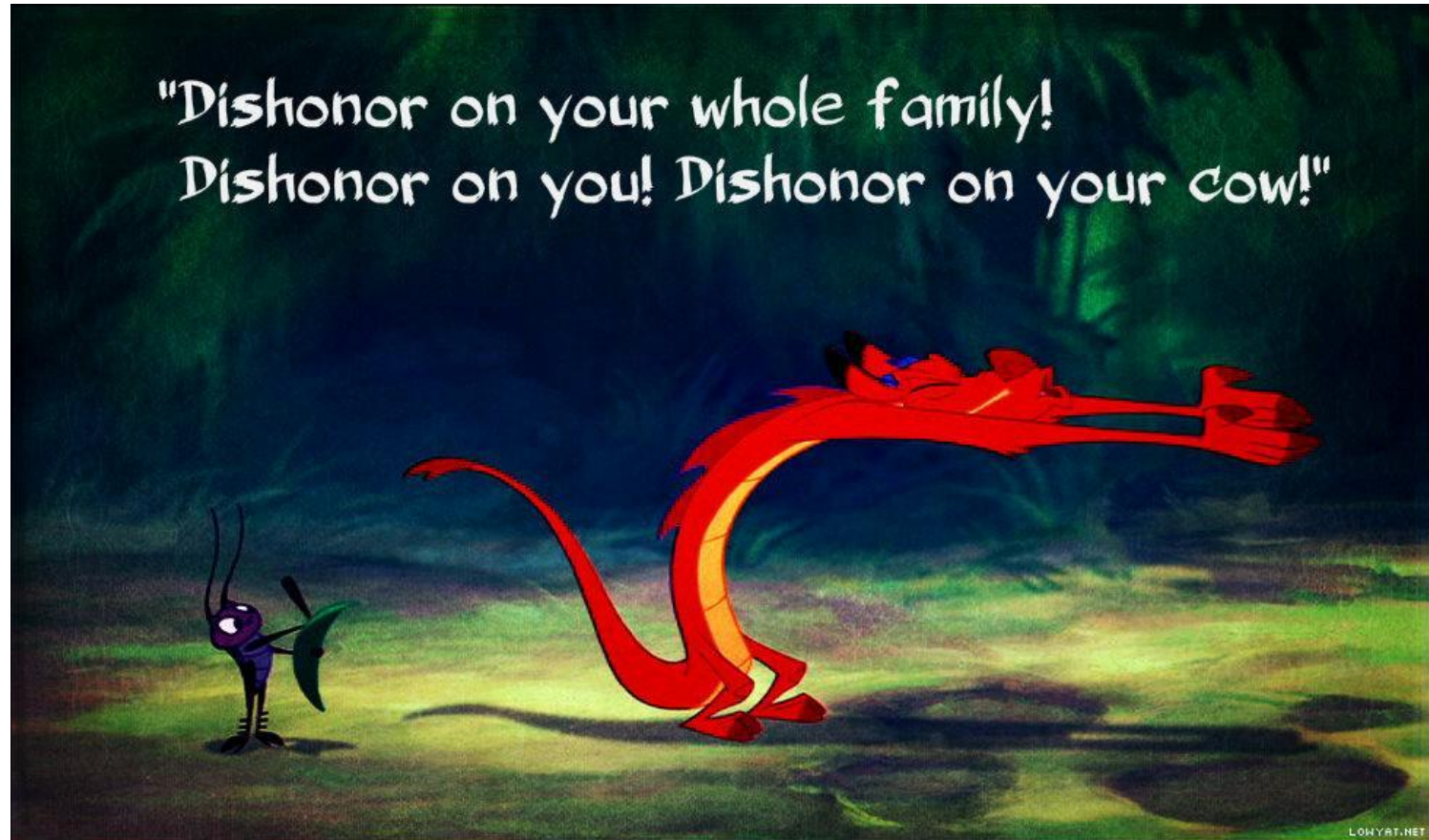


- Plagiarism/ Collusion
 - Every semester, **we still have cases**
 - People do fail because of it
 - Repeated offenders have it even harder!
 - We will know
 - Online
 - Your friends
 - Your seniors

