



PRODUCT  
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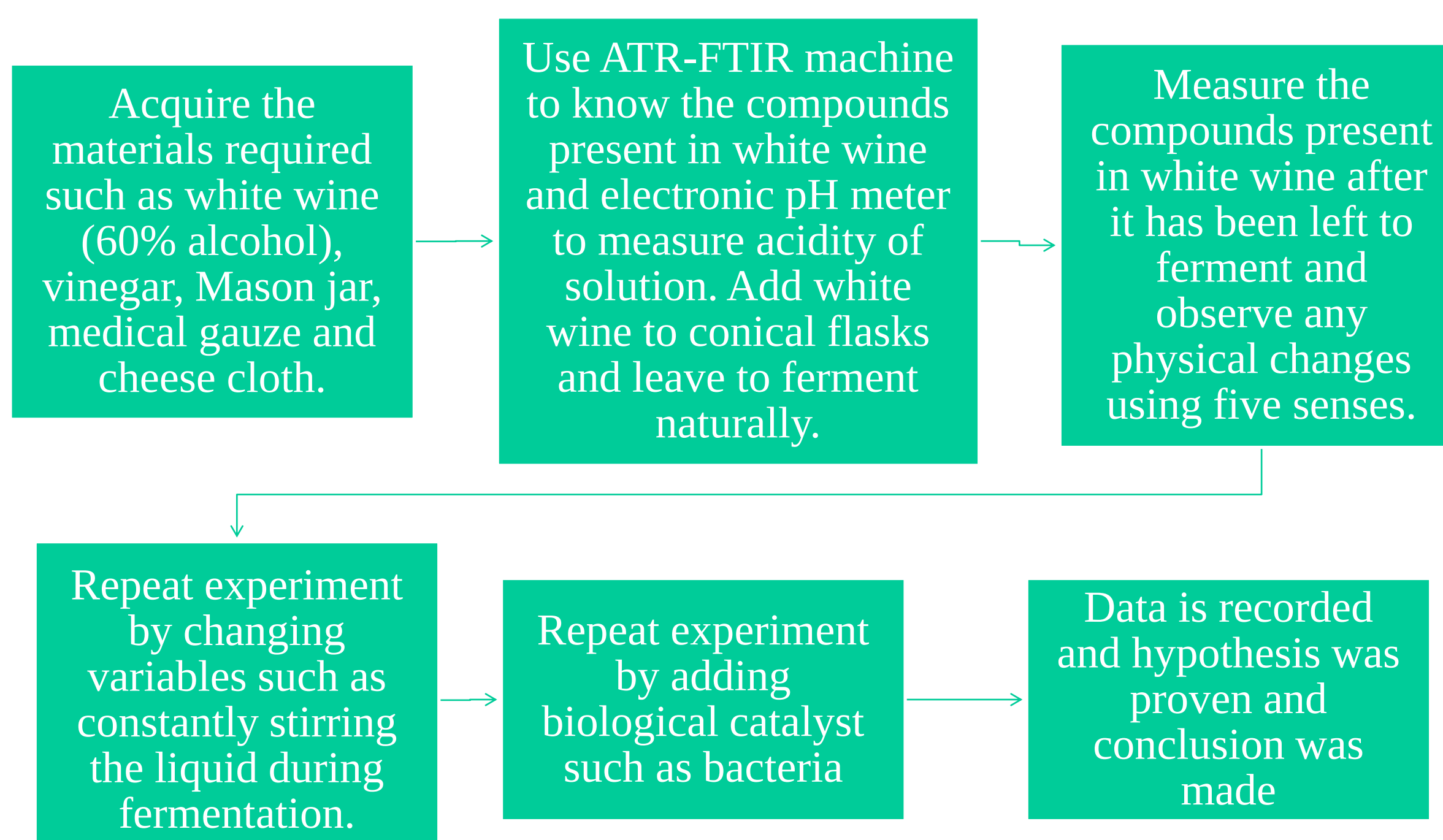
## ABSTRACT

