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Academic malpractice course

Plagiarism, collusion,
and falsification or fabrication of results

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Aims and objectives

By the end of the course you will...

- Understand and demonstrate what constitutes as plagiarism, collusion, copying, falsification and fabrication of results.
- Be aware of best practice in order to avoid committing academic malpractice.
- Be aware of how we as a University detect academic malpractice and the consequences.

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Course content overview

- Definitions
- Plagiarism examples (self-tests)
- Collusion examples (self-tests)
- Falsification and fabrication examples (self-tests)
- Detection
- Penalties

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What is academic malpractice?

Definition:

Academic malpractice covers all kinds of academic dishonesty and is described by The University of Manchester as follows:

"Academic malpractice includes plagiarism, collusion, and falsification or fabrication of results in order to obtain undeserved benefit, and is a disciplinary offence."

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What is academic malpractice?

Why do people do it?

- People commit academic malpractice for a variety of reasons, but none can be used as an excuse. Reasons include:
- **Unaware of what plagiarism is** - Many students are genuinely unclear about the precise nature of the activity known as plagiarism, with the result that they are liable to plagiarise in their assessed work without realising that they have done so.
- **Lack of time** - Where students leave the production of work to the last minute there can be a temptation to take shortcuts, such as cutting and pasting text from websites without attribution, to compensate for the lack of preparation.
- **Improving marks** - Students who do not have confidence in their own abilities can sometimes see plagiarism as a way of improving their work and, therefore, their marks. Students who feel under pressure to achieve consistently high marks may also view plagiarism as a means to an end.

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What is academic malpractice?

Why do people do it?

- **'Irrelevant' courses** - Students who perceive that a module is not directly relevant to their eventual qualification or employment prospects could be tempted to expend as little effort as possible on assignments set for the module. In this context, plagiarism can be seen as a mechanism for producing the required work with the least effort.
- **Too much respect for printed sources** - Many students have too much respect for printed content and therefore quote large chunks verbatim. All sources of information whether printed or your own research results should be evaluated and used to help shape your own conclusions.

Compliments of the JISC Plagiarism Advisory Service for most of the above [online]. Available from: http://www.jiscpas.ac.uk/documents/tipsheetsv2/TipSheet2.pdf
[Accessed 27 August 2009]

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What is academic malpractice?

How it can be avoided?

- Quite simply, make sure you are fully aware of what constitutes academic malpractice so you know when you might be committing it and then learn how to reference other peoples work correctly.
- This short course will give you a good understanding about academic malpractice, but you should also talk to your tutor if you ever have any doubts or uncertainties about it.

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Definitions of common forms of academic malpractice

Plagiarism	To use another person's **idea** or a part of **their work** and pretend that it is your own.
Collusion	When one student produces work and allows another student to **copy** it. If both students submit the work, BOTH students will be deemed to have colluded.
Falsification of results	Falsification is the practice of **omitting** or **altering** research data in such a way that the results are no longer accurately reflected in your research record (your lab book or thesis for example).
Fabrication of results	Fabrication is the practice of **inventing** data or results and recording and/or reporting them in your research record (your lab book or thesis for example).

All of these will be covered in detail with examples shortly.

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About the academic malpractice examples

For a better understanding of what academic malpractice is and its terms, we provide you with some examples. These examples should help you understand the terms. The examples are set in a fictitious environment of an incoming Computer Science student. The examples will give you a first impression of what questions regarding academic malpractice you might encounter in your first weeks.

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Plagiarism

Plagiarism is presenting the ideas, work or words of other people without proper, clear and unambiguous acknowledgement. It also includes 'self plagiarism' * (which occurs where, for example, you submit work that you have presented for assessment on a previous occasion), and the submission of material from 'essay banks' (even if the authors of such material appear to be giving you permission to use it in this way). Obviously, the most blatant example of plagiarism would be to copy another student's work. Hence it is essential to make it clear in your work the distinction between:

- the ideas and work of other people that you may have quite legitimately used, and
- the ideas or material that you have personally contributed.

You can make this distinction by using citations and references.

