

**Kulliyyah of Information and Communications Technology**

**Course:**

# CSC 3303 BIG DATA ANALYTICS

## Project Proposal

**krusty krab and big data**

For BIG DATA ANALYTICS Project

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| Name | Matric No |
| Abdirahman Abdullahi | 1432401 |
| Asem Hamood Al-Abdali | 1513599 |
| Mohamed Alrefaei | 1617111 |
| MHD Khaled Maen | 1523591 |

LECTURER'S NAME: Dr. RAINI BINTI HASSAN

**Introduction**   
 Restaurants are on the top of business ideas it falls into the hospitality business category, a restaurant business plan varies from person to person and different types of restaurant are always competing despite what kind of food the restaurant offers but not all the restaurant succeed especially in their first year. A research group in Dallas city (which consider one of the hottest restaurant marketplaces) determine the rate of startup restaurant first-year failure which is a 23%" failure rate at their first year.  
Some of the reasons that the restaurant fails is hard competition especially if the location of the new restaurant is loaded with a good restaurant reputation and the lack of a new idea. A good pre-planning strategy and some data and financial analysis help to improve the chances of success.  
In our project we try to understand and analyze the data and the best Circumstances for a restaurant to success and what are the most favourite food cuisines to the students inside the campus along with the main factors for a restaurant to work from the location and dishes point of view.

**Research Question**

Can Krusty Krab choose the best menu carefully to be opened in IIUM university and Break into the market?

**Objective**

* Build machine learning to cluster users based on their food differences.
* Identify the best way to satisfy the customers' needs and the best circumstances for a restaurant to success
* Increase the profit of the restaurant

**Significance**

Help the startups and mid-restaurant to know which is the best food to serve in their new restaurants to offer the right menu for college students.

**Literature Review**

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| **No.** | **Year** | **Authors** | **Research Problem** | **Main techniques applied** | **Result** | **Future work** |
| 1. | 2015 | BAYU ADHI TAMA | Data Mining For Predicting Customer  Satisfaction In Fast-Food Restaurant | decision tree and neural network | Accuracy  84.78% | they intend to conduct a cross sectional research by comparing the characteristics of fast-food customers in Indonesia and other countries. |
| 2. | 2017 | Ali Çekiç &  Eyyüp Özkamali & Ahmet Buğa | The analysis of variables predicting eating habits of university  students | Correlation  and logistic regression | The model which  covered all predictive variables accounted for 17% of eating attitudes. |  |

**Methodology**

The main structure of our project is knowing students’ food preferences and how they will in the situation of opening a new restaurant. That's why we search for a suitable dataset for our project.

Food choices are dataset includes information on food choices, nutrition, preferences, childhood favorites, and other information from college students.

In order to extract useful information from the dataset, we need to use many technologies such as python and its library (pandas, matplotlib, sklearn, numpy……)

The machine learning algorithm that we are going to use is K-Means which is the most well-known clustering algorithm because we need to identify which type of food our restaurant will serve based on the cluster of students who prefer it.

the mentioned dataset has 61 properties all about students such as (age, gender, weight, type of food he/she likes, income, on/off campus, sports, ....).

The resulted training model should be able to cluster students into groups based on their favourite food.



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