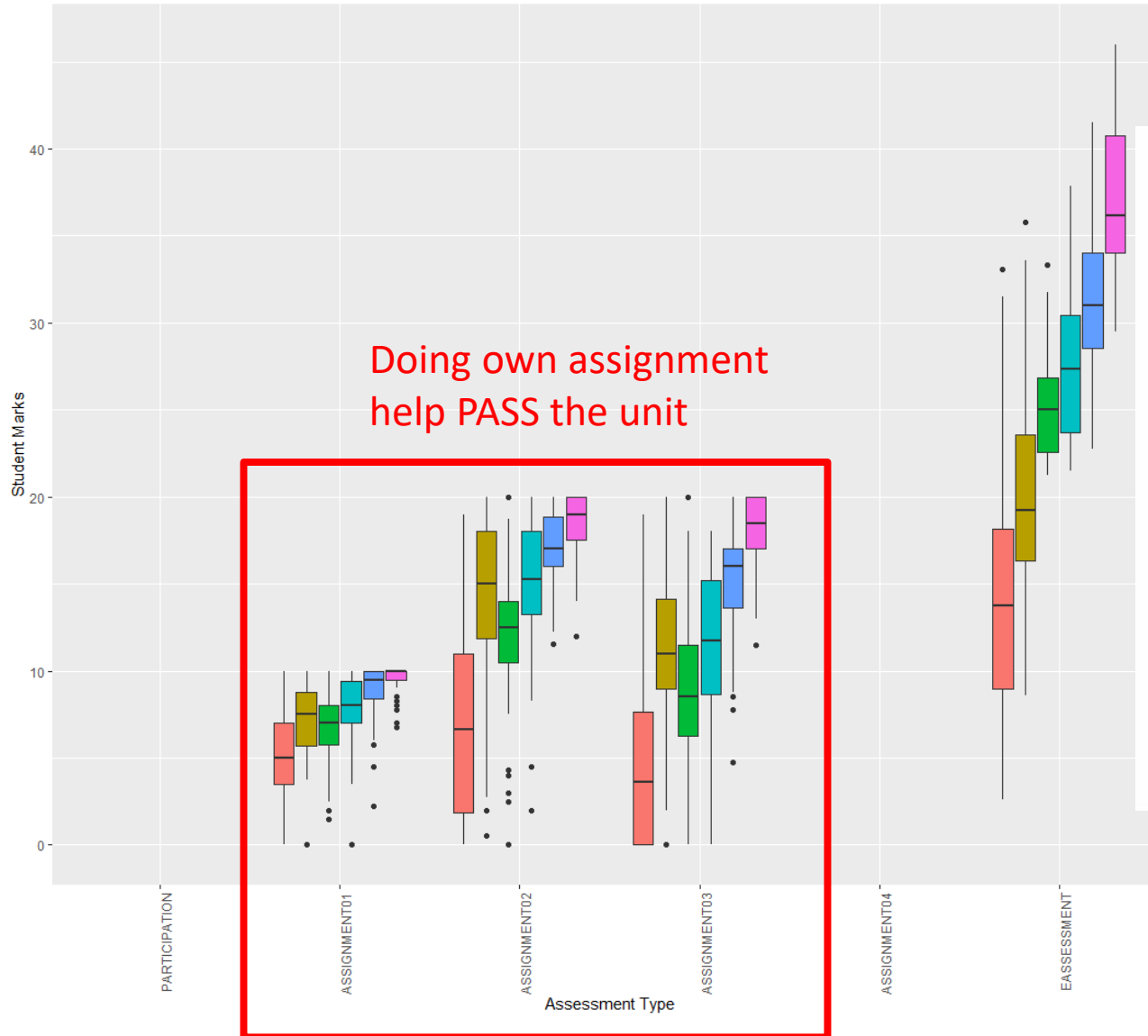


Ethics

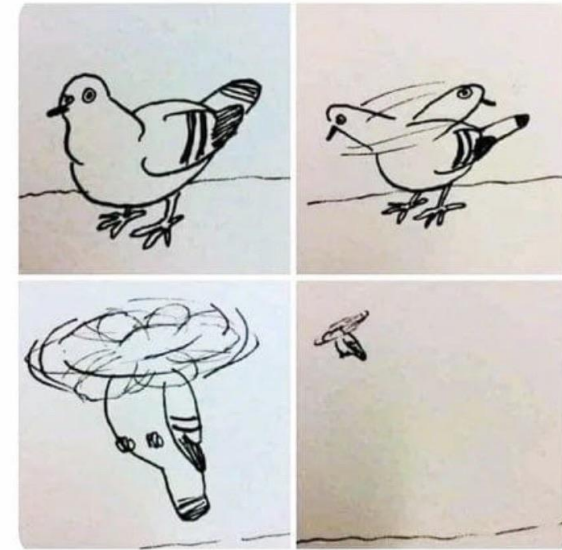
IMPORTANT



Ethics IMPORTANT



When your program
is a complete mess,
but it does its job



- Academic integrity/ misconduct more serious now
 - A lot of penalty, quite a number FAIL last semester
 - Read <https://www.monash.edu/exams/results/grading-update>



- The **use of generative AI is banned**

The use of generative AI and similar tools is not allowed in this unit!



Unless otherwise specified, all in-semester assessment tasks will be submitted to a similarity detection system.

- You can use it to **learn**.
- You can use it to **explore**.
- You can't use it in your solution.
- Let me demo Bing 3.5 and GitHub Copilot.

Quiz

New Assessment?

- This is new...
- Why?

- This is new...
- Why?
