

INFO5992 Understanding IT Innovations

Innovation Reports

Semester 1, 2025



Acknowledgement of Country

I would like to acknowledge the Traditional Owners of Australia and recognise their continuing connection to land, water and culture. I pay my respects to the first nations people and their Elders, past, present and emerging.



Copyright warning

COMMONWEALTH OF AUSTRALIA

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Assessments

- **2 Innovation Reports (Group Work) - Total 30% (Weeks 6 & 11)**
 - Two stages :
 - Report 1 (10% (Week 6) + address reviews (Week 8) 2%)
Report 2 (15% (Week 11) + address reviews (due on 6th June) 3%)
Research reports on a topic with IT innovation, with multiple case studies
- **Presentation (Group) – IT Innovation Company – 10% (Weeks 12 & 13)**
 - Presentation of Innovation concepts applied to pitching a new startup idea!
 - At the tutorial
 - Attendance and participation in group presentations

Three stages of your Assessment



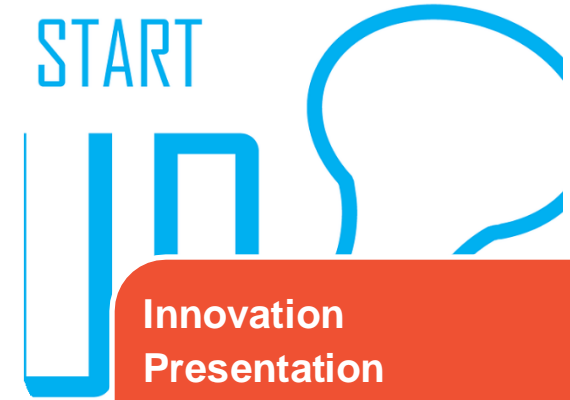
Technology Selection (Innovation Report I) + Review

- Group work
- Pick a technology and identify an industry using it
- Address feedback in review stage



Technology Innovation (Innovation Report II) + Review

- Group Work
- Select two real-world companies and report on how they use selected technology within your chosen industry
- Address feedback in review stage



Innovation Presentation

- Group Work
- Based on your group's technology and industry, pitch a startup idea!

Innovation Reports Assessment 1

Innovation Report – Learning Objectives

- Research into emerging technology and applications/potential of Innovation concepts for various industries
- Learning to do a critical analysis of multiple innovation concepts with emerging technologies
- Analysing real-world company examples that are innovatively using the technology among the chosen industries

Innovation Reports 1 and 2 (Group work)

- The assessment will be done in a group of 4-5 members
 - I hope you have already formed your group! If not, do form groups at your Tutorial this week and next – talk to your tutor
- Each group should select ONE technology from the provided list and ONE industry in which the technology is used for Reports 1 and 2.
- Note that no two groups can have the same combination of technology and industry within a particular tutorial. So, **email your tutor your first and second preferences for technology and industry by the end of Week 3.**

2-Stage Report

- **Innovation Report 1 – Group** [10%] Technology – discuss your group's chosen Technology
 - Max 2000 words as a group
 - The group will select a common Technology and discuss
 - **Innovation Report 1 – Review** [2%] Address the feedback provided for your report.
 - **Innovation Report 2 – Group** [15%] Industry Application of the Technology
 - Max 5200 words per group
 - For each group, with your chosen Technology and Industry, you are to write a report about its application.
- Innovation Report 2 – Review** [3%] Address the feedback provided for your report.

Stage 1 – Group Report Structure

**Detailed Guidance for the report content provided in the section starting at Slide 27.*

- You will select one emerging Technology from the provided Technology List (Slide 21) as a group.
- Each group also needs to select one **Unique Industry that uses the Technology**
 - **You do not need to write about specific companies in the industry, but just ensure you do in Stage 2 of the report.**
- As a group, you will write about the chosen technology and its application to the chosen industry.

Stage 1 – Group Report Structure (Cont.)

