LITERATURE REVIEW

A literature review in academic research is a comprehensive summary and critical analysis of the existing research and literature on a particular topic.

It serves several important purposes in the context of academic research:

Contextualizing the Research:
It provides a background for the current study, showing how it fits into the broader field of study and what has already been explored.

Identifying Gaps:
By reviewing existing literature, researchers can identify gaps in the current knowledge or areas that have not been thoroughly investigated. This helps to justify the need for the new research.

Building on Previous Work:
A literature review shows how the current research builds on or deviates from previous studies. It situates the new work within the continuum of research on the topic.

Avoiding Duplication:
It helps ensure that the research does not unnecessarily duplicate existing studies, saving time and resources.

Providing a Theoretical Framework:
The review can help to establish the theoretical foundation of the research, providing key concepts, definitions, and theories that will guide the study.

Demonstrating Understanding:
It demonstrates the researcher's knowledge and understanding of the topic and the field, showcasing their capability to critically evaluate and synthesize the existing body of work.

Methodological Insights:

Reviewing the literature can provide insights into the methodologies that have been used in previous studies, which can inform the design of the new research.

COMPONENTS OF A LITERATURE REVIEW

Introduction:
An overview of the topic, explaining its significance and setting the stage for the review.

Main Body:
This section can be organized in various ways, such as thematically, chronologically, or methodologically. It involves summarizing and synthesizing the existing research, highlighting key findings, methodologies, and theoretical approaches.

Critical Analysis:
An evaluation of the strengths and weaknesses of the existing studies, discussing the reliability, validity, and relevance of the findings.

Conclusion:
A summary of the key points derived from the literature review, identifying gaps, and suggesting how the current research will address these gaps or contribute to the field.

References:
A comprehensive list of all sources cited in the review, formatted according to the required citation style.

STEPS TO CONDUCT A LITERATURE REVIEW

Define the Scope:
Clearly define the topic and the scope of the review, including the research questions and objectives.

Search for Literature:
Use academic databases, libraries, and other resources to find relevant books, articles, and other scholarly works.

Evaluate Sources:
Critically evaluate the sources for relevance, credibility, and quality.

Organize the Literature:
Group the literature based on themes, trends, methodologies, or other relevant criteria.

Synthesize the Information:
Summarize and synthesize the information from the sources, identifying patterns, contradictions, and gaps.

Write the Review:
Draft the literature review, ensuring a logical flow of ideas and coherence in presenting the findings and analysis.

Revise and Edit:
Review and revise the draft for clarity, coherence, and academic rigor. Ensure proper citation and referencing.

By following these steps, researchers can create a thorough and well-structured literature review that effectively supports their research objectives.

