FACULTY OF ENGINEERING & TECHNOLOGY

ASSIGNMENT REPORT ON APPLICATION OF KNOWLEDGE ACQUIRED FROM MODULES ONE TO THREE USING MATLAB

PRESENTED TO: THE COMPUTER PROGRAMMING COURSE LECTURER
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By GROUP 18

ABSTRACT

This report details a two-part MATLAB assignment focused on applying data handling and organization skills. The first exercise involved importing a dataset of IMDB-Movie-Data from a website called Kaggle.com , reading it into MATLAB script, and then using the script to process the data.

The script organized the data by year and exported it into a single Excel workbook with separate sheets for each year. The second exercise concentrated on structuring diverse data types by using a MATLAB script to collect various personal attributes such as name, age, and interests from each gruop member and storing them in a single, cohesive structural array variable. The project demonstrated fundamental skills in data handling, organization, and problem-solving within the MATLAB environment, providing practical experience in a complete data workflow.

Table of Contents

ACKNOWLEGEMENT

By the Grace of GOD we were able to work together as a group to complete the assignment and we acknowledge him for that.

We thank, Mr. Maseruka Ben our course lecturer for guiding us in this course which is a vital aspect for our engineering profession.

Appreciation goes to group members for the commitment and team spirit which simplified work and made it easy for us to complete the task and come up with this report.

DECLARATION

We, Group 18 members hereby declare to the best of our knowledge, that this assignment report is a true record of our unending efforts in applying the knowledge we acquired from modules one through three. It is truly an original creation of our own and it has never been used by any other individual for any academic award in any learning institution.

MEMBERS OF GROUP 18

	NAME	REG NUMBER	PROGRAM	SIGN
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4	OMARA PASCAL KELLY	BU/UP/2024/1063	WAR	
5	AUMA DIANA	BU/UP/2024/1020	WAR	
6	NANDAULA CATHERINE	BU/UP/2024/4322	AMI	
7	NABAWEESI CLAIRE	BU/UP/2024/1046	WAR	
8	ENAMU REAGAN EGIMU	BU/UG/2024/2672	APE	
9	NAKAWEESA LINNET	BU/UP/2024/4327	APE	
10	OLUK CHRISTIAN GLEN	BU/UP/2024/3842	WAR	

APPROVAL

This is to confirm that this report has been written and presented by Group 18, giving details of the assignment carried out.

Course Lecturer

Signature _____

Date _____

Chapter 1: Introduction

This report provides a detailed overview of the two-part MATLAB assignment. The first exercise focused on data manipulation, specifically the process of importing a dataset from Kaggle, structuring it for analysis, and exporting it to an organized Excel workbook. The second exercise involved a more focused task of structuring heterogeneous data by storing a group of members' personal attributes into a single, cohesive variable. In the second assignment, question one required us to visualize the different parameters, patterns, trays and relationships from reference of a dataset imported from Kaggle. Question two required us to describe the different statistical characteristics in our previously collected data and then visualize them. In this assignment we were required to demonstrate fundamental skills in data handling, organization, using code within the MATLAB environment.

First Assignment;

Exercise 1

Retrieve a unique data set from kaggle.com in Excel format.
Write a single MATLAB script to:

1. Read the dataset into MATLAB
2. Copy variables for each year
3. Display data for each year in separate tables
4. Convert the tables from (3) into structural arrays
5. Output the variables from the structural arrays into one excel workbook and separate sheets for data of each year with clear column headings

Exercise 2

Each group has different members from different backgrounds, home districts, religions , tribes, villages, Courses , interests , ages , names, and facial representations

Write a MATLAB code that can store each member’s attributes into a single variable. Ensure the code saves the variable.

Chapter 2: Exercise solutions

Exercise 1: Kaggle Dataset categorizing

The primary objective of this exercise was to create a MATLAB script suitable for handling an external dataset. Our approach was a three-step process:

Methodology

Data Acquisition and Import: We sourced a unique dataset from Kaggle in Excel format. The MATLAB script was designed to use a function to read the entire .csv file, ensuring all data was available for processing. Our exercise required that the data be of a variety containing a field for the year. We chose a dataset of IMDB-Movie-Data.

We imported the data in Excel in order to remove records with missing values and, remove records with uncoherent data as well.
Once the data was clean and usable, our next step was to import it into our MATLAB environment. For that we added the dataset file into our exercise folder for convenience purposes, read it to MATLAB and proceeded with further processing.

Data Processing: Our end task was to structure the data into separate years maintaining the structure of the individual years' data while keeping each individual year separate. To do this we used the MATLAB script to access the field labelled "Year" and extract unique values. These are the different years that our data has, repeated across multiple records. For our next step, we utilized the loop feature of MATLAB to iterate over our dataset while extracting the records of data that match each of the unique years; for every unique year!

Once we had extracted records of the year of interest, we converted the resulting filtered table into a structural array; and added it to a worksheet in our target Excel workbook.
At the end of the iteration, we had an Excel workbook with different sheets corresponding to different years of IMDB-Movie-Data.
This final step required the script to output the structured data back into a single Excel workbook. Using MATLAB's built-in functions, we created an Excel workbook and to achieve the separation of the worksheets we used a property called Sheet, and assigned the respective years as sheet names. This ensures the output is easy for a human to interpret.

Below is the code we used to write a script that would accomplish our intended task, we saved the "group18.mlx" script into our exercise folder and executed the script using the Run command in our MATLAB IDE.
In the code below;
mat represents a dataset retrieved from Kaggle.com
mats represents table to structural array

matst represents structural array to table

READING DATA FROMA TABLE

```
mat = readtable("IMDB-Movie-Data.xlsx","ReadVariableNames",true);
disp(mat);
```

PUTTING VARIABLE OF EACH YEAR INTO TABLE OF ITS OWN

```
mat2014 = mat(mat.Year==2014, :);
mat2016 = mat(mat.Year==2016, :);
mat2008 = mat(mat.Year==2008, :);
mat2013 = mat(mat.Year==2013, :);
mat2012 = mat(mat.Year==2012, :);
mat2010 = mat(mat.Year==2010, :);
mat2009 = mat(mat.Year==2009, :);
mat2011 = mat(mat.Year==2011, :);
mat2006 = mat(mat.Year==2006, :);
mat2007 = mat(mat.Year==2007, :);
```