* Note that in some Schools there is the special case of the Project Background Report that is treated in an appropriate way: parts the Project Background Report are expected to go into the Masters Dissertation, but they are known to have already been assessed, and thus there is no risk of self-plagiarism.

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Patchwriting

Patchwriting is a form of plagiarism that is mostly due to bad paraphrasing.

Patchwriting occurs when a written text closely resembles the structure of its original source. Oftentimes, the student rearranges some of structure of the text and uses synonyms for some of the words. However, the used vocabulary and structure still closely resembles the original text.

Patchwriting often occurs when the writer is under time pressure. The writer does not have the time or is not willing to invest the time to completely understand the content of the text.

Patchwriting is considered to be poor academic practice.

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A note about referencing

There are two main methods for making citations and organising references, namely the **Numeric** system and the **Harvard** system. Both have their advantages and disadvantages, but whichever system you choose, you should stick to it and use it consistently.

As this is a course about 'academic malpractice awareness' and not a course about 'how to cite your references', you should speak to your School or Faculty about guidelines for citing references. It is also worth noting that the John Rylands University Library has produced a general guide to citations, based on the two most commonly used styles.

In this course the Harvard system has been used in the examples, but check with your School for the preferred method of referencing and use it consistently.

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Examples (Plagiarism)

Knowing the dictionary definition of plagiarism isn't enough, in future you will have to be able to spot when your own work would be classified as plagiarism. To help you, a series of short examples are presented here. Don't worry if you get it wrong, this course is about learning to recognise when plagiarism is occurring so that you make your mistakes here and not in your own academic studies!

Alex is an MSc student studying Computer Science here at the University of Manchester. He is under time pressure because his dissertation is due tomorrow. There is still one paragraph missing for his dissertation.

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Example 1

2 Related Work and Example Domain

Logic-based representations and probabilistic graphical models have been used to control sensing, navigation and interaction for robots [Bai *et al.*, 2014; Hawes *et al.*, 2010]. Formulations based on probabilistic representations (by themselves) make it difficult to perform commonsense reasoning, whereas approaches based on logic programming tend to require considerable prior knowledge of the domain and the agent's capabilities, and make it difficult to merge new, unreliable information with an existing knowledge base. Theories of reason-

For navigation and interaction of robots, logic-based representations and probabilistic graphical models are used. The representation of knowledge, explanation generation and planning are areas of robotics and artificial intelligence that are well-researched. Commonsense reasoning is difficult because of formulations based on probabilistic representations. Furthermore, planning algorithms and logic programming require prior domain knowledge and capabilities by the agent, and make it difficult to include new, probably unreliable information with an already existing knowledge base.

The part of the paragraph above is all Alex needs to finish his dissertation.

He comes up with the paragraph below.

Do you think he commited academic malpractice?

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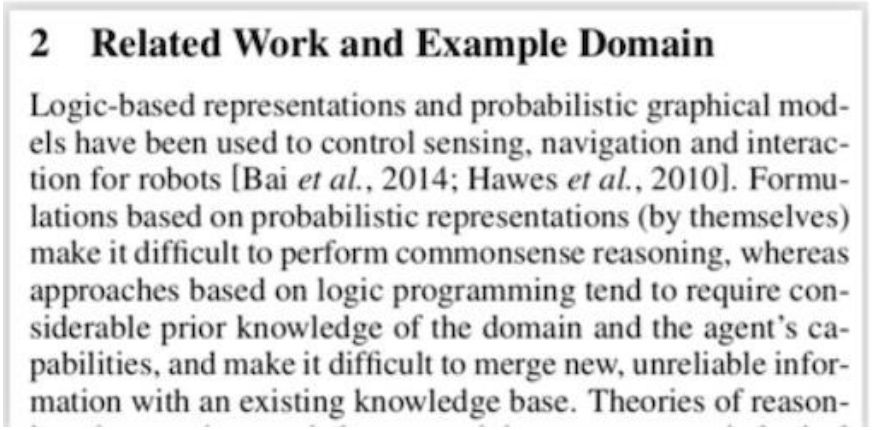
Example 1



2 Related Work and Example Domain

Logic-based representations and probabilistic graphical models have been used to control sensing, navigation and interaction for robots [Bai *et al.*, 2014; Hawes *et al.*, 2010]. Formulations based on probabilistic representations (by themselves) make it difficult to perform commonsense reasoning, whereas approaches based on logic programming tend to require considerable prior knowledge of the domain and the agent's capabilities, and make it difficult to merge new, unreliable information with an existing knowledge base. Theories of reason-

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Yes, he did!