Stage 1 Report Technology – discuss your group's chosen Technology in the context of the chosen industry. This report should have the following four sections:

1. Present the technology
2. Market potential and the current state of development in the industry.
3. Potential Impact of the technology on the industry
4. Discuss the Technology based on the concepts we studied in Weeks 1-5
 1. **Dominant Design, Disruptive Innovation, and Diffusion**
 2. These concepts can be discussed based on either the tech being already applied or has the potential to apply

Stage 1 – Group Report Structure (Cont.)

Note that the three concepts discussed in section 4 – **Dominant Design**, **Disruptive Innovation** and **Diffusion** should be divided up among the group members in groups of a **maximum of two students**. A **table of contributions (shown in the next slide for clarity) should be included in the report** to show which members were responsible for discussing which concept. Even though group members are responsible for discussing their own specific concepts, the whole group is encouraged to provide input and feedback to each other, as the marks are still given to the whole group and not to individual members.

For example, the division of concepts among group members can look like below:

	Dominant Design	Disruptive Innovation	Diffusion of Innovation
Group of 5	2 members	2 members	1 member
Group of 4	2 members	1 member	1 member

Note: this is only an example distribution of members. It is up to you how you distribute the concepts among yourselves as long as one concept is not done by more than two members

Stage 1 – Group Report Structure (Cont.)

This what the Table of contributions can look like:

Student ID	Name	List of Contribution
S1234567	ABC	<ul style="list-style-type: none">• Contribution 1• Contribution 2• Contribution 3• Contribution 4
S1234567	DEF	<ul style="list-style-type: none">• Contribution 1• Contribution 2• Contribution 3• Contribution 4
S1234567	GHI	<ul style="list-style-type: none">• Contribution 1• Contribution 2• Contribution 3• Contribution 4
S1234567	JKL	<ul style="list-style-type: none">• No Contributions

Stage 2 – Group Report Structure - Industry Application of the Technology

**Detailed Guidance for the report content provided in the section starting at Slide 27.*

Select **2 real-world company examples** from the chosen industry and **justify your selection**

1. Select two companies from your industry utilising your technology and justify your selection with a compelling motivation. In addition, consider the available information for your chosen companies, i.e., **not too new where there is no evidence.**
2. Discuss the **Distribution Innovation** concepts we will study in wks5 to 7
 - a) Open/Closed innovation; Platform innovation; Web APIs; Crowd innovations; Free and Open-source software; User innovation; Open Data; Platform Economy
 - b) Choose the two most relevant concepts that apply to real-world company examples and justify why they are the most relevant for your companies. *(You must only pick from the list of concepts provided above).*
 - c) Compare and contrast how the two companies apply these concepts. You can select as many performance criteria as you want based on group discussion.

Stage 2 – Group Report Structure - Industry Application of the Technology (Cont.)

- Choosing two example companies from an Industry:
 - If possible, choose current examples or from the last **three years.**
 - You may use examples from your own company (if you have permission to use any material needed) where you are currently working.
 - If in doubt about whether your topic or examples are appropriate, check with the Teaching team.
 - Do not rely on a single paper that introduces two examples!
 - New examples – innovation is a fast-moving topic!
 - Do not necessarily accept all you read at face value, e.g. from self-published articles.
- Please provide the contribution table (as shown in Slide 14) for this report as well.

Summary of the structure for Reports 1 and 2

Step 1	Pick a Technology (T_1) from the provided list at Slide 21. Pick an industry (I_1) of your choice that uses that technology (T_1) and let your tutor know by Week 3.
Step 2	<p>a) Write Innovation Report 1 which will be about technology T_1 in the context of Industry I_1.</p> <p>b) Divide up the three concepts among your group members and show which member worked on which concept in a contribution table format.</p>
Step 3	<p>a) Write Innovation Report 2, which will also discuss technology T_1 in the context of Industry I_1 for various concepts.</p> <p>b) Pick two companies from Industry I_1 that are using technology T_1.</p> <p>c) Pick two Distributed Innovation concepts that are most relevant to your companies. Then, compare and contrast how they are applied in your two companies.</p>