CONVERTING THE TABLE ABOVE INTO STRUCTURAL ARRAY

```
mats2014 = table2struct(mat2014);
mats2016 = table2struct(mat2016);
mats2008 = table2struct(mat2008);
mats2013 = table2struct(mat2013);
mats2012 = table2struct(mat2012);
mats2010 = table2struct(mat2010);
mats2009 = table2struct(mat2009);
mats2011 = table2struct(mat2011);
mats2006 = table2struct(mat2006);
mats2007 = table2struct(mat2007);
```

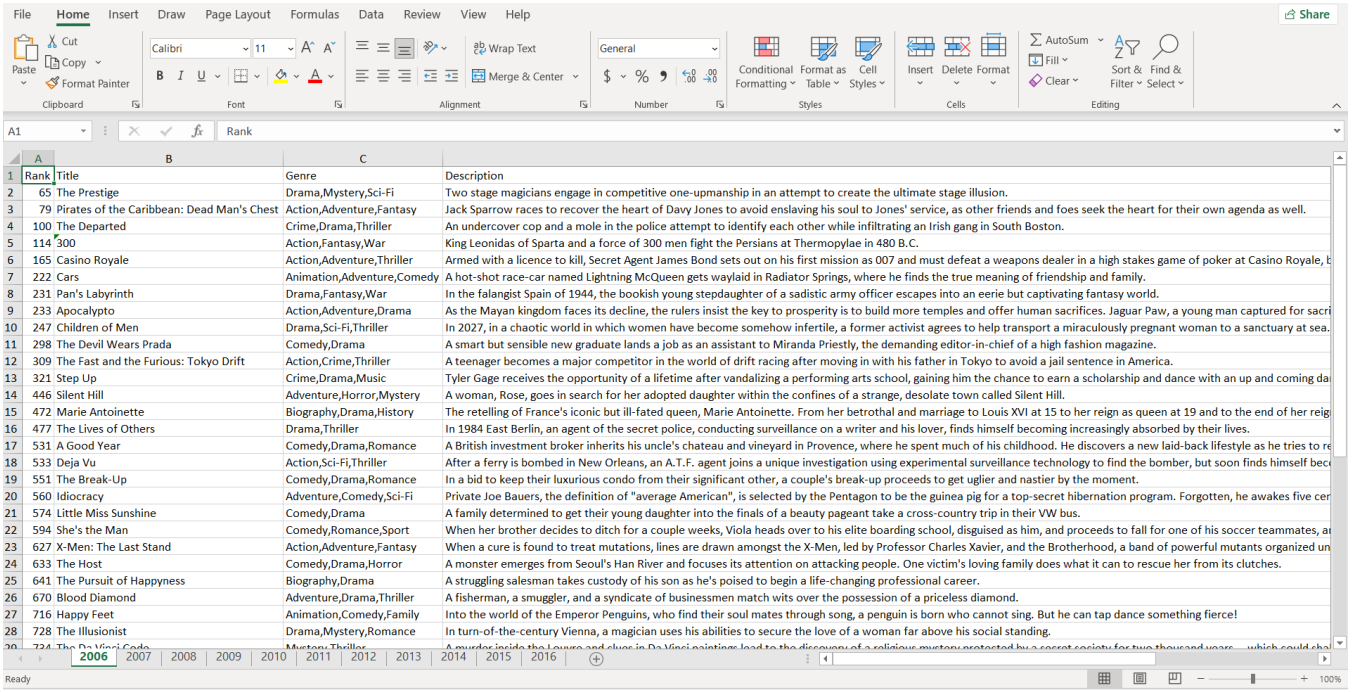
PUTTING THE VARIABLE ABOVE IN EXCEL WORKBOOK

```
S_TABLE2014 = struct2table(mats2014);
S_TABLE2016 = struct2table(mats2016);
S_TABLE2008 = struct2table(mats2008);
S_TABLE2013 = struct2table(mats2013);
S_TABLE2012 = struct2table(mats2012);
S_TABLE2010 = struct2table(mats2010);
S_TABLE2009 = struct2table(mats2009);
S_TABLE2011 = struct2table(mats2011);
S_TABLE2006 = struct2table(mats2006);
S_TABLE2007 = struct2table(mats2007);
writetable(S_TABLE2007,"DATA.xlsx","Sheet","2007");
writetable(S_TABLE2011,"DATA.xlsx","Sheet","2011");
writetable(S_TABLE2006,"DATA.xlsx","Sheet","2006");
writetable(S_TABLE2014,"DATA.xlsx","Sheet","2014");
writetable(S_TABLE2008,"DATA.xlsx","Sheet","2008");
writetable(S_TABLE2009,"DATA.xlsx","Sheet","2009");
```

```
writetable(S_TABLE2013,"DATA.xlsx","Sheet","2013");
writetable(S_TABLE2012,"DATA.xlsx","Sheet","2012");
writetable(S_TABLE2016,"DATA.xlsx","Sheet","2016");
```

A sample of the Output of variables from the structural arrays into one excel workbook and separate sheets

```
writetable(S_TABLE2010,"DATA.xlsx","Sheet","2010");
```