He used someone elses work and did not even referenced it!

Furthermore, there are some direct quotes from the original text that are not correctly cited.

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Example 2

2 Related Work and Example Domain

Logic-based representations and probabilistic graphical models have been used to control sensing, navigation and interaction for robots [Bai *et al.*, 2014; Hawes *et al.*, 2010]. Formulations based on probabilistic representations (by themselves) make it difficult to perform commonsense reasoning, whereas approaches based on logic programming tend to require considerable prior knowledge of the domain and the agent's capabilities, and make it difficult to merge new, unreliable information with an existing knowledge base. Theories of reason-

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Source:

[1] PAULIUS, David; SUN, Yu. A survey of knowledge representation in service robotics. *Robotics and Autonomous Systems*, 2019, 118. Jg., S. 13-30.

Alex now cited the original text.

Do you think that Alex will receive a high mark for this?

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Example 2

2 Related Work and Example Domain

Logic-based representations and probabilistic graphical models have been used to control sensing, navigation and interaction for robots [Bai *et al.*, 2014; Hawes *et al.*, 2010]. Formulations based on probabilistic representations (by themselves) make it difficult to perform commonsense reasoning, whereas approaches based on logic programming tend to require considerable prior knowledge of the domain and the agent's capabilities, and make it difficult to merge new, unreliable information with an existing knowledge base. Theories of reason-

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Source:

[1] PAULIUS, David; SUN, Yu. A survey of knowledge representation in service robotics. *Robotics and Autonomous Systems*, 2019, 118. Jg., S. 13-30.

Probably not!

He did rearrange some of the structure of the original text.

However, his new text closely resembles the source text. He even used the same vocabulary!

This is a good example for patchwriting.

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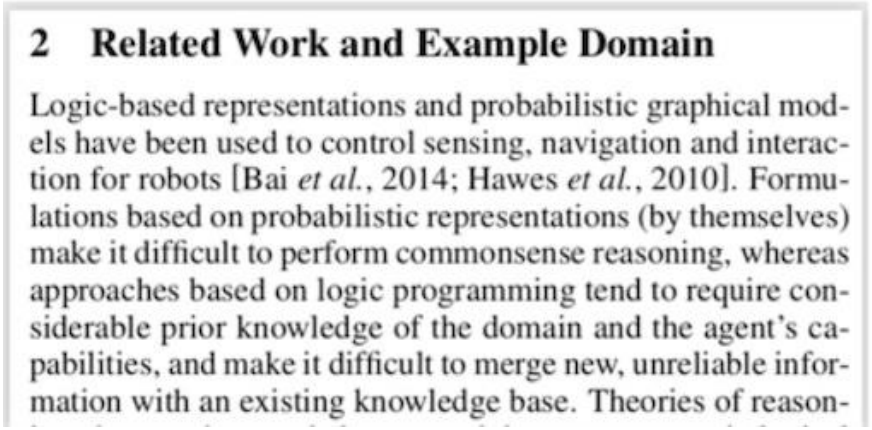
Example 3



2 Related Work and Example Domain

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Whether the approach is based on a probabilistic representation or logic programming, the Knowledge Representation needed for controlling robot interaction has many complications. Basing formulations on probabilistic representations make it harder to apply common sense reasoning. Problems also arise when using a logic programming approach, as there is no straightforward way to use this approach without good background information about the domain relevant to the interactions taking place.

Alex has rewritten his whole paragraph. Now his new text is in his own words. He also rearrange the structure of the source text to better fit to its dissertation.

Do you think that this paragraph is now perfectly fine?