This research touches on the field of istihalah, the process of conversion from something haram to halal. As Muslims, situations of halal and haram in this era of globalisation is constantly of high concern especially when in non-Muslim countries. For example, a culinary arts student who is unable to produce foods that require wine such as sushi. With the istihalah method, our product would be the solution, which changes the wine to vinegar, while maintaining the taste. One of our main objectives is to widen this field with the help of science and technology ergo, since there hasn't been much previous findings regarding this topic, our product would be the very first product to fully remove a haram substance from a compound, thoroughly changing something haram to halal, thus, produce vinegar from white wine through the natural process, oxidation, all while applying the concept istihalah. Muslims, especially in non-muslim countries, would no longer have issues regarding the problem stated and reduce time and money in solving it. In regards to commercial value, we believe that this would help in the culinary industry. Regarding this as scientific research, we conducted experiments to make sure our hypothesis is correct, accepted and relevant as well as to test out its abilities. With visits to 'Pejabat Mufti Wilayah Persekutuan', we were able to categorize our product as istihalah sahlah. Collaboration with Universiti Sains Islam Malaysia (USIM) along with fellow researchers has been done to fulfil apparatus requirements needed for this experiment such as the FTIR Machine, an electronic pH meter, and an electronic shaker. With every experiment conducted, data and relevant information is collected.

## INTRODUCTION

The phrase "istihalah" is a method of changing a non-halal substance to a halal substance through various natural processes. In this project, we focus on the conversion of white wine (non-halal) to vinegar (halal). The seemingly erroneous conversion has been accepted by major Sunni maddhabs such as Malik and Hanafi. The objective of this research is to widen the field of istihalah as it has a lot potential to solve modern problems. By innovating this field of istihalah, it can also open the eyes of society of how significant it can be. The field of istihalah is a solution that will be much needed by Muslims in the near future.

## METHODOLOGY



## PRODUCT DESCRIPTION/ INNOVATION IN BRIEF

This research and product is centered around the field of istihalah, the muslim food industry, and culinary arts. Our product is a natural fermentation catalyst that is able to change white wine into vinegar all while preserving the original flavour. Therefore, it can be used in the muslim culinary arts industry in producing food that requires the taste of alcohol, but has been changed into vinegar which is halal. An example of this is sushi, where Muslim culinary students in Japan face an issue in which they struggle to produce authentic Japanese sushi which requires wine as one of its main ingredients, but the students are religiously restricted to not consume alcohol.