Rank	Title	Genre	Description
65	The Prestige	Drama,Mystery,Sci-Fi	Two stage magicians engage in competitive one-upmanship in an attempt to create the ultimate stage illusion.
79	Pirates of the Caribbean: Dead Man's Chest	Action,Adventure,Fantasy	Jack Sparrow races to recover the heart of Davy Jones to avoid enslaving his soul to Jones' service, as other friends and foes seek the heart for their own agenda as well.
100	The Departed	Crime,Drama,Thriller	An undercover cop and a mole in the police attempt to identify each other while infiltrating an Irish gang in South Boston.
114	300	Action,Fantasy,War	King Leonidas of Sparta and a force of 300 men fight the Persians at Thermopylae in 480 B.C.
165	Casino Royale	Action,Adventure,Thriller	Armed with a licence to kill, Secret Agent James Bond sets out on his first mission as 007 and must defeat a weapons dealer in a high stakes game of poker at Casino Royale,
222	Cars	Animation,Adventure,Comedy	A hot-shot race-car named Lightning McQueen gets waylaid in Radiator Springs, where he finds the true meaning of friendship and family.
231	Pan's Labyrinth	Drama,Fantasy,War	In the falangist Spain of 1944, the bookish young stepdaughter of a sadistic army officer escapes into an eerie but captivating fantasy world.
233	Apocalypto	Action,Adventure,Drama	As the Mayan kingdom faces its decline, the rulers insist the key to prosperity is to build more temples and offer human sacrifices. Jaguar Paw, a young man captured for sacri
247	Children of Men	Drama,Sci-Fi,Thriller	In 2027, in a chaotic world in which women have become somehow infertile, a former activist agrees to help transport a miraculously pregnant woman to a sanctuary at sea.
298	The Devil Wears Prada	Comedy,Drama	A smart but sensible new graduate lands a job as an assistant to Miranda Priestly, the demanding editor-in-chief of a high fashion magazine.
309	The Fast and the Furious: Tokyo Drift	Action,Crime,Thriller	A teenager becomes a major competitor in the world of drift racing after moving in with his father in Tokyo to avoid a jail sentence in America.
321	Step Up	Crime,Drama,Music	Tyler Gage receives the opportunity of a lifetime after vandalizing a performing arts school, gaining him the chance to earn a scholarship and dance with an up and coming da
446	Silent Hill	Adventure,Horror,Mystery	A woman, Rose, goes in search for her adopted daughter within the confines of a strange, desolate town called Silent Hill.
472	Marie Antoinette	Biography,Drama,History	The retelling of France's iconic but ill-fated queen, Marie Antoinette. From her betrothal and marriage to Louis XVI at 15 to her reign as queen at 19 and to the end of her reig
477	The Lives of Others	Drama,Thriller	In 1984 East Berlin, an agent of the secret police, conducting surveillance on a writer and his lover, finds himself becoming increasingly absorbed by their lives.
531	A Good Year	Comedy,Drama,Romance	A British investment broker inherits his uncle's chateau and vineyard in Provence, where he spent much of his childhood. He discovers a new laid-back lifestyle as he tries to re
533	Deja Vu	Action,Sci-Fi,Thriller	After a ferry is bombed in New Orleans, an A.T.F. agent joins a unique investigation using experimental surveillance technology to find the bomber, but soon finds himself bec
551	The Break-Up	Comedy,Drama,Romance	In a bid to keep their luxurious condo from their significant other, a couple's break-up proceeds to get uglier and nastier by the moment.
560	Idiocracy	Adventure,Comedy,Sci-Fi	Private Joe Bauers, the definition of "average American", is selected by the Pentagon to be the guinea pig for a top-secret hibernation program. Forgotten, he awakes five cer
574	Little Miss Sunshine	Comedy,Drama	A family determined to get their young daughter into the finals of a beauty pageant take a cross-country trip in their VW bus.
594	She's the Man	Comedy,Romance,Sport	When her brother decides to ditch for a couple weeks, Viola heads over to his elite boarding school, disguised as him, and proceeds to fall for one of his soccer teammates, a
627	X-Men: The Last Stand	Action,Adventure,Fantasy	When a cure is found to treat mutations, lines are drawn amongst the X-Men, led by Professor Charles Xavier, and the Brotherhood, a band of powerful mutants organized un
633	The Host	Comedy,Drama,Horror	A monster emerges from Seoul's Han River and focuses its attention on attacking people. One victim's loving family does what it can to rescue her from its clutches.
641	The Pursuit of Happyness	Biography,Drama	A struggling salesman takes custody of his son as he's poised to begin a life-changing professional career.
670	Blood Diamond	Adventure,Drama,Thriller	A fisherman, a smuggler, and a syndicate of businessmen match wits over the possession of a priceless diamond.
716	Happy Feet	Animation,Comedy,Family	Into the world of the Emperor Penguins, who find their soul mates through song, a penguin is born who cannot sing. But he can tap dance something fierce!
728	The Illusionist	Drama,Mystery,Romance	In turn-of-the-century Vienna, a magician uses his abilities to secure the love of a woman far above his social standing.

Exercise 2: Group Member Data Storage

This exercise focused on a different aspect of data management: structuring varied data types into a single variable. The task was to take a set of attributes for each group member including home district, religion, tribe, interests, age, name, and a description for facial representation and store them collectively.

To accomplish this, we chose to utilize a structural array. Each element of the array represents a single group member, and each field within that element (e.g., `.name`, `.age`, `.interests`) holds the corresponding attribute. This approach allows for logical grouping of related data and simplifies future access and manipulation of the information.

Our main task here was to get the data into the MATLAB environment, for that we utilized the MATLAB input feature. Using a script, we prompted the user to enter values for the attributes of the different group members; again, we utilized a loop for this. First, we prompted the user to enter the group size, in terms of number of members; and iterated the attribute prompts for each of the members