Submissions

- The report must be submitted electronically through Canvas and in PDF format.
- It will go through Turnitin

Notes for the Report (Stages 1 and 2)

- There is no template – however, an example template is already available on Canvas or you may use a template of your choice.
- It is OK for the text to be either single-spaced or double-spaced.
- Figures (images or diagrams), tables and quotes are typically very effective in an essay.
 - When referring to figures/tables, make sure an appropriate description is given so that they are understandable – figures/tables contain a lot of information!
 - You are encouraged to create your own figures and tables. If you do, show that you created them (e.g. “created by Firstname Surname for INFO5992”)
 - Cite your figures!
 - Use Harvard or Vancouver referencing style – keep your referencing style consistent

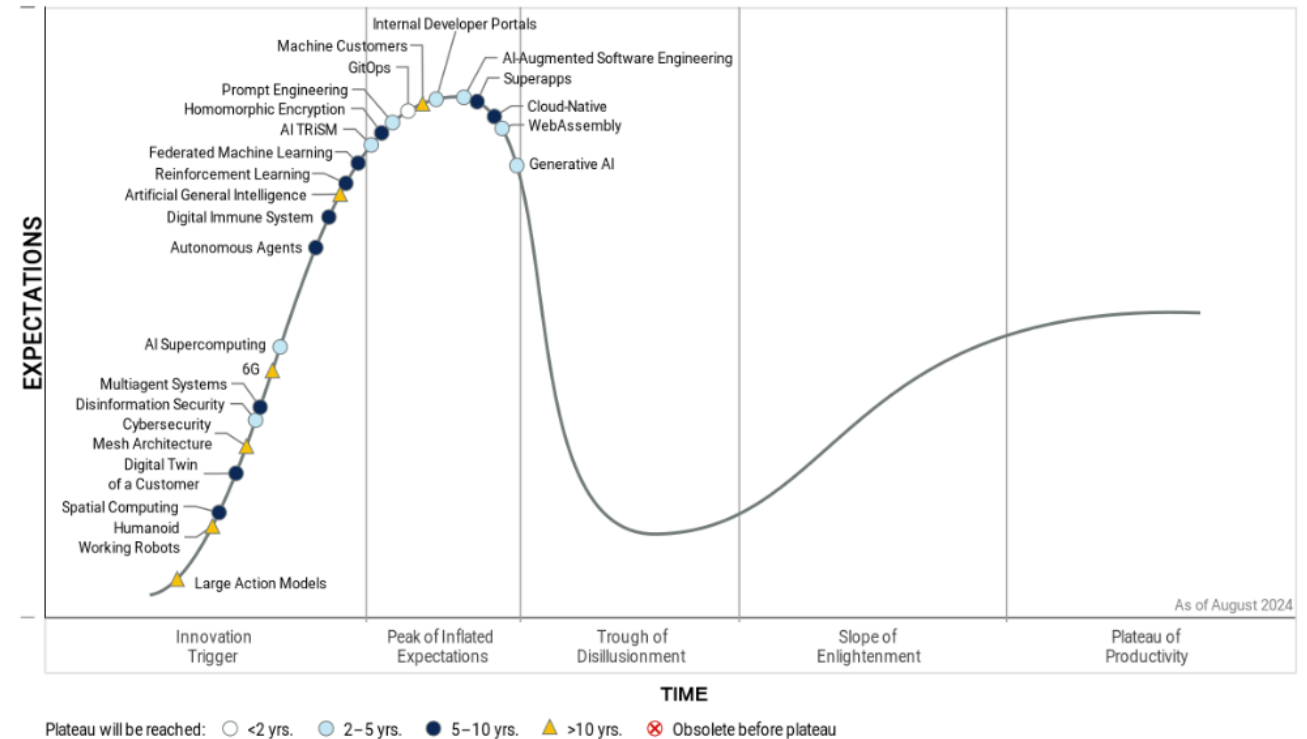
Notes for the Report (Stages 1 and 2)