BUILD YOUR OWN DATABASE

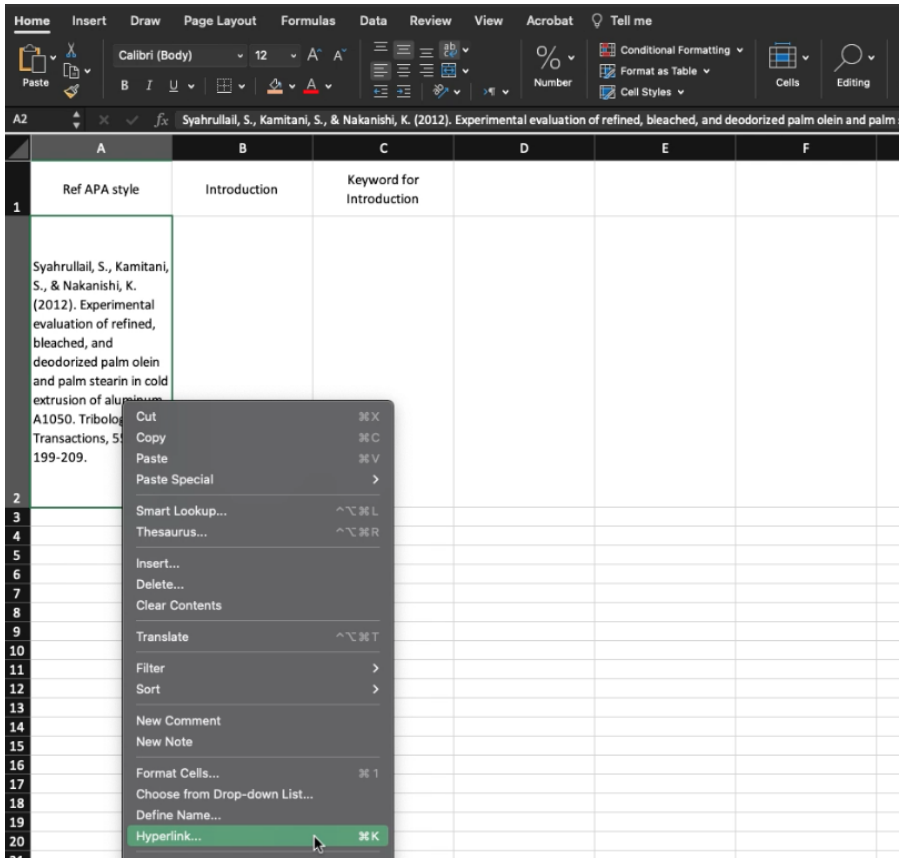
Students will download and read many journal papers. Like it or not, students are forced to make notes about the contents of the journal paper.

Here we suggest that students build a simple database regarding the journal paper that has been downloaded. This step only requires MS Excel.

Open your MS Excel and build some columns. the leftmost one, write "Ref APA style". In this column, students need to enter the first reference you read in APA style reference writing.

This will make it easier for students to include the reference in the thesis or journal paper.