Below is the code for the MATLAB script we used to achieve the intended outcome of the exercise.

```
%%Defining struct
members =
struct('Name',{},'Age',{},'course',{},'HomeDistrict',{},'Interest',{},'Tribe',{},'Backgroun
d',{},'FacialRepresentation',{},'Village',{},'Religion',{});
%member1
members(1).Name = 'MUKHOOLI ELIJAH';
members(1).Age = 28;
members(1).course = 'MEB';
members(1).HomeDistrict = 'Mbale';
members(1).Interest = 'Researching';
members(1).Tribe = 'Gishu';
members(1).Background = 'Humble';
members(1).FacialRepresentation = imread("IMG-20250907-WA0008.jpg");
members(1).Village = 'Bugema Cell';
members(1).Religion = 'Pentacostal';
%member2
members(2).Name = 'AUMA DIANA';
members(2).Age = 22;
members(2).course = 'WAR';
members(2).HomeDistrict = 'Oyam';
members(2).Interest = 'Watching';
members(2).Tribe = 'Lango';
members(2).Background = 'Humble';
members(2).FacialRepresentation = imread("IMG-20250911-WA0015.jpg");
members(2).Village = 'Aringolworo';
members(2).Religion = 'Catholic';
%member3
members(3).Name = 'UHURU BRIAN DENISH';
members(3).Age = 21;
```

```
members(3).course = 'WAR';
members(3).HomeDistrict = 'Lamwo';
members(3).Interest = 'Video Game';
members(3).Tribe = 'Acholi';
members(3).Background = 'Humble';
members(3).FacialRepresentation = imread("IMG-20250907-WA0008.jpg");
members(3).Village = 'Okokwene';
members(3).Religion = 'Catholic';
%member4
members(4).Name = 'TUMUHAISE SARAH';
members(4).Age = 21;
members(4).course = 'AMI';
members(4).HomeDistrict = 'Hoima';
members(4).Interest = 'Cooking';
members(4).Tribe = 'Runyoro';
members(4).Background = 'Humble';
members(4).FacialRepresentation = imread("IMG-20250911-WA0018.jpg");
members(4).Village = 'Katasiha';
members(4).Religion = 'Anglican';
%member5
members(5).Name = 'NABAWEESI CLAIRE';
members(5).Age = 20;
members(5).course = 'WAR';
members(5).HomeDistrict = 'Mityana';
members(5).Interest = 'Watching animations';
members(5).Tribe = 'Muganda';
members(5).Background = 'Humble';
members(5).FacialRepresentation = imread("IMG-20250907-WA0007.jpg");
members(5).Village = 'Wabigalo';
members(5).Religion = 'Catholic';
%member6
members(6).Name = 'NANDAULA CATHERINE';
members(6).Age = 21;
members(6).course = 'AMI';
members(6).HomeDistrict = 'Buvuma';
members(6).Interest = 'Baking';
members(6).Tribe = 'Muganda';
members(6).Background = 'Humble';
members(6).FacialRepresentation = imread("IMG-20250911-WA0010.jpg");
members(6).Village = 'Bugaya';
members(6).Religion = 'Bornagain';
%member7
members(7).Name = 'OMARA PASCHAL KELLY';
members(7).Age = 21;
members(7).course = 'WAR';
members(7).HomeDistrict = 'Oyam';
members(7).Interest = 'Singing';
members(7).Tribe = 'Lango';
members(7).Background = 'Humble';
members(7).FacialRepresentation = imread("IMG-20250911-WA0013.jpg");
members(7).Village = 'Aringoarum';
members(7).Religion = 'Catholic';
%member8
members(8).Name = 'ENAMU REAGAN EGIMU';
members(8).Age = 21;
members(8).course = 'APE';
```

```
members(8).HomeDistrict = 'Soroti';
members(8).Interest = 'Soccer';
members(8).Tribe = 'Itesot';
members(8).Background = 'Humble';
members(8).FacialRepresentation = imread("IMG-20250911-WA0007.jpg");
members(8).Village = 'Owalei';
members(8).Religion = 'Catholic';
%member9
members(9).Name = 'OLUK CHRISTIAN GLEN';
members(9).Age = 21;
members(9).course = 'WAR';
members(9).HomeDistrict = 'Apac';
members(9).Interest = 'Playing Football';
members(9).Tribe = 'Lango';
members(9).Background = 'Humble';
members(9).FacialRepresentation = imread("IMG-20250911-WA0017.jpg");
members(9).Village = 'Akokoro';
members(9).Religion = 'Catholic';
%member10
members(10).Name = 'NAKAWEESA LINNET';
members(10).Age = 21;
members(10).course = 'APE';
members(10).HomeDistrict = 'Mukono';
members(10).Interest = 'Food';
members(10).Tribe = 'Muganda';
members(10).Background = 'Humble';
members(10).FacialRepresentation = imread("IMG-20250911-WA0021.jpg");
members(10).Village = 'Mukono';
members(10).Religion = 'Bornagain';
save("test.mat","members")
```

Second Assignment;

Question One;

From the previous question one, utilize all knowledge obtained from module one to four to visualize the different parameters, patterns, trays and relationships.

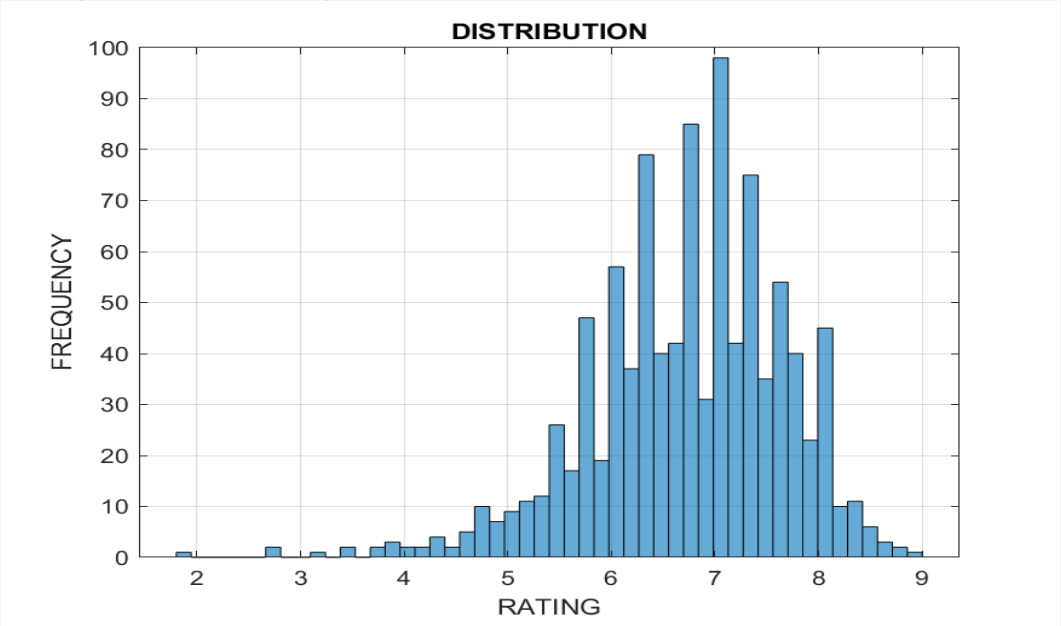
Ensure that each plot is saved as an image and is well annotated (labelled).