 - Assignment marking takes too long to get your initial feedback.
 - A subset of questions perform badly in the final exam.

Quiz

New Assessment?

- Week 1 to Week 3 topics
- Mostly (if not all) MCQ.
- Held on Moodle.
- Open for 1-2 days.
- Focus is on learning outcome.

- Week 1 to Week 3 topics
 - Do have some **math**...
- Mostly (if not all) MCQ.
- Held on Moodle.
- Open for 1-2 days.
- Focus is on learning outcome.

- Pretty useless for the unit?



Your 24/7 study help (Studiosity)

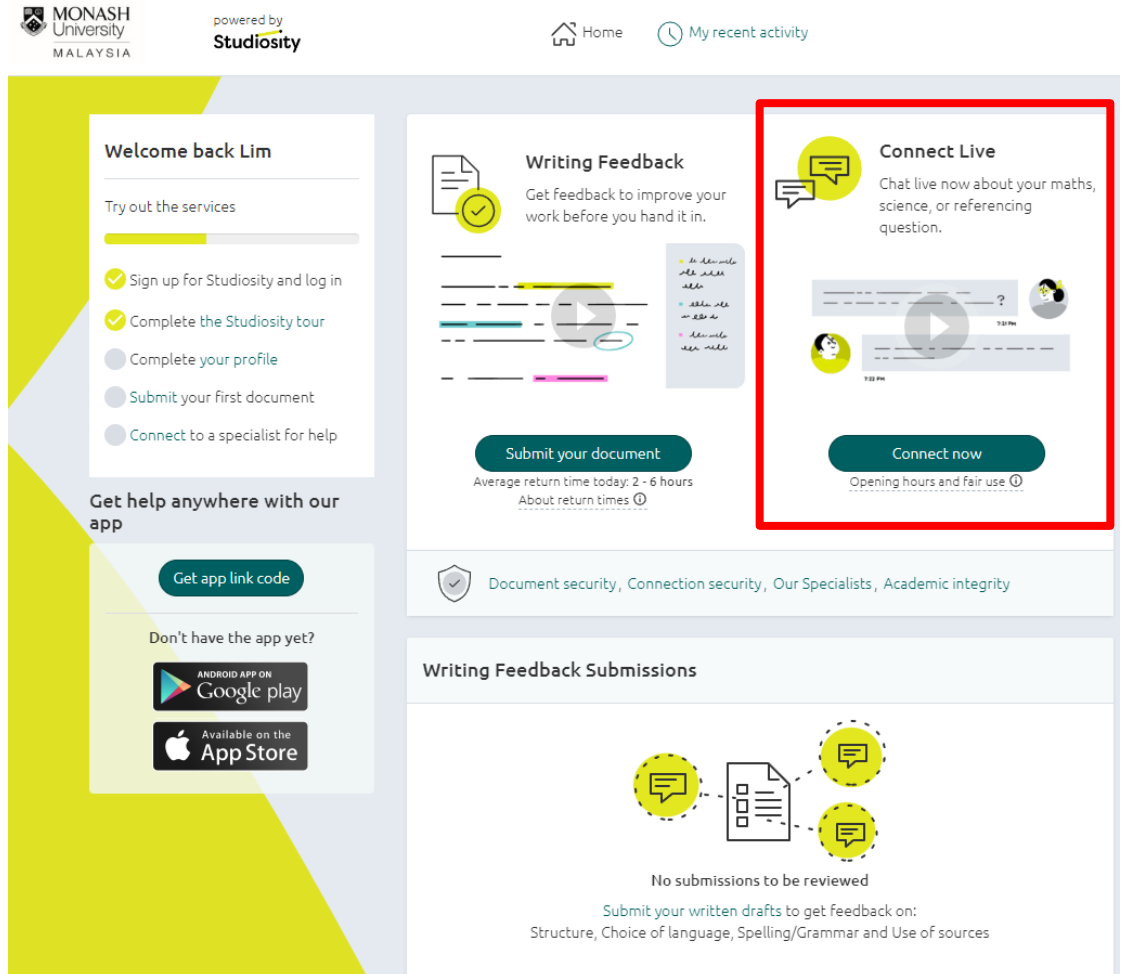
Studiosity provides fast **feedback on your academic writing** from real experts, anytime, anywhere. You can also **connect to a Specialist** in real-time to ask a question about writing, research, referencing, study skills, or core mathematics & science concepts.