Then, right click on the reference (cell A2) and select the "Hyperlink" menu.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A2
Syahrullail, S., Kamitani, S., & Nakanishi, K. (2012). Experimental evaluation of refined, bleached, and deodorized palm olein and palm
A
B
C
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E
F
Ref APA style
Introduction
Keyword for Introduction
Syahrullail, S., Kamitani, S., & Nakanishi, K. (2012). Experimental evaluation of refined, bleached, and deodorized palm olein and palm stearin in cold extrusion of aluminum A1050. Tribolog
Transactions, 5
199-209.
Cut
Copy
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Delete...
Clear Contents
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New Comment
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Format Cells...
Choose from Drop-down List...
Define Name...
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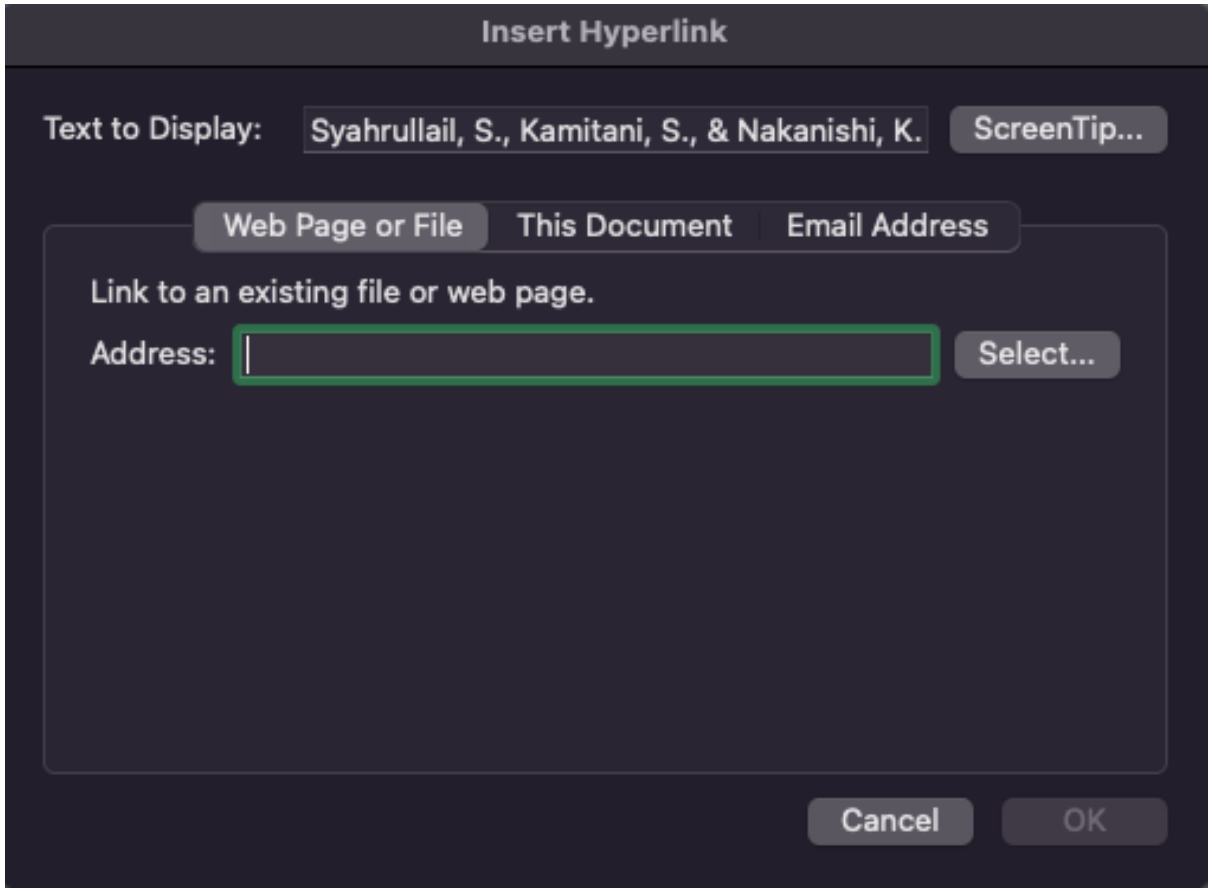
Next, link the reference (cell A2) with the pdf file of the journal paper. Please make sure you save the pdf journal file in one folder.

After completing the process of creating a hyperlink, every time you want to read the journal paper, you only need to open your excel and click on the reference.

Keep repeating this step for the next reference. Through this method, you have built your own database. You can divide it into several parts according to the theme or title of the literature you are creating.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Text to Display:
Syahrullail, S., Kamitani, S., & Nakanishi, K.
ScreenTip...
Web Page or File
This Document
Email Address
Link to an existing file or web page.
Address:
Select...
Cancel
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WRITE DOWN ALL YOUR READING INFORMATION

We read journals to get information related to our study. We need to make a note of that.

We may be able to use pen and paper to make the first notes, but it is better if we can organize the information very well.

One of the ways that can be used is to write what is read in the excel that we have created earlier.

For example, in the second column (column B), we write "Introduction" because in this column we will enter all the information obtained from our reading in the "Introduction" section of the first journal paper.

As explained in the previous session, most journal papers have an "Introduction" section.

Then, in the third column (column C), we put a keyword that is the conclusion to what we wrote in column B earlier.

Do not write many keywords, only one is sufficient. This is because, we will use the "filter" function for this column.

A lot of keywords will complicate the filter process.

If there is a lot of information and keywords, you can add a column for keywords.

This is because, if we don't do that, during the filter process, the reference order will be messed up.

However, students can use their own creativity in preparing this database.