IN REFFERENCE TO THE CODES OF EXERCISE ONE IN THE FIRST ASSIGMENT;

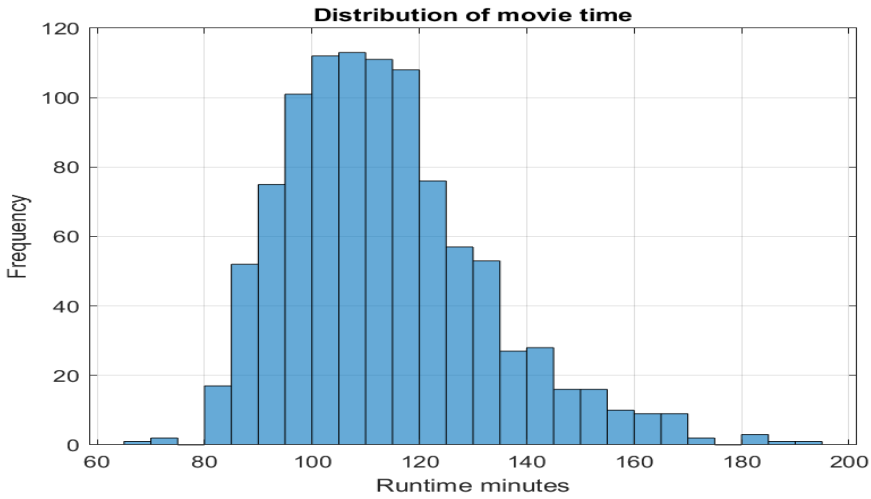
VISUALIZATION OF THE DATA

1. HISTOGRAM

```
histogram(mat.Rating,50);
xlabel("RATING");
ylabel("FREQUENCY");
title("DISTRIBUTION");
grid on;
saveas(gcf,"figure 1 RATING.png");
```

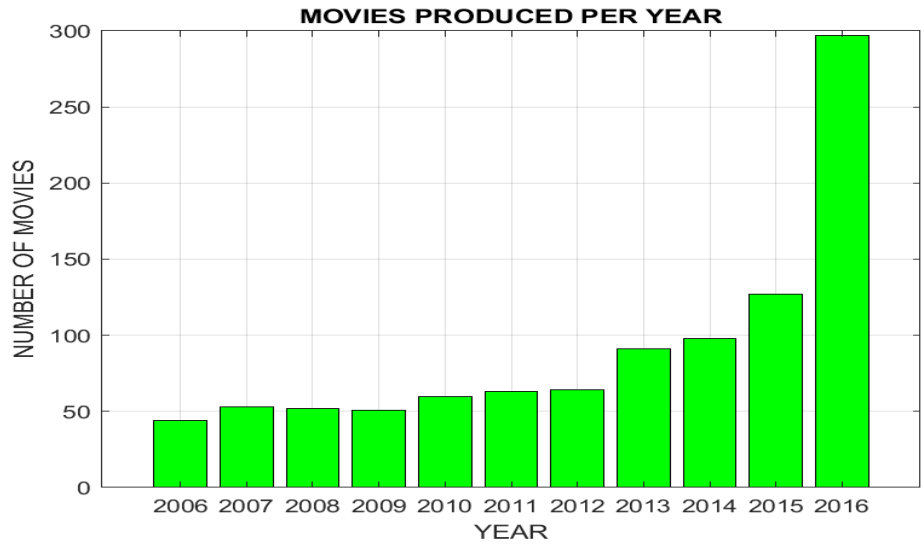



```
histogram(mat.Runtime_Minutes_);
title("Distribution of movie time");
xlabel("Runtime minutes");
ylabel("Frequency");
grid on;
saveas(gcf,"figure 2 RUNTIME_MINUTE.png")
```



2. BAR GRAPH

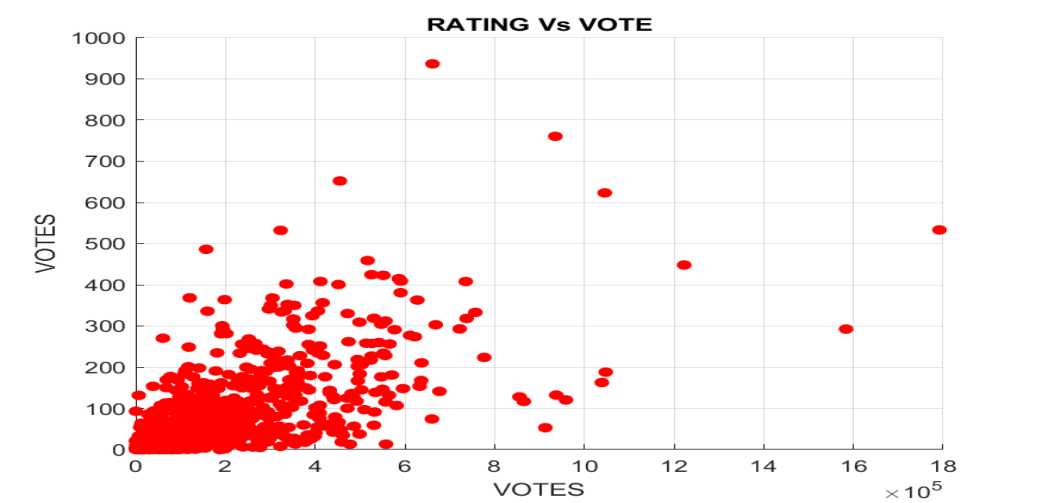
```
TABLE2 = groupsummary(mat,"Year");
bar(TABLE2.Year,TABLE2.GroupCount,"g");
grid on;
title("MOVIES PRODUCED PER YEAR");
xlabel("YEAR");
ylabel("NUMBER OF MOVIES");
saveas(gcf,"figure 3 MOVIES.png");
```



3. SCATTER DIAGRAM

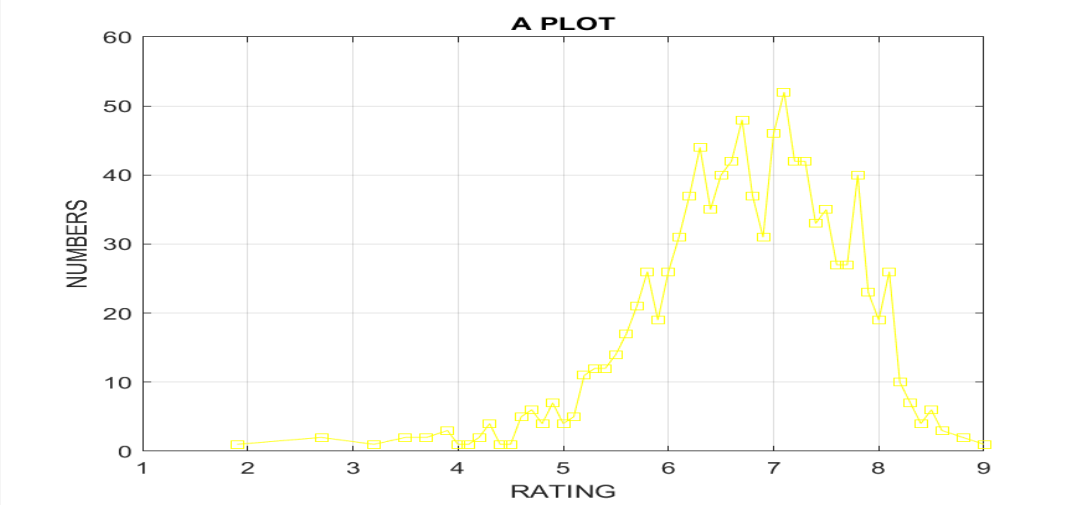
```
scatter(mat.Votes,mat.Revenue_Millions_,"r","filled");
title("RATING Vs VOTE");
xlabel("VOTES");
ylabel("VOTES");
grid on;
```

```
saveas(gcf,"figure 4 SCATTER PLOT.png");
```