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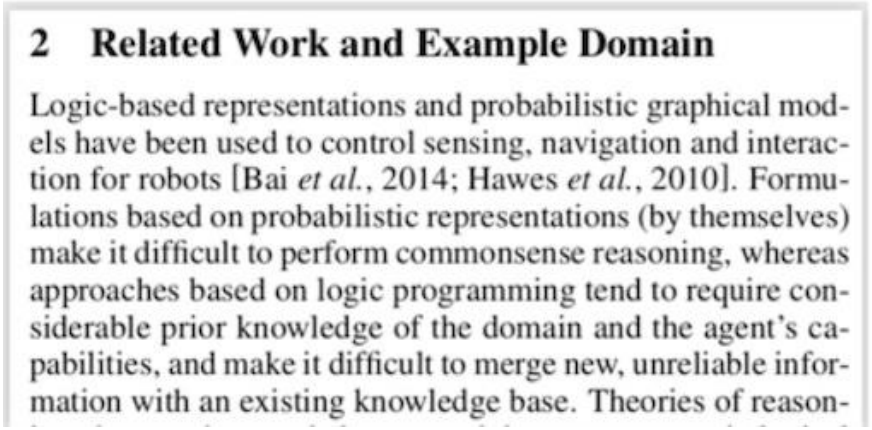
Example 3



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It is still plagiarism.

He did paraphrased the paragraph in is own words. But he forgot to reference his text properly. He is refering to ideas not made by himself but by others. So he has to reference the source he has taken the information from.

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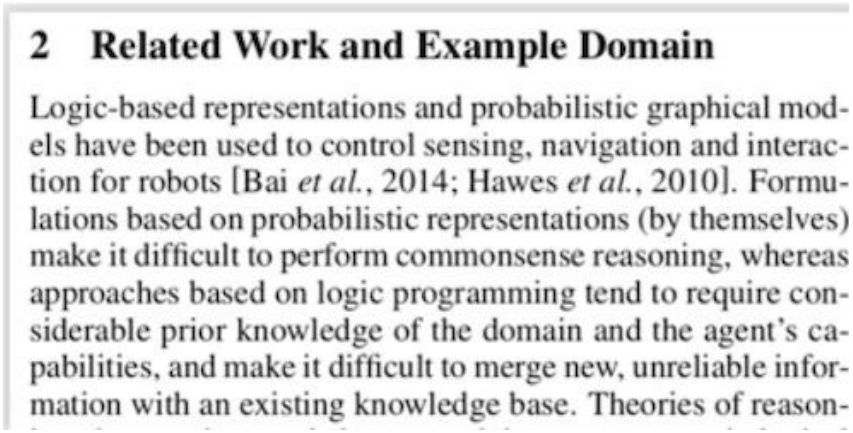
Example 4



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Please have a look at the different paragraphs on the right.

Which of these paragraphs is an **example for patchwriting**?

1	For robots or agents to be able to interact with their environment, logical reasoning is vital. However, common algorithms used in robotics that allow the agent to interact, are based on statistics and can lead to difficulties in reasoning [1]. Furthermore, it may be hard to integrate new data e.g. by sensors because of their potential unreliability that could affect the data integrity of prior knowledge required by planning and reasoning algorithms [1].
2	For navigation and interaction of robots, logic-based representations and probabilistic graphical models are used [1]. The representation of knowledge, explanation generation and planning are areas of robotics and artificial intelligence that are well-researched [1]. Commonsense reasoning is difficult because of formulations based on probabilistic representations. Furthermore, planning algorithms and logic programming require prior domain knowledge and capabilities by the agent, and make it difficult to include new, probably unreliable information with an already existing knowledge base [1].
3	Whether the approach is based on a probabilistic representation or logic programming, the Knowledge Representation needed for controlling robot interaction has many complications [1]. Basing formulations on probabilistic representations make it harder to apply common sense reasoning [1]. Problems also arise when using a logic programming approach, as there is no straightforward way to use this approach without good background information about the domain relevant to the interactions taking place [1].

Source:

[1] PAULIUS, David; SUN, Yu. A survey of knowledge representation in service robotics. *Robotics and Autonomous Systems*, 2019, 118. Jg., S. 13-30.