[Learn more](#)[Get Started](#)[Class Info ►](#)

Quiz

Studiosity

- Pretty useless for the unit?
- Useful to **help** get the **math** part.



The screenshot shows the Studiosity website interface. At the top, there is a navigation bar with the Monash University Malaysia logo, the text "powered by Studiosity", and links for "Home" and "My recent activity". The main content area is divided into several sections:

- Welcome back Lim**: A section with a progress bar and a list of tasks: "Sign up for Studiosity and log in", "Complete the Studiosity tour", "Complete your profile", "Submit your first document", and "Connect to a specialist for help". Below this is a section for "Get help anywhere with our app" with a "Get app link code" button and links to the Google Play and App Store.
- Writing Feedback**: A section with a document icon and a play button, encouraging users to get feedback before submitting. It includes a "Submit your document" button and a note about the average return time of 2-6 hours.
- Connect Live**: A section highlighted with a red border, featuring a chat icon and a "Connect now" button. It includes a video player showing a chat interface and a note about opening hours and fair use.
- Document security, Connection security, Our Specialists, Academic integrity**: A section with a shield icon and a list of security and support topics.
- Writing Feedback Submissions**: A section with a document icon and a play button, indicating that no submissions are currently being reviewed. It includes a note about submitting written drafts for feedback on structure, language, spelling/grammar, and use of sources.

Questions?
Break...