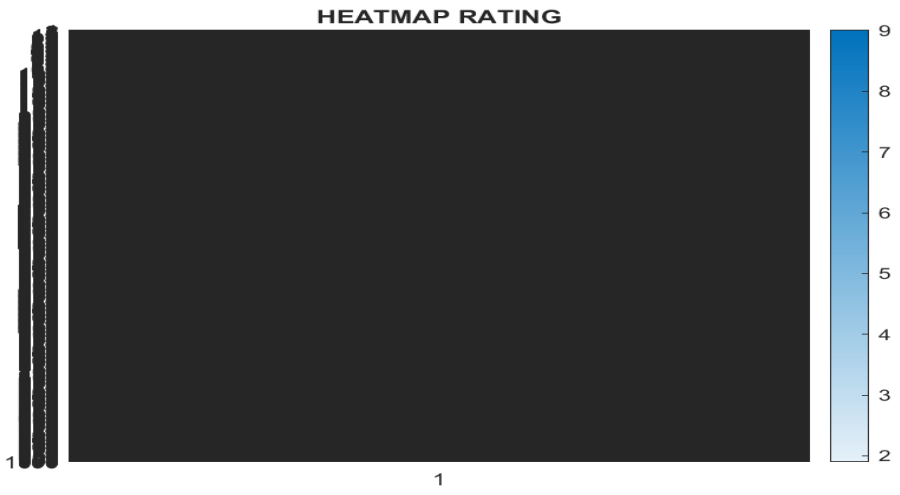
4. LINE PLOT

```
Table3 = groupsummary(mat,"Rating");
plot(Table3.Rating,Table3.GroupCount,"ys-");
grid on;
title("A PLOT");
xlabel("RATING");
ylabel("NUMBERS");
saveas(gcf,"figure 5 LINE PLOT.png");
```



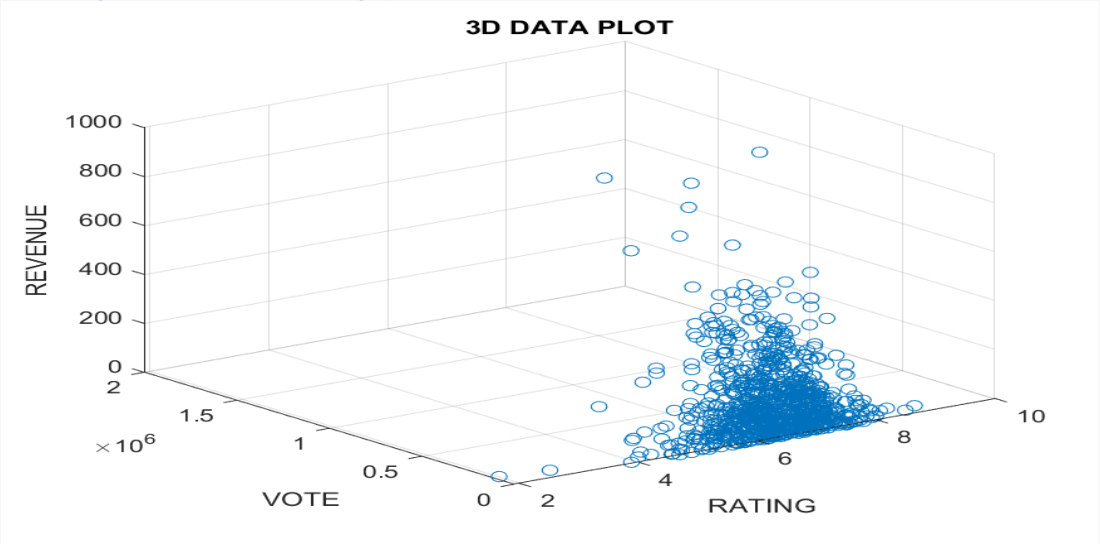
5. HEATMAP

```
heatmap(mat.Rating);
grid on;
title("HEATMAP RATING");
saveas(gcf," figure 6 HEATMAP.png");
```