- Sources:
 - Read widely; read journal articles (e.g. online through the library), online magazines and high-quality blogs.
 - Using reliable scholarly sources
 - Wikipedia is highly variable in quality, derivative and typically not a good source for your essay (except perhaps for gaining a general understanding before reading more deeply from the literature or high-quality blogs)
 - Company websites are rarely unbiased descriptions of examples (though they may provide some useful information that should be understood in its context)
 - Finding the right references (more in later slides)

Technology List

Technology selection

- Select one from the below:
- Chatbots
- Digital Humans
- Non-Fungible Token (NFT)
- Metaverse
- Open Telemetry
- Generative Design AI (is different from Generative AI)

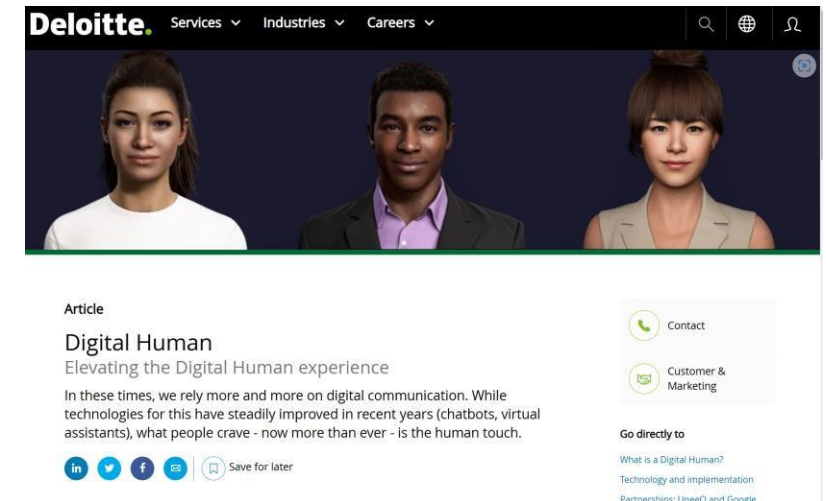


Topic 1 – Chatbots

- **Don't select ChatGPT, it's way too easy**
- A chatbot is a computer program that can interact with users via text or speech, and simulate human conversation
- Usually powered by artificial intelligence (AI) and natural language processing (NLP) technology.
- Chatbots can be used for multiple purposes e.g.,
 - <https://www.oracle.com/au/chatbots/what-is-a-chatbot/>
- There are many chatbot companies already out there

Topic 2 – Digital Humans

- Digital humans are designed to interact with humans in a way that feels natural and human- like by simulating human emotions, expressions, and movements
- Difference between Digital Humans and Chatbots can be summarized in two ways
 - In terms of their ability to understand and respond to human emotions and behaviours
 - The level of customization and branding



Non-Fungible Token (NFT)

- Unique digital assets that are verified using blockchain technology.
 - NFTs are used to represent a wide range of digital content, such as art, music, videos, and other types of creative works.
- Different than Bitcoin, which are interchangeable and have the same value. Each NFT is unique and has its own value based on factors such as the rarity, history, and perceived value of the underlying asset.
- NFTs provide a way for creators to monetize their digital content, as well as a way for collectors to invest in and own unique digital assets. However, the value of NFTs can be volatile and may be subject to fluctuations based on factors such as market demand and the perceived value of the underlying asset.
- <https://www.investopedia.com/non-fungible-tokens-nft-5115211>

#1 - CryptoPunks

Digital object: Alien

Price: 605 ETH



The most recent and fresh record of the NFT world belongs to the ultra-rare collectible Alien character from the **CryptoPunks** art platform.

Basically, this digital object doesn't have any implementation. It is perceived as a piece of art and is one of the oldest CryptoPunks world characters. At the moment, the NFT which secures the ownership of this piece of art is the most expensive token of this kind ever sold in history.