Exam

The final boss

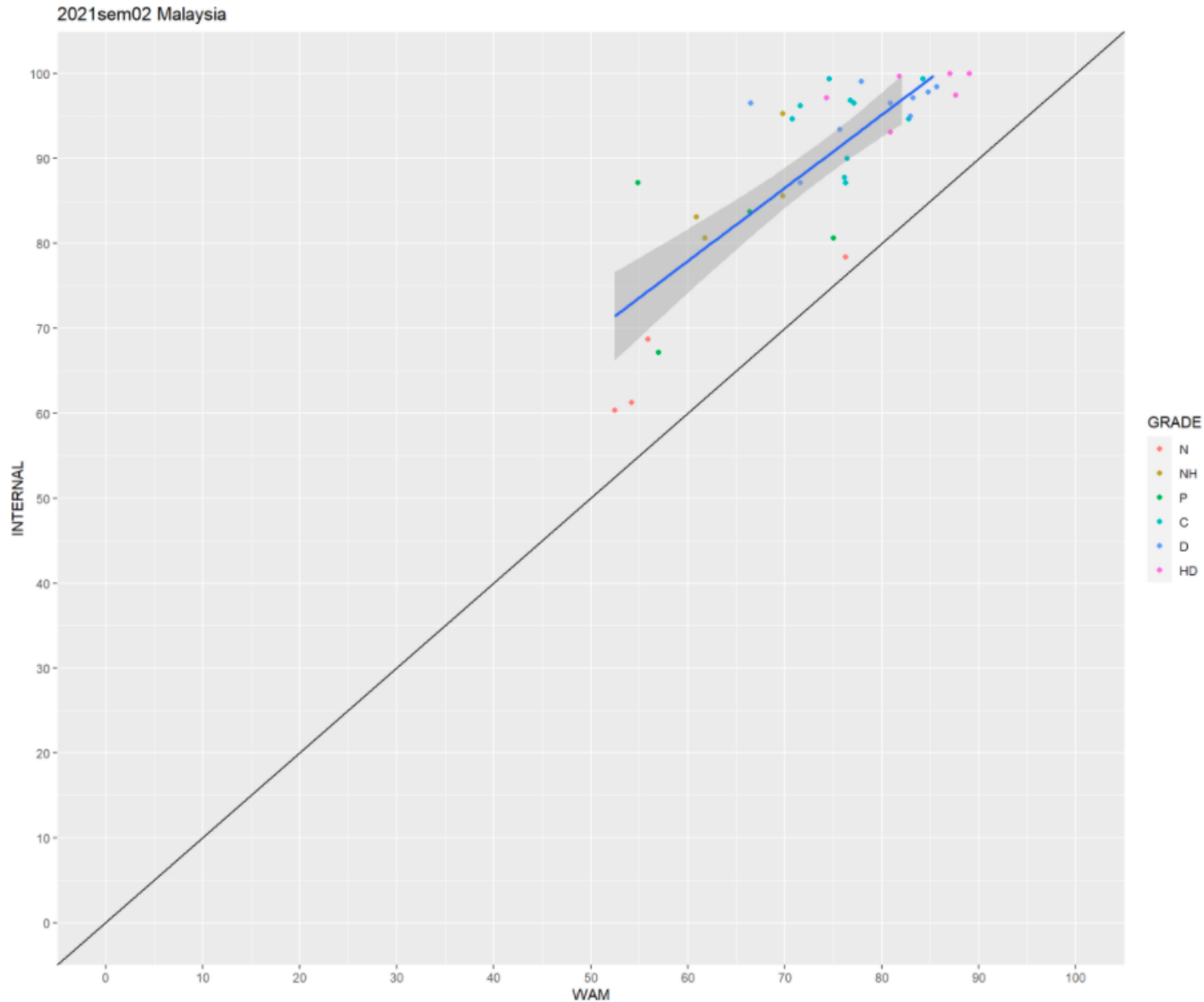
Exam

The final boss

- Worth 50%
- Determines if you pass or fail the unit...