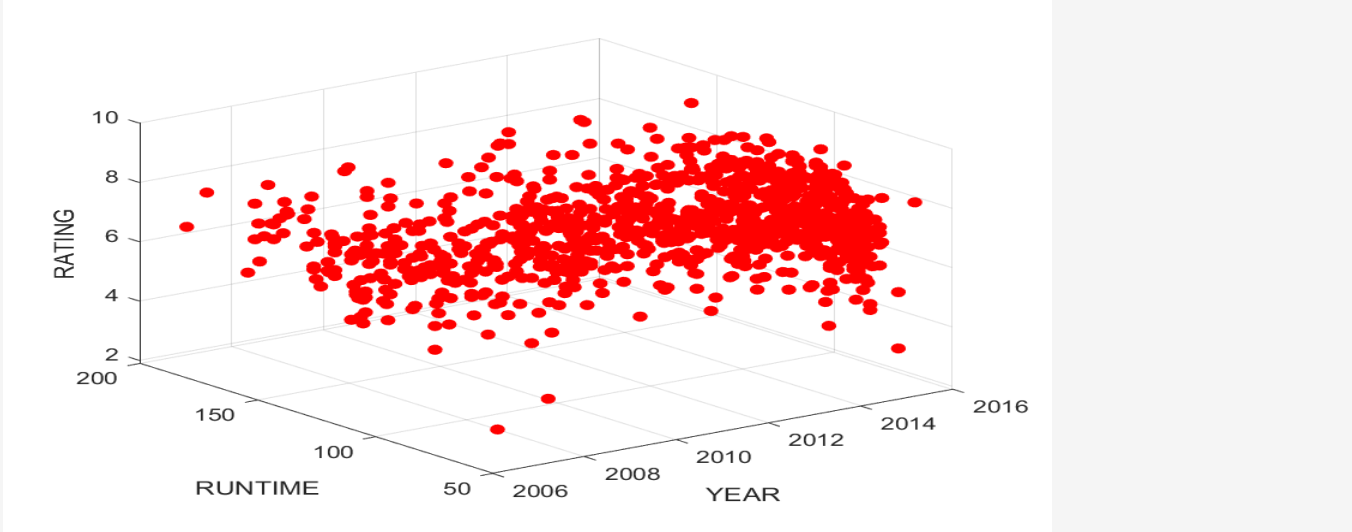


6. 3D SCATTER PLOT

```
scatter3(mat.Rating,mat.Votes,mat.Revenue_Millions_);
xlabel("RATING");
ylabel("VOTE");
zlabel("REVENUE");
title("3D DATA PLOT");
saveas(gcf,"figure 7 3D PLOT.png");
```




```
scatter3(mat.Year,mat.Runtime_Minutes_,mat.Rating,"r","filled");
xlabel("YEAR");
ylabel("RUNTIME");
zlabel("RATING");
saveas(gcf,"figure 8 3D SCATTER PLOT.png");
```



Question Two;

From the previous question two, utilize all the knowledge from module one to four to describe the different statistical characteristics in your data and ensure to visualize them. Ensure that the different attributes/ data collected per individual is detailed enough to describe them.

QUESTION TWO SOLUTION;

Question two required us to visualize each member's statistical data.
Using the reference of exercise two first assignment, we arranged our data to a structural array then to a table array. We spotted out the statistical data and visualized it into different plots.

Below is the code for the MATLAB script we used to achieve the intended outcome of question two

```
%%Defining struct
members =
struct('Name',{},'Age',{},'course',{},'HomeDistrict',{},'Interest',{},'Tribe',{},'Backgroun
d',{},'FacialRepresentation',{},'Village',{},'Religion',{});
%member1
members(1).Name = 'MUKHOOLI ELIJAH';
members(1).Age = 28;
members(1).course = 'MEB';
members(1).HomeDistrict = 'Mbale';
members(1).Interest = 'Researching';
members(1).Tribe = 'Gishu';
members(1).Background = 'Humble';
members(1).FacialRepresentation = imread("WhatsApp Image 2025-09-10 at
22.25.52_3f4691f9.jpg");
members(1).Village = 'Bugema Cell';
members(1).Religion = 'Pentacostal';
%member2
members(2).Name = 'AUMA DIANA';
members(2).Age = 22;
members(2).course = 'WAR';
members(2).HomeDistrict = 'Oyam';
members(2).Interest = 'Watching';
members(2).Tribe = 'Lango';
members(2).Background = 'Humble';
members(2).FacialRepresentation = imread("WhatsApp Image 2025-09-10 at
22.25.53_d5a71d71.jpg");
members(2).Village = 'Aringolworo';
members(2).Religion = 'Catholic';
%member3
members(3).Name = 'UHURU BRIAN DENISH';
members(3).Age = 21;
members(3).course = 'WAR';
members(3).HomeDistrict = 'Lamwo';
members(3).Interest = 'Video Game';
members(3).Tribe = 'Acholi';
members(3).Background = 'Humble';
members(3).FacialRepresentation = imread("WhatsApp Image 2025-09-10 at
22.25.53_e1b26b1e.jpg");
members(3).Village = 'Okokwene';
members(3).Religion = 'Catholic';
```

```
%member4
members(4).Name = 'TUMUHAISE SARAH';
members(4).Age = 21;
members(4).course = 'AMI';
members(4).HomeDistrict = 'Hoima';
members(4).Interest = 'Cooking';
members(4).Tribe = 'Runyoro';
members(4).Background = 'Humble';
members(4).FacialRepresentation = imread("WhatsApp Image 2025-09-10 at
22.25.54_c2db7638.jpg");
members(4).Village = 'Katasiha';
members(4).Religion = 'Anglican';
%member5
members(5).Name = 'NABAWEESI CLAIRE';
members(5).Age = 20;
members(5).course = 'WAR';
members(5).HomeDistrict = 'Mityana';
members(5).Interest = 'Watching animations';
members(5).Tribe = 'Muganda';
members(5).Background = 'Humble';
members(5).FacialRepresentation = imread("WhatsApp Image 2025-09-10 at
22.25.52_3f4691f9.jpg");
members(5).Village = 'Wabigalo';
members(5).Religion = 'Catholic';
%member6
members(6).Name = 'NANDAULA CATHERINE';
members(6).Age = 21;
members(6).course = 'AMI';
members(6).HomeDistrict = 'Buvuma';
members(6).Interest = 'Baking';
members(6).Tribe = 'Muganda';
members(6).Background = 'Humble';
members(6).FacialRepresentation = imread("WhatsApp Image 2025-09-10 at
22.25.55_088b8852.jpg");
members(6).Village = 'Bugaya';
members(6).Religion = 'Bornagain';
%member7
members(7).Name = 'OMARA PASCHAL KELLY';
members(7).Age = 21;
members(7).course = 'WAR';
members(7).HomeDistrict = 'Oyam';
members(7).Interest = 'Singing';
members(7).Tribe = 'Lango';
members(7).Background = 'Humble';
members(7).FacialRepresentation = imread("WhatsApp Image 2025-09-10 at
22.25.58_f33d070d.jpg");
members(7).Village = 'Aringoarum';
members(7).Religion = 'Catholic';
%member8
members(8).Name = 'ENAMU REAGAN EGIMU';
members(8).Age = 21;
members(8).course = 'APE';
members(8).HomeDistrict = 'Soroti';
members(8).Interest = 'Soccer';
members(8).Tribe = 'Itesot';
members(8).Background = 'Humble';
```

```
members(8).FacialRepresentation = imread("WhatsApp Image 2025-09-10 at
22.25.54_161b4918.jpg");
members(8).Village = 'Owalei';
members(8).Religion = 'Catholic';
%member9
members(9).Name = 'OLUK CHRISTIAN GLEN';
members(9).Age = 21;
members(9).course = 'WAR';
members(9).HomeDistrict = 'Apac';
members(9).Interest = 'Playing Football';
members(9).Tribe = 'Lango';
members(9).Background = 'Humble';
members(9).FacialRepresentation = imread("WhatsApp Image 2025-09-10 at
22.25.57_28f556bf.jpg");
members(9).Village = 'Akokoro';
members(9).Religion = 'Catholic';
%member10
members(10).Name = 'NAKAWEESA LINNET';
members(10).Age = 21;
members(10).course = 'APE';
members(10).HomeDistrict = 'Mukono';
members(10).Interest = 'Food';
members(10).Tribe = 'Muganda';
members(10).Background = 'Humble';
members(10).FacialRepresentation = imread("WhatsApp Image 2025-09-10 at
22.25.58_5ac3f089.jpg");
members(10).Village = 'Mukono';
members(10).Religion = 'Bornagain';
save("test.mat","members")

T = struct2table(members)
disp(T)
histogram(T.Age)
title("Distribution of Age")
xlabel("Age")
ylabel("Frequency")
grid on
saveas(gcf,"figure1.jpg")

barh(T.Name,T.Age)
title("Age Distribution")
xlabel("Age")
ylabel("Name")
grid on
saveas(gcf,"figure2.jpg")

boxplot(T.Age)
title("DISRIBUTION AGE");
ylabel("AGE")
grid on;
saveas(gcf,"figure_3.jpg")

pie(T.Age,T.Name)
title("PIE CHAT")
saveas(gcf,"figure4.jpg")
```