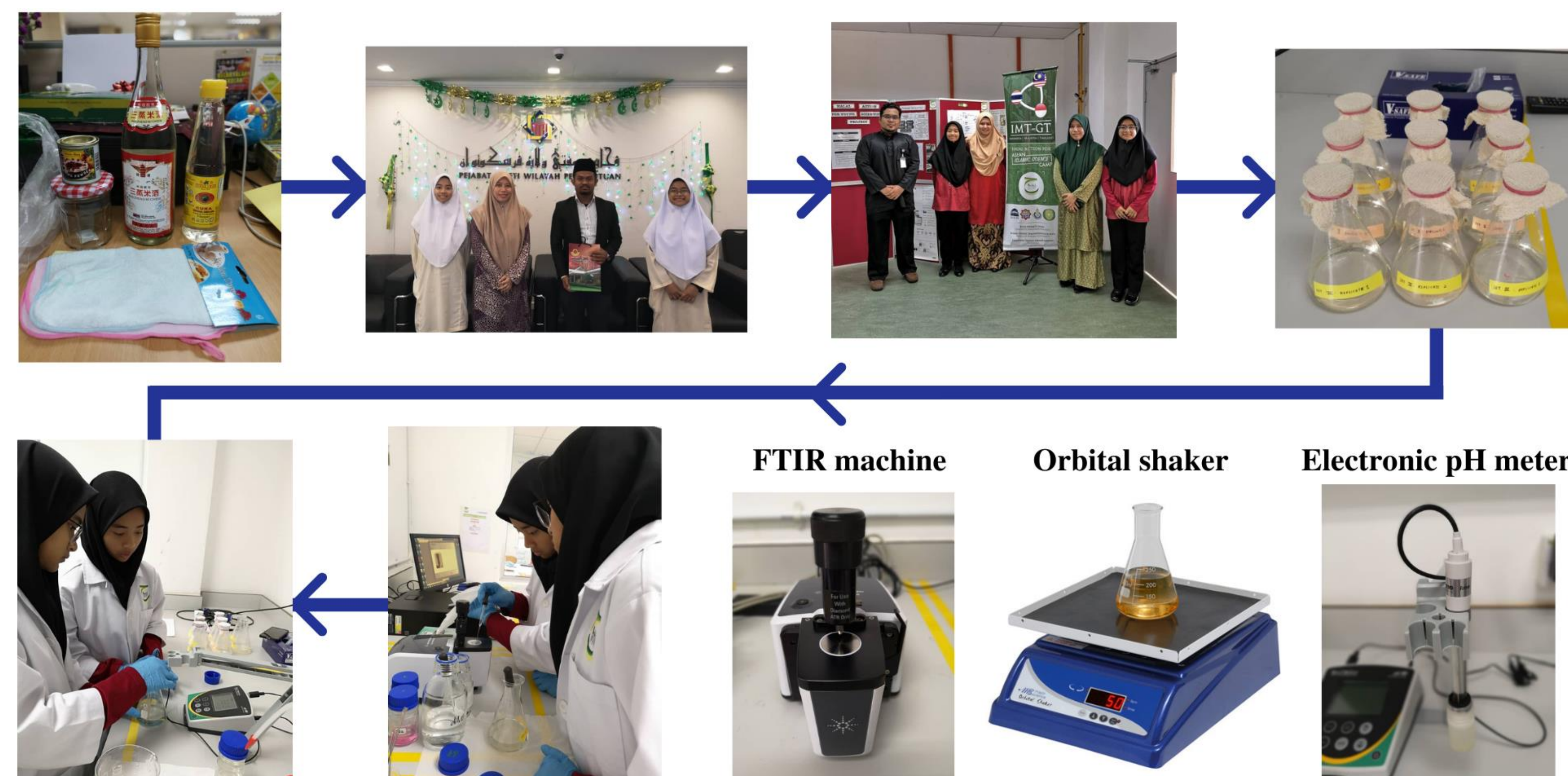
In the natural process of fermentation, alcohol is converted to vinegar by oxidation. Typically, this process takes an average of up to 29 days with variable factors such as temperature and motion, playing a significant role too. This can be seen in the FTIR machine graph of results provided.

The catalyst is made up of harmless bacteria, supplied with nutrients, which will play the role as the oxidising agent. The average rate of reaction will be faster on account of the presence of the bacteria and the total time taken for the reaction to finish and complete oxidation to occur will decrease from days to a few hours only.

The product, which comes in the form of small compact pill capsules, can be used by simply placing it in a certain amount of wine and wait until the reaction stops producing effervescence, indicating that the reaction had ended, and the wine has been completely oxidised

This project will still require a lot of improvements and research in the foreseeable future to reach its peak potential as a commercial product.

## METHODOLOGY



## SHARIAH COMPLIANCES

Istihalah in artificially fermenting wine into vinegar is accepted by Mazhab Maliki and Mazhab Hanafi  
Sources; Pejabat Mufti Wilayah Persekutuan & Universiti Sains Islam Malaysia (USIM)

"LEADING INNOVATION"

## SIGNIFICANCES

1. Istihalah would be a better alternative for Muslims during emergencies where they are placed in a situation where the only consumable liquid is white wine, which is haram
2. Istihalah would be used internationally especially for Muslims in non-Muslims countries.
3. This product could be used in the culinary industry by Muslim chefs who aren't able to produce most foods that require wine such as sushi

## NOVELTY/ ORIGINALITY

The first product to fully convert white wine into vinegar through a natural process and with the help of science and technology.

The first innovation on istihalah in a long time which would be conducted by secondary school students as it has never been done before.

## AWARDS :: PUBLICATION :: PATTERNS

1. Ihtifal MRSM Semalaysia 2019: Inovasi Muslim (Terengganu)
2. Pesta SEM Type III 2019 (MRSM Kuala Klawang)
3. Selangor R&D and Innovation Expo: Pitching Competition 2019 (Selangor)
4. Bronze Award; Creations De UiTM 2020 (UiTM Dengkil)

