CERTIFICATE COURSE IN MATHEMATICS

- **CERTIFICATE COURSE IN R PROGRAMMING, 2021-22**
- **CERTIFICATE COURSE IN DATA ANALYSIS, 2021-22**
- **CERTIFICATE COURSE IN R PROGRAMMING, 2020-21**
- **CERTIFICATE COURSE IN DATA ANALYSIS, 2020-21**
- **CERTIFICATE COURSE IN R PROGRAMMING, 2019-20**
- **CERTIFICATE COURSE IN DATA ANALYSIS, 2019-20**
- **CERTIFICATE COURSE IN R PROGRAMMING, 2018-19**
- **CERTIFICATE COURSE IN DATA ANALYSIS, 2018-19**
- **CERTIFICATE COURSE IN R PROGRAMMING, 2017-18**
- **CERTIFICATE COURSE IN DATA ANALYSIS, 2017-18**

2021-22
CERTIFICATE COURSE IN

INTRODUCTION TO R PROGRAMMING

During the academic year 2021-22, fifteen students registered for the certificate course in an Introduction to R Programming , organized by the Department of Mathematics, Sree Narayana College, Chathannur. The theory classes and practical classes were handled by Smt. Anjana S S of the department. The topics taught in the course include bar diagram, Pie diagram, histogram, mean, median, mode, correlation and regression analysis. Lab sessions were also included in the course. The course was organized for the students who have got an idea about the importance of R Programming in real life. All of the registered students completed the course with good grades and course completion certificates were distributed to students.

Department of Mathematics

Certificate Course -II Syllabus

Title of the Course: Introduction to R PROGRAMMING

Aim of the Course

This Course is aimes at building a skill-set to tackle real-world data analysis. It is a guide to understand how to program in R and how to use R for effective data analysis.

Objective of the course

- The basics of statistical computing and data analysis
- How to use R for analytical programming

Outcome of the course

- After competing this course, you will be able to explain critical R programming concept. Through the use of R programming, analyses data and generate reports based on the data. As a result you can apply various concepts to write programs in R.

Sree Narayana College Chathannur

Department of Mathematics

Certificate Course - Syllabus

Title of the Course: Introduction To R Programming

Contact Hours: 30 hr [15(T) + 15(P)]

Module 1 : Charts and Diagrams (5 hr)

1. Bar diagrams

   1.1 Methods for drawing different bar diagrams using R programming.

2. Pie diagrams and Scatter diagram

   2.1 Methods for drawing diagrams using R programming.

3. Histogram

   3.1 Methods to install R studio.

   3.2 Methods to construct frequency tables using R.

   3.3 Methods for drawing Histogram using R.

Module 2 : Descriptive Statistics (4hr)

1. Mean, Median, Mode

   1.1 Methods to find Mean, Median, Mode using R.

Module 3 : Correlation and Regression (3hr)

1. Correlation

   1.1 Methods for finding correlation using R.

2. Regression

   2.1 Methods to find regression using R.

Module 4: ANOVA using R(3hr)

1. One way ANOVA

   1.1 Methods for finding ANOVA single factor (one way ANOVA).

   1.2 Result analysis for One way ANOVA.

2. Two way ANOVA

   2.1 Methods to find two way ANOVA with and without replications.

   2.2 Result analysis for two way ANOVA.

REFERENCES

1. **Dalgaard. P(2008), Introductory Statistics with R, Springer, Newyork.**
2. **Lander J P(2017), R for everyone 2/e. Addison-wesley, Professional, U.S**
3. **Michael J Crawley (2013), The R Book, 2/e, Wiley, Newyork.**

SREE NARAYANA COLLEGE , CHATHANNUR

DEPARTMENT OF MATHEMATICS

CERTIFICATE COURSE EXAMINATION 2021-2022

INTRODUCTION TO R PROGRAMMING

Time : 1 hr Max.marks :50

Answer any one question given below each carry 10 marks.

1.Represent the data using pi-diagram.