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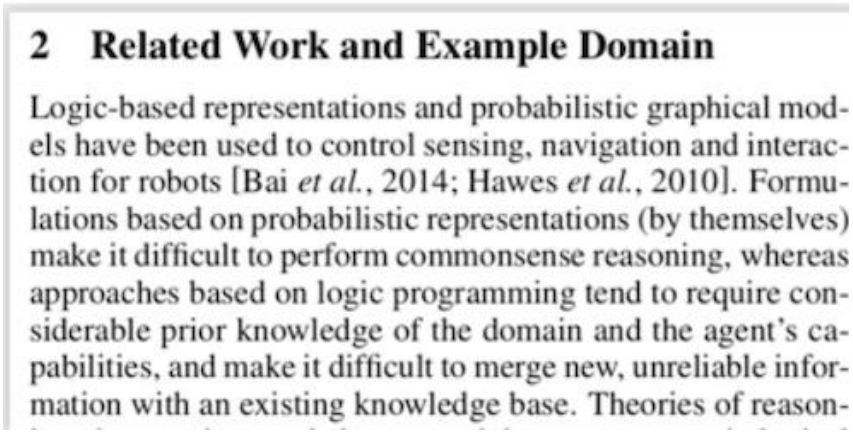
Example 4



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The **second paragraph** is an example for patchwriting!

It closely resembles the source text. It even uses the same vocabulary.

1	For robots or agents to be able to interact with their environment, logical reasoning is vital. However, common algorithms used in robotics that allow the agent to interact, are based on statistics and can lead to difficulties in reasoning [1]. Furthermore, it may be hard to integrate new data e.g. by sensors because of their potential unreliability that could affect the data integrity of prior knowledge required by planning and reasoning algorithms [1].
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Collusion

Collusion occurs when, unless with official approval (e.g. in the case of some group projects), two or more students consciously work together in the preparation and production of work which is ultimately submitted by each to be their own individual work. Similarly, it is also collusion to allow someone to copy your work and that will lay both you and the other student open to a charge of academic malpractice.

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Examples (Collusion)

As for the plagiarism part, a series of short examples for collusion are presented here.

Pari and Alex are MSc students studying Computer Science at the University of Manchester. In their first week, they are both confronted with writing essays for the first time. The essay question can be seen below:

Give an example of using reverse engineering to extract a requirement from an existing program.

You should discuss all the steps with specific details.

This is to be your own work.

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Examples 1

Pari does not know how to start with her first essay ever. The question she has to answer seems very comprehensive and confusing. Luckily, the course is having a lab session.
Since the question is so comprehensive she asks her new friend Alex if they want to split up the work. Alex thinks it is a great idea since they will both benefit from working together.

Can this be considered collusion?

Examples 1

Both Pari and Alex did **collude** on their first essay.

As stated in the essay question, they were supposed to work alone and not together as a group.

The essay was designed so that students have to think about what to write and how to write it. In most exams, students are supposed to answer short essay questions. In their final postgraduate year, students will have to write a dissertation. By splitting up, both of them prevented themselves from learning how to write these kind of academic texts.

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Examples 2

One day before the deadline, Alex has finished writing his essay. However, he is not sure whether he answered the question correctly. He had some problems with understanding the content of the lecture. He gives his essay to his friend Pari who seems to have understood the lecture better than Alex. Pari is able to give Alex some tips on what he should adjust in his essay.

Did Alex and Pari collude?

As a reminder, this is the essay question:

Give an example of using reverse engineering to extract a requirement from an existing program.

You should discuss all the steps with specific details.

This is to be your own work.

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Examples 2

Yes! Alex rewrote his essay because of the tips Pari gave him. But they were supposed to work on the essay alone. If you are in doubt about the content of a lecture, you can always ask the lecturer or a teaching assistant (TA). Furthermore, you can ask questions in a blackboard forum. The essays do not have to be perfect. You will learn more when you get tailored feedback to your own ideas than to ideas of your fellow students.