To stress the scale of the deal it's important to note that at the moment of the deal **605 ETH** was equal to **\$761,889**.

Metaverse

- The metaverse is a fully immersive and interactive environment that allows users to engage with digital content and each other in real-time.
- The metaverse can provide a new platform for social interaction, collaboration, and creativity. It can also create new opportunities for businesses to reach customers in a more engaging and personalized way.
- Challenges and ethical considerations associated with the metaverse may include issues around data privacy, ownership of digital assets, and the potential for the metaverse to exacerbate existing inequalities.
- <https://www.techtarget.com/whatis/feature/The-metaverse-explained-Everything-you-need-to-know>

History of the metaverse

The metaverse is still emerging, but the concept of a 3D immersive internet where people can socialize, play, shop and work dates back decades.



OpenTelemetry

- OpenTelemetry is an open-source observability framework that provides IT teams with a common format for collecting and sending telemetry data, such as logs, metrics, and traces.
- OpenTelemetry components, APIs, and SDKs enable teams to instrument, generate, collect, and export telemetry data for analysis to understand software performance and behavior.
- OpenTelemetry is a Cloud Native Computing Foundation (CNCF) incubating project that aims to provide unified sets of vendor-agnostic libraries and APIs.



REFERENCE ARCHITECTURE



<https://www.dynatrace.com/news/blog/what-is-opentelemetry-2/>

Generative Design AI

- Generative design is a process where a computer program generates design options based on user- specified criteria
 - AI is used to analyze and refine those options.
- Generative design can be used to optimize parts and assemblies, and it can also reduce the amount of time and resources required for product development.
- <https://www.engineering.com/story/ai-driven-generative-design-redefines-the-engineering-process>

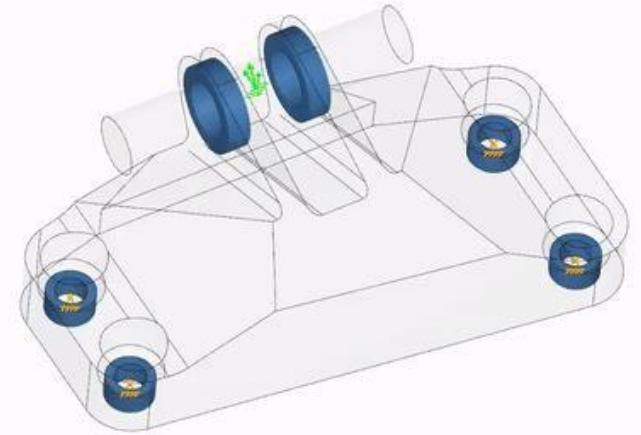


Image: This GE bracket redesign was 75 percent lighter than the original design and optimized to stay within the material yield stress using generative design.

<https://www.ptc.com/en/blogs/cad/beginner-guide-generative-design>

Innovation Report Writing Content

Stage 1 Group Report Template

- Introduction to the Technology
 - Description of the technology.
 - What it is and how it is being applied to the selected industry
 - Market trend analysis / potential impact of the technology on the selected industry.
- Innovation Concepts
 - Discuss the technology in terms of its dominant design. Pick **one product category** for the technology in your chosen industry and discuss the dominant design concept for that.
 - Discuss the concepts within the ‘Diffusion of Innovation’ e.g., Adoption rate (influencing factors), distributed innovation, etc
 - Discuss in terms of disruptive innovation concepts – does it fit to the requirements to be disruptive? What kind of disruption: Low End or New market or both or neither?

**Please review the marking rubric for “Innovation Report - Mid” on Canvas while writing your report*

Stage 1 Group Report Marking Rubrics

- [Group] Technology – 10% of UoS. Marked out of 100.
- [40% of the group assignment mark] Clear **description of the technology**, show sufficient understanding of its application and use, demonstrate knowledge of the current markets and the potential impact of the technology on the chosen market/industry.
 - Description of the technology (15%)
 - Applications of the technology (10%)
 - Current market and industry trends (10%)
 - Potential Impact (5%)

Stage 1 Group Report Marking Rubrics -- Contd.