Various visualization of data

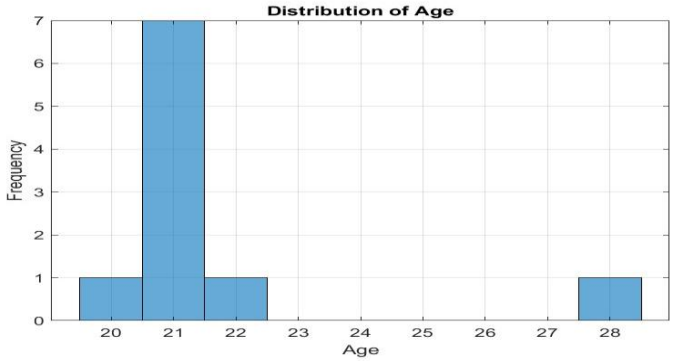


Figure1 shows a histogram
The graph shows how ages are distributed across the each member.

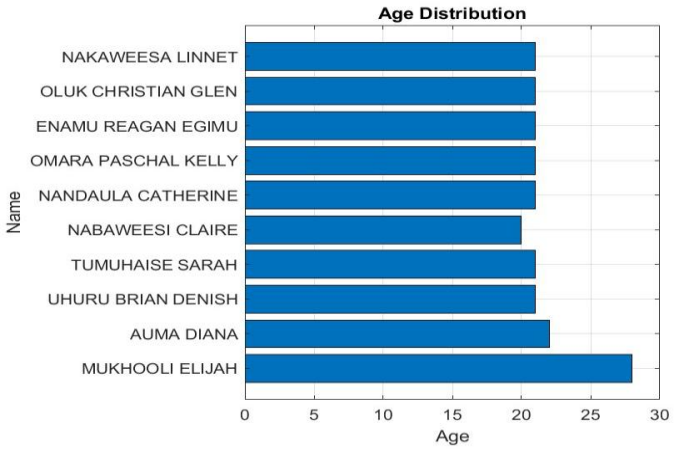


Figure2 shows a bar graph
The bar graph above plots each member's name on y-axis and their corresponding age on x-axis

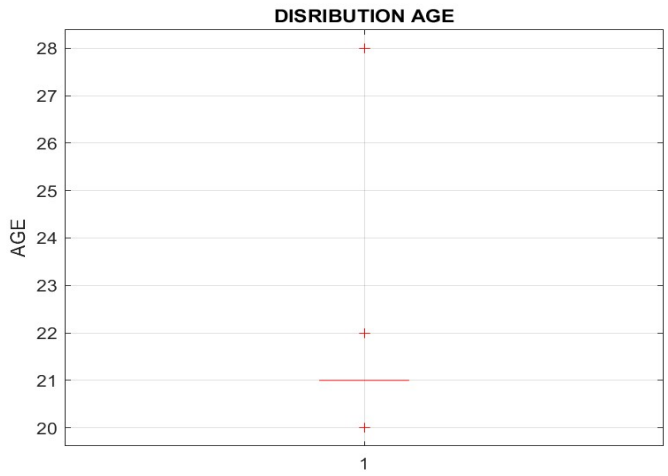


Figure3 shows a box graph
This creates a box-and whisker plot for ages
It summarizes the distribution of ages by showing the minimum and maximum values, median age, the quartiles.

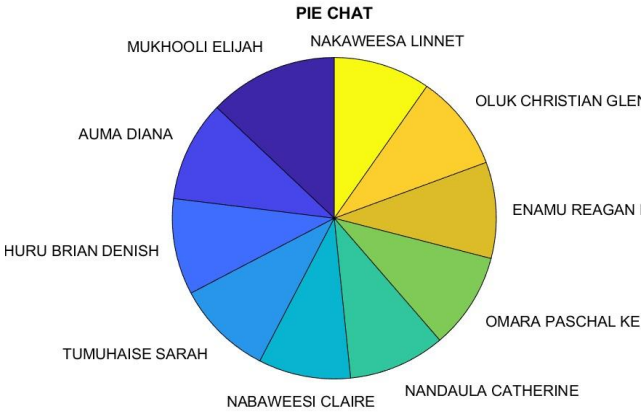


Figure4 shows a pie chat
The pie chat shows distribution of members' age proportions as percentages

Chapter 3: Conclusion and Learning Experience

Getting the dataset from Kaggle.com was quite a problem because most of them had information which did not meet our goal according to the first question of the first assignment. Using reliable variables, functions to run the code was quite challenging. On completing the assignment, we were able to learn how to retrieve data from Kaggle.com, run codes, visualize them and see the results. To our dismay, not all the codes were programmed rightly, we had challenges of codes running for long and not as programmed. Our dedication and persistence kept us swaying through the hurdles until we had our codes running as programmed.

Chapter 4: References and Resources

- kaggle.com - The primary source for the dataset used in this assignment.
- MATLAB Documentation - Used for syntax and function guidance on `readtable()`, `struct()`, and `writetable()`.
- You tube MATLAB tutorials