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Examples 3

Alex and Pari have difficulties understanding the essay questions. Since they both struggle they decide to discuss the question together to understand what they are supposed to write.

Did they collude this time?

As a reminder, this is the essay question:

Give an example of using reverse engineering to extract a requirement from an existing program.

You should discuss all the steps with specific details.

This is to be your own work.

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Examples 3

This can indeed lead to collusion. You are supposed to submit your own ideas. When discussing questions that you are supposed to work on alone with your fellow students, you might end up writing the same things in different words. But since the instructor and the TAs cannot assess who had which ideas, you both will fail to get a passing mark.

This does not mean that you will get zero marks each time you had the same idea as another student. The academic staff is skilled in detecting which students did collude and which just had similar ideas.

Furthermore, if you have trouble understanding a question you should always as the instructor or one of the teaching assistants. They know how much aid to give without breaking the value of the assignment.

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Falsification or Fabrication of results

Fabricated data is defined as any data presented as part of a formal assessment and which has not been obtained by legitimate means of experimentation or enquiry and/or there is insufficient evidence to support its validity. Falsification generally refers to the manipulation of research data and processes in order to reflect or prevent a certain result. This also includes "obfuscation", the omission of critical data or results, for example, only reporting positive outcomes and not adverse outcomes.

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Examples (Fabrication and Falsification of results)

As for the plagiarism and collusion part, a short example for fabrication and falsification is presented here.

Pari and Alex are MSc students studying Computer Science at the University of Manchester. In their third week, they are in a group work together. They are supposed to program an efficient way to query for data. To prove efficiency, they will have to submit statistics about the time needed for querying the data.

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Examples 1

On the last day before the assignment, Pari and Alex are still struggling to obtain the statistics. Their program is running smoothly, but they are unable to get the statistics. But they both know how the data is supposed to look like. Pari has to go home so she suggests that they write down the statistics they both know their program probably would have.

Did they commit academic malpractice? They both know that their program runs perfectly and what the statistics would look like.

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Examples 1

Yes, they did commit academic malpractice. Even when the program is running correctly, you should never come up with or fake data. Even when you know what the data most probably would look like it is a severe violation of good academic practice and will result in severe punishment.

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Examples 2

Pari and Alex have finally been able to obtain the statistics they need for their assignment. But the results turn out to be not exactly what they expected. Their algorithm performs very good but is just a few milliseconds to slow. They both want to receive a high mark so they decide to change the results by just a few milliseconds.

Does this count as academic malpractice!

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Examples 2

Yes, they did commit academic malpractice.

They faked the results they obtained to get a better mark. Even when it is just slightly adjusted it does count as falsification of results and is severe misconduct. You should always report the correct results and make sure that they are replicable.

Falsification of results can have serious consequences depending on the context. You should always avoid the fabrication and falsification of data.

You can achieve a high mark by explaining why you were not able to obtain the data you were hoping for. Discovering problems that could have influenced the results might be even more interesting than just obtaining the data you planned to have.

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Some best practices (optional)

You probably have gotten a lot of **Don’t**s
i.e., **Don't collude!**, **Don't plagiarise!**

And some **Do**s that feel a bit like **Don’t**s
e.g., Cite your sources (so you **don't** plagiarise)!

That's a lot about what *not* to do.

So we want to give you some *positive* tips. Instead of focusing on what *not* to do, we are focusing on what *to do*. These are generally known as *best practices*.

One thing to remember about best practices: They don't guarantee success! Even at avoiding malpractice! You still need the **don't**s and to check your work. Best practices still can be done poorly. You need to practice them!

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Some best practices (optional)

A key reason for writing is to improve our understanding.

This is what most of your coursework is trying to do.

Even if you get marks for it, the assignments are intended to be *formative*. That is, they aim to help you improve your mastery of the material.

We can contrast that with exam situations, which are *summative*. That is, the aim to measure your mastery of the material. Getting things wrong on coursework can be a good thing...*if* you can use your mistakes to improve.

This is one reason that plagiarism, in addition to being wrong, is also counterproductive. You don't learn how to write an essay or much about a topic by merely copying someone else.