- [Group] Technology – 10% of UoS. Marked out of 100.
- [50% of the group assignment mark] **Clear description of innovation concepts of Dominant Design, Disruptive Innovation, and Diffusion**
 - Dominant Design (15%)
 - Disruptive Innovation (20%)
 - Diffusion (15%)
- [10% of the group assignment mark] **Quality of the Report**
 - Report Structure (3%)
 - Language (2%)
 - Reference (2%)
 - Word Limit (3%)

Stage 1 Group Report Review Marking Rubrics

- [Review Stage 1] 2%
- This is your opportunity to address the feedback provided by tutors on your stage 1 report. Please address the comments by editing or adding information to your report in blue colour font. This step is necessary for the tutors to see your changes and you will not receive marks if your changes are not easily visible in the blue font.
- Your group will receive the full 2% if all the feedback from the tutors has been appropriately addressed.

Stage 2 Group Report Marking Rubrics

- [Group] Industry Application of the Technology – 15% of UoS. Marked out of 100.
 - [30% of the assignment mark] **Justification** for the **selection of the two real-world companies from the chosen industry.**
 - Introduction of the two companies and the justification for their selection (15%)
 - Explanation of the use of the technology by the two companies (15%)
 - [50% of the assignment mark] Effective **application of the two selected innovation concepts** in the discussion of the companies.
 - Relevance of Concepts for the companies(20%)
 - Discussion of Concepts for the companies (30%)
 - [20% of the assignment mark] Comparative analysis of the applications of the innovation concepts between the two companies.
 - **Quality of the Report** will be considered when marking

**Please review the marking rubric for “Innovation Report - Final” on Canvas while writing your report*

Report Marking Rubrics (Cont.)

- These aspects are considered when marking:
 - Use of suitable charts, diagrams and/or tables to aid in conveying innovation concepts or the analysis of the real-world examples.
 - Effective structure, flow and clarity of the report.
 - Use of suitable high-quality sources and appropriate quoting and referencing of these.

Stage 2 Group Report Review Marking Rubrics

- [Review Stage 1] 3%
- This is your opportunity to address the feedback provided by tutors on your stage 2 report. Please address the comments by editing or adding information to your report in blue colour font. This step is necessary for the tutors to see your changes and you will not receive marks if your changes are not easily visible in the blue font.
- Your group will receive the full 3% if all the feedback from the tutors has been appropriately addressed.

Report Marking (Cont.)

- Reports will be sorted by Topics
- Reports will be assigned to tutors to comment on.
- Lecturer will go through the reports, together with all the comments, to finalise the marks

Late assessments

- We will follow the Faculty guidelines – its always best to submit in time!
- If you have any challenges with the submission date, do get in touch with your teaching team as soon as possible.

Finding the right References

References

- Find journal articles or high-quality online sources on the topic
- News / Magazine / Editorial articles can be used to support your topic, e.g., used as an example
- Consultancy reports e.g., HBR, McKinsey are OK, especially as they introduce newer topics / examples
- If in doubt about quality of reading, please check with your teaching team
- Note: Be careful in how you treat information from companies (such as press releases, product websites, whitepapers) as they may be biased!)

References

- University Library
 - <https://library.sydney.edu.au/>
- Google Scholar
 - <https://scholar.google.com.au/>
- Google
 - Be careful of identifying reliable sources
- ! Wikipedia – perhaps only for you to read and understand

Reference Management Software

- Make maintaining references and creating bibliographies easy
 - **EndNote:**
 - Free for Uni of Sydney staff and students
 - For Windows, Mac
 - Plug-in for MS Word
 - <http://libguides.library.usyd.edu.au/endnote>
 - **Zotero:**
 - Free, open source
 - For Windows, Mac, Linux, ...
 - Plug-in for Firefox, MS Word, Open Office
 - <http://www.zotero.org>
 - Many others:
 - http://en.wikipedia.org/wiki/Comparison_of_reference_management_software