	A	B	C	D
1	Ref APA style	Introduction	Keyword for Introduction	Keyword for Introduction
2	Syahrullail, S., Kamitani, S., & Nakanishi, K. (2012). Experimental evaluation of refined, bleached, and deodorized palm olein and palm stearin in cold extrusion of aluminum A1050. Tribology Transactions, 55(2), 199-209.	Studies to produce environmentally friendly lubricants are being carried out vigorously all over the world. Palm oil is a good source for Malaysia. In the manufacturing process (extrusion), the oil will be released into the environment because we can recycle the lubricant through extrusion. Vegetable oil including palm oil is able to stick strongly to solid surfaces. This will produce a film lubricant that can reduce metal to metal contact. This property is very good and useful for the extrusion process because it can ensure that the surface of the product is not damaged.	Bio-lubricant	Film thickness
3				

This database continues with the methodology column. Students need to read in the methodology section and write the main information, then write keywords for the methodology paper.

Most students often divide into two main themes namely experimental and simulation.

It's a good idea.

	A	E	F
1	Ref APA style	Methodology	Keyword for Methodology
2	Syahrullail, S., Kamitani, S., & Nakanishi, K. (2012). Experimental evaluation of refined, bleached, and deodorized palm olein and palm stearin in cold extrusion of aluminum A1050. Tribology Transactions, 55(2), 199-209.	Test using a hydraulic press machine. Billet from A1050. Tools from SKD 11. Oil weighed, 0.1mg to 15mg. The data recorded is displacement and load.	Experiment
3			

Next, students can make additional information about the result and discussion. Here, it is recommended to create many columns. Each result is written in one column.

This is to make it easier for you to understand the paper you are reading. It is important for students to include the reason, mechanism or reason why a certain decision happened.

Because when we write a thesis or journal paper, we need to write the matter.

Therefore, when we do a literature review, we need to get as much information as possible regarding the reason why a phenomenon occurs. Then we adjust the reason with the results we get.

	A	G	H	I	J	K	L
1	Ref APA style	Result and Discussion	Keyword for Result and Discussion	Result and Discussion	Keyword for Result and Discussion	Result and Discussion	Keyword for Result and Discussion
2	Syahrullail, S., Kamitani, S., & Nakanishi, K. (2012). Experimental evaluation of refined, bleached, and deodorized palm olein and palm stearin in cold extrusion of aluminum A1050. Tribology Transactions, 55(2), 199-209.	Load increases and will reach steady state condition. Load for palm oil is lower. This is due to the content of palm fatty acid in plant oil (palm oil) which forms a thin film on the surface of the tool and billet. The load difference between mineral oil and palm oil is 7.7%.	Load	Surface roughness is measured in the area in contact with the tools. Surface roughness for palm oil is smaller. This shows that the film thickness is thin. Surface roughness produced by palm oil is more even than mineral oil.	Surface roughness	Observation of the surface condition of the billet shows that the surface has no deep valleys. No severe wear effect.	CCD observation
3							

When you enter information from your second journal, for the result and discussion section, you are encouraged to put the same or almost the same result in the same column as the previous journal paper.

If there are different results, you are encouraged to create a new column. This will make it easier for you to see the research gap in the future.