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Some best practices (optional)

In your coursework, the exams or your dissertation you will have to write some academic texts.

To write these text, merely copy and paste won't get you a passing grade. You should use the coursework to establish your way of tackling these tasks.
A good way of writing an academic text citing from sources is a structural approach. An approach *could* look like this:

First, try to understand the topic of your task. Then read the information you have several times and try to understand the given information.
When you do not understand something, look for an answer in the slides, the literature or online. If you can't find anything or you are still struggling to understand you can always ask a TA.
You can always post a question on blackboard as well. Here, your fellow students and staff will see your question and will try to answer it.

For your dissertation, you can always ask your supervisor. He will guide you to the relevant resources.

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Some best practices (optional)

After having read and understood the text, give yourself a short break. Let the information sink in. Write down in your own words what you have understood. Check with the source text to see if they resemble each other. For resembling paragraphs try to formulate the paragraphs in your own words. Often, your structure will differ from the structure in the source text because of the question you were given to answer.

And remember, **never forget to reference your sources**!

After you wrote your text leave it for some time. Come back after a while and reread your essay. You may rewrite some parts that seem unclear or misleading.

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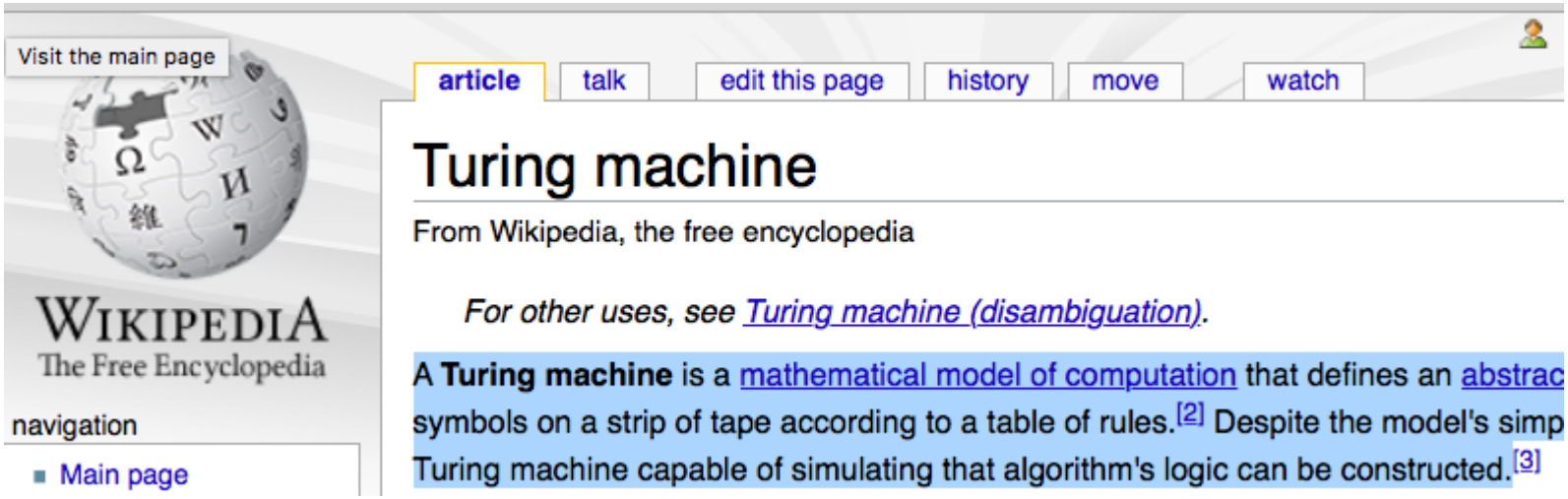
Example (Best practices) (optional)

Let's consider a simple example of answering a short essay question:

What is a Turing Machine?

The essence of this question can be phrased in many ways. But as it's written, it looks like a simple recall or research question. We could answer it from Wikipedia!



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Example (Best practices) (optional)

Indeed, it seems like the first paragraph does the job! We could cut and paste it and have an answer!