Other resources

– <https://library.sydney.edu.au/help/online-training/elearning/>

iResearch: information skills for life

iResearch Learning Objects Printable versions

- How to reference [English](#) | [Chinese](#) (PDF)
- [Search smarter, search faster](#) (PDF)
- [Find that book!](#) (PDF)
- Plagiarism and academic honesty [English](#) (html – All your own work – University site on plagiarism) | [Chinese](#) (PDF)
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- [Analysing visual resources](#) (PDF)
- [Citation chaining](#) (PDF)

Academic dishonesty and plagiarism

Academic dishonesty and plagiarism

- Please read the University policy on Academic Honesty carefully:
http://sydney.edu.au/elearning/student/EI/academic_honesty.shtml
- All cases of academic dishonesty and plagiarism will be investigated
- There is a new process and a centralized University system and database
- Three types of offenses:
 - Plagiarism – when you copy from another student, website or other source. This includes copying the whole assignment or only a part of it.
 - Academic dishonesty – when you make your work available to another student to copy (the whole assignment or a part of it). There are other examples of academic dishonesty.
 - Misconduct - when you engage another person to complete your assignment (or a part of it), for payment or not. This is a very serious matter and the Policy requires that your case is forwarded to the University Registrar for investigation.

Penalties

- The penalties are severe and include:
 - 1) a permanent record of academic dishonesty, plagiarism and misconduct in the University database and on your student file
 - 2) mark deduction, ranging from 0 for the assignment to Fail for the course
 - 3) expulsion from the University and cancelling of your student visa
- Do not confuse legitimate co-operation and cheating! You can discuss the assignment with another student, this is a legitimate collaboration, but you cannot complete the assignment together – everyone must write their own code or report, unless the assignment is group work.
- When there is copying between students, note that both students are penalised – the student who copies and the student who makes his/her work available for copying

Detection

- We will use the similarity detection software TurnItIn and MOSS to compare your assignments with these of other students (current and previous) and the Internet
 - Turnitin is for text documents: http://www.turnitin.com/en_us/higher-education
 - MOSS is for programming code: <https://theory.stanford.edu/~aiken/moss/>
- These tools are **extremely good!**
 - e.g. MOSS cannot be fooled by changing the names of the variables or changing the order of the conditions in if-else statements
- Examples of plagiarism in programming code:
 - http://www.upenn.edu/academicintegrity/ai_computercode.html

Student excuses

- All these are cases of plagiarism and academic dishonesty we have seen in our school
- The student excuses are not acceptable:
 - *I sat the test and then posted the questions and solutions to my friends whose test was later in the week. I only wanted to help them understand the concepts that are examinable.*
 - *I posted parts of my code on my web page (or the group discussion forum) because my solution was cool (or I wanted to help them). I didn't expect them to copy it.*
 - *I tried to do the assignment on my own, but I had problems with the extension part that I couldn't fix, so I submitted my core part and his extension part. I didn't cheat.*
 - *I finished my assignment, but my friend had family problems. I felt sorry for her, so I gave her my assignment as an example. She said she only wanted to have a look and promised not to copy it.*

Student excuses (2)

- *The test has finished but the tutor hasn't collected the papers yet. I showed my answer to my friend. I didn't expect him to copy it.*
- *He is my best friend. I had no choice but to let him copy my assignment.*
- *I couldn't find a partner to work in pairs, so I joined their pair as they are my friends* (when only groups of maximum of 2 students are allowed – illegitimate collaboration).

Key message

- Plagiarism and any form of academic dishonesty will be dealt with, and the penalties are severe
- We use plagiarism detection systems such as MOSS that are extremely good. If you cheat, the chances you will be caught are very high.
- If someone asks you to see or copy your assignment, or to complete the assignment instead of them, just say: *I can't do this - we can both be thrown out of the University. I will not risk my future by doing this.*

Be smart and don't risk your future by engaging in plagiarism and academic dishonesty!