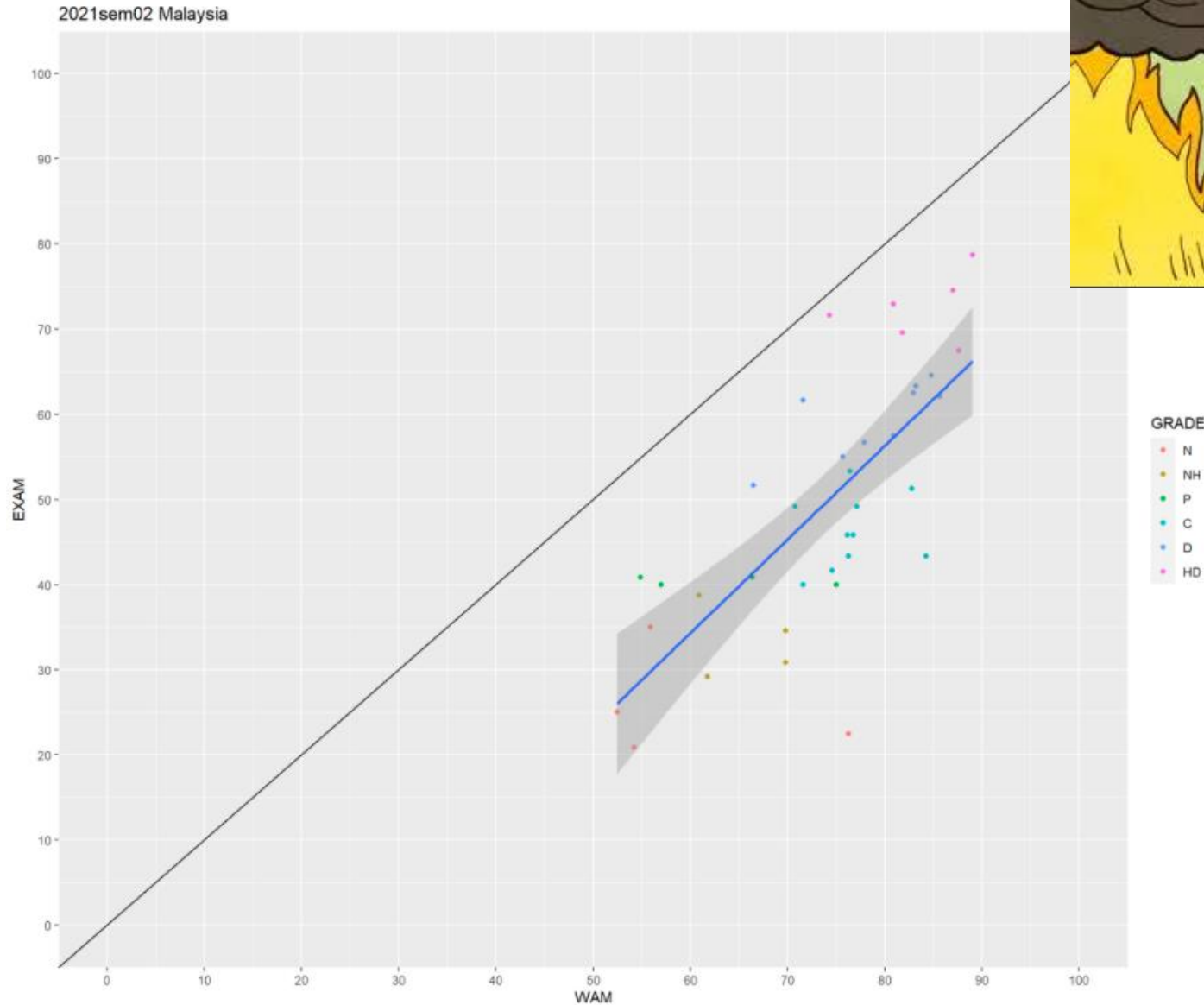
Exam

The final boss



Exam

The final boss



Exam

The final boss

- Worth 50%
- Determines if you pass or fail the unit...
- 2hours 10minutes
- Closed book
- No programming, pseudocode only
 - Per learning outcome, focus on algo
- Covers all topic

Exam

The final boss

- Worth 50%
- Determines if you pass or fail the unit...
- 2hours 10minutes
- Closed book
- No programming, pseudocode only
 - Per learning outcome, focus on algo
- Covers all topic
- Will hold a **5 hours revision** seminar close to exam



Exam

The final boss

- Worth 50%
- Determines if you pass or fail the unit...
- 2hours 10minutes
- Closed book
- No programming, pseudocode only
 - Per learning outcome, focus on algo
- Covers all topic
- Will hold a 5 hours revision seminar close to exam
- Ez to pass, Difficult to score

Questions?
Break...

Senior Advice

From earlier semesters...

Prepare for tutorial before going to it

Attend tutorials, sit tight, listen, take notes

Don't be afraid to attempt the tutorials questions and coding challenges even if you don't get it right. It's all about learning

Listen to Ian. Easy HD

Please read the textbook to understanding better the unit and do the pre class activity to get the free marks !!!

Always keep up to date with topics being done. Also always carefully listen to what Ian's says; It will help you for both exams and assignments.

Goodluck

Thank You