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1	Ref APA style	Introduction	Keyword for Introduction	Keyword for Introduction	Methodology	Keyword for Methodology
2	Syahrullail, S., Kamitani, S., & Nakanishi, K. (2012). Experimental evaluation of refined, bleached, and deodorized palm olein and palm stearin in cold extrusion of aluminum A1050. Tribology Transactions, 55(2), 199-209.	Studies to produce environmentally friendly lubricants are being carried out vigorously all over the world. Palm oil is a good source for Malaysia. In the manufacturing process (extrusion), the oil will be released into the environment because we can recycle the lubricant through extrusion. Vegetable oil including palm oil is able to stick strongly to solid surfaces. This will produce a film lubricant that can reduce metal to metal contact. This property is very good and useful for the extrusion process because it can ensure that the surface of the product is not damaged.	Bio-lubricant	Film thickness	Test using a hydraulic press machine. Billet from A1050. Tools from SKD 11. Oil weighed, 0.1mg to 15mg. The data recorded is displacement and load.	Experiment
3	Gao, T., Li, C., Zhang, Y., Yang, M., Jia, D., Jin, T., ... & Li, R. (2019). Dispersing mechanism and tribological performance of vegetable oil-based CNT nanofluids with different surfactants. Tribology International, 131, 51-63.	Solid nanoparticles are added to base oil to prepare nanofluids, which can solve the technological bottleneck of poor heat exchange performance in the traditional MQL grinding by exploiting the excellent heat transfer enhancement of nanoparticles. Vegetable oil is a nontoxic, biodegradable, and environment-friendly renewable resource. This resource has low or zero damage to the environment and operators and has an excellent lubrication performance.	Bio-lubricant	Nanoparticle	Frictional tests under different lubricants were performed using a ball-on-disc rotation sliding tribotester (UMT-3 Instruments). Friction coefficient was recorded in a computer connected to the testing platform automatically. The experimental apparatus and principle are presented in Fig. 5. To conform to the grinding conditions, a white alundum ball and a stainless steel disc were selected to be the friction pair in the experiment.	Experiment

	Ref APA style	Result and Discussion	Keyword for Result and Discussion	Result and Discussion	Keyword for Result and Discussion	Result and Discussion	Keyword for Result and Discussion	Result and Discussion	Keyword for Result and Discussion	Result and Discussion	Keyword for Result and Discussion
1											
2	Syahrullail, S., Kamitani, S., & Nakanishi, K. (2012). Experimental evaluation of refined, bleached, and deodorized palm olein and palm stearin in cold extrusion of aluminum A1050. Tribology Transactions, 55(2), 199-209.	Load increases and will reach steady state condition. Load for palm oil is lower. This is due to the content of palm fatty acid in plant oil (palm oil) which forms a thin film on the surface of the tool and billet. The load difference between mineral oil and palm oil is 7.7%.	Load	Surface roughness is measured in the area in contact with the tools. Surface roughness for palm oil is smaller. This shows that the film thickness is thin. Surface roughness produced by palm oil is more even than mineral oil.	Surface roughness	Observation of the surface condition of the billet shows that the surface has no deep valleys. No severe wear effect.	Observation				
3	Gao, T., Li, C., Zhang, Y., Yang, M., Jia, D., Jin, T., ... & Li, R. (2019). Dispersing mechanism and tribological performance of vegetable oil-based CNT nanofluids with different surfactants. Tribology International, 131, 51-63.			The minimum roughness value was achieved by CNT nanofluids with APE-10; therefore, they achieved the optimal lubrication and tribological properties. Scratches were only one part of the discsampling section for roughness measurement, and the roughness value could not comprehensively reflect the surface quality and lubrication performance of nanofluids.	Surface roughness	Disc surface was observed by SEM to disclose the lubrication mechanism of different CNT nanofluids. The SEM morphologies under six types of CNT nanofluids are depicted	Observation	The CNT nanofluids with CTAB began to develop a flocculent CNT aggregation system in the upper part and abundant CNT aggregation settlement in the lower part. After 5 h of being static, the CNT nanofluids with SDS, SDBS, and CTAB continued to aggregate and deposit, and the layering phenomenon intensified.	Stability	An oil membrane with sufficient thickness was difficult to form on the high-temperature friction surface when the lubricating fluid had low viscosity. The oil membrane had the low bearing capacity and was easily damaged under loads. The lubrication in the friction pair was inadequate, and the friction coefficient increased accordingly.	Friction

The information entered in excel is the essence of your reading. You are encouraged to write the information yourself.

Copy & paste the journal paper sentence does not help you understand the information in the journal paper.

The information can be written in English or Malay or any language you can easily understand.

Please read other journals and add your reading information in the excel.

Over time it will become a mini database for your literature.

In the next session, we will use this Excel database to write a literature review.