Items	Family
Food	142
clothing	84
House rent	105
Education	36
Fuel and light	41
Miscellaneous	42

2.The following table gives the distribution of the marks of 100 students in an examination. Represent the data by a histogram.

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70
No.of students	5	10	18	26	22	15	4

(1*10)

Answer any two question each carry 20 marks

3.Find all descriptive statistics measures of the following data.

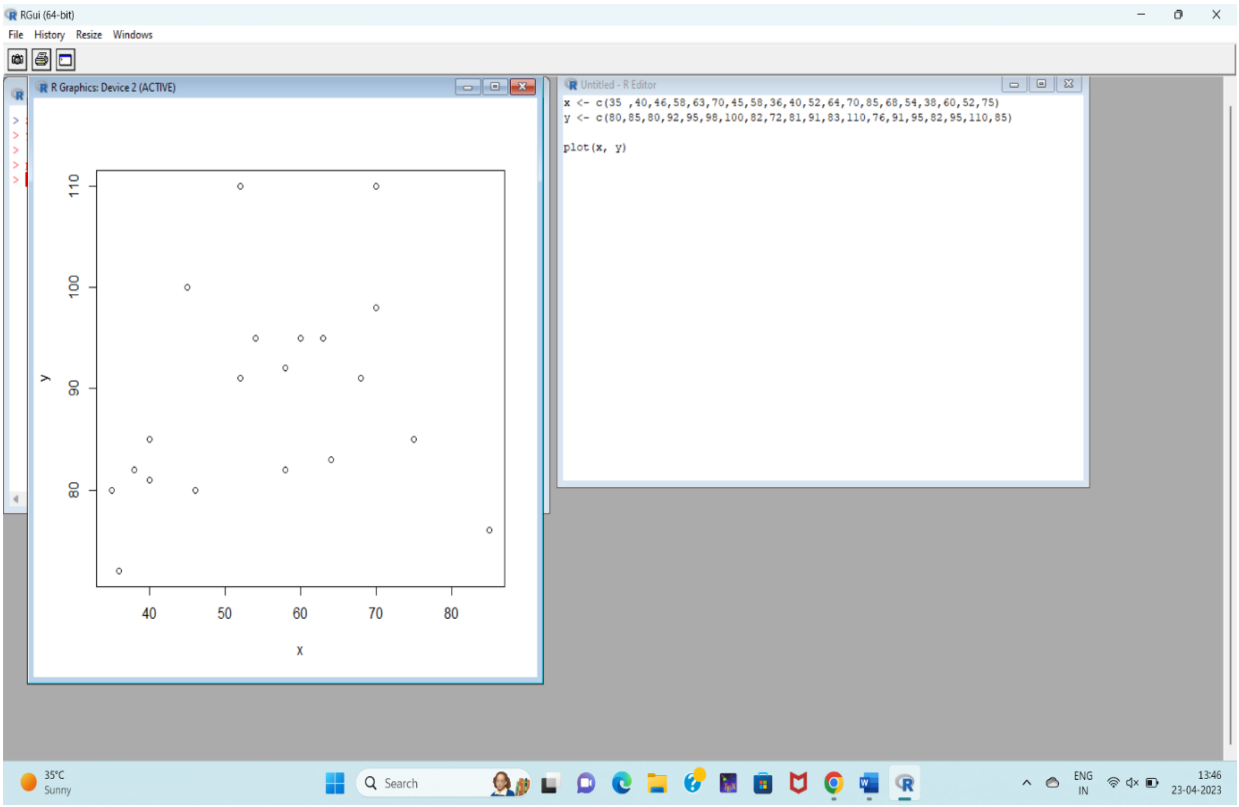
226,256,309.49,909.82,839.20,323.36,71.89,72.63,459.24,335.86,550.86,9.43,
773.58,775.15,799.68,72.82,178.99,631.99,814.08,580.00,805.05,329.81,30.58,
383.62,616.35,569.57,675.10,352.34

4.The following table shows age and blood pressure of 20 persons. Prepare a scatter diagram for the data.