A Turing machine is a mathematical model of computation that defines an abstract machine, which manipulates symbols on a strip of tape according to a table of rules. Despite the model's simplicity, given any computer algorithm, a Turing machine capable of simulating that algorithm's logic can be constructed.

BUT: This answer has multiple problems. Let us first tackle the citation problem.

Note that the problem here isn't claiming credit for the *idea*, since that's common knowledge, but for the text. We in no way wrote those words! But a simple fix gets us out of that problem:

Quote and reference!

"A Turing machine is a mathematical model of computation that defines an abstract machine, which manipulates symbols on a strip of tape according to a table of rules. Despite the model's simplicity, given any computer algorithm, a Turing machine capable of simulating that algorithm's logic can be constructed."
--From https://en.wikipedia.org/wiki/Turing_machine

We've managed to avoid sanctionable academic malpractice, but we're unlikely to get a good grade and we probably haven't learned much.

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Example (Best practices) (optional)

A major issue with this answer, both from the perspective of your learning and of assessing your learning is that you didn't do much!

If this was a formative question, the goal wasn't for you to search and retrieve a paragraph. We're not testing your googling skills!

Typically, we want you to *learn something* about Turing Machines.

Think what happens when you cut and paste an answer. You may read the paragraph, but you don't need to fully understand it to *recognise* that it's a plausible answer.

Indeed, the content of the paragraph doesn't spend much time *in your head*. You spend more time getting the citation right than you do on Turing Machines!

MANCHESTER 1824
The University of Manchester

Example (Best practices) (optional)

When you cut and paste, you can spend almost no time at all thinking about the content. Even mere retyping has a better chance of getting some of the content into your head. Of course, you can always try modifying the result of a cut and paste or retyping. We can try to modify our quote into a paraphrase. We remove the quotes and identify some words to change.

A Turing machine is a mathematical model of computation that defines an abstract machine, which manipulates symbols on a strip of tape according to a table of rules. Despite the model's simplicity, given any computer algorithm, a Turing machine capable of simulating that algorithm's logic can be constructed.
--- From https://en.wikipedia.org/wiki/Turing_machine

Now we can replace or rewrite the identified bits.

A Turing machine is a conceptual model of computation that defines an abstract system, which manipulates symbols on a strip of paper according to a set of rules. Despite this minimalism, given any computer program, we can design a Turing machine which can execute that program.
--- From https://en.wikipedia.org/wiki/Turing_machine

This does give us an answer different from the original text!

Penalties

Academic malpractice is taken very seriously within the University and the penalties reflect this for any student who is found guilty. In many cases the student concerned is given a date to attend a form of tribunal within Faculty (the administrative body that your School belongs to). At this tribunal the case of academic malpractice is discussed and the student is given the opportunity to defend themselves. If the student is found guilty, the tribunal panel apply an appropriate penalty. The list of possible penalties include

- recorded mark of zero for the **assessed work** in which malpractice occurred;
- recorded mark of zero for the **course unit(s)** in which the malpractice occurred;
- recorded mark of zero for **all** examination papers and other assessed work taken during the particular examination period in which malpractice occurred;
- **reduced class of degree** by one or more classes from that which would have been awarded based on the students academic progress or to award a **lesser qualification**;
- **expulsion** from the University.

Case studies

In previous cases of academic malpractice, penalties applied to real students found guilty include the following.

- Four undergraduate students **colluded** over a piece of assessed lab work. A formal warning was given, plus zero marks awarded for the assessed work and a 50% reduction in marks given for the remainder of the assessed work in the unit.
- A final year undergraduate **copied** a piece of coursework from a student of the previous year. They were expelled as this was a second offence.
- A final year student **plagiarised** a major part of a piece of coursework from the internet. Zero marks were awarded and they were not allowed to resubmit. Ordinary degree achieved.
- A postgraduate **plagiarised** a chapter of their MSc dissertation. No resubmission permitted. Lesser award of Postgraduate Certificate awarded.
- A postgraduate **plagiarised** parts of their PhD thesis including sections of papers of which they were co-author, without making the co-authorship clear. Formal warning given and they had to re-submit a fully revised thesis after taking study skills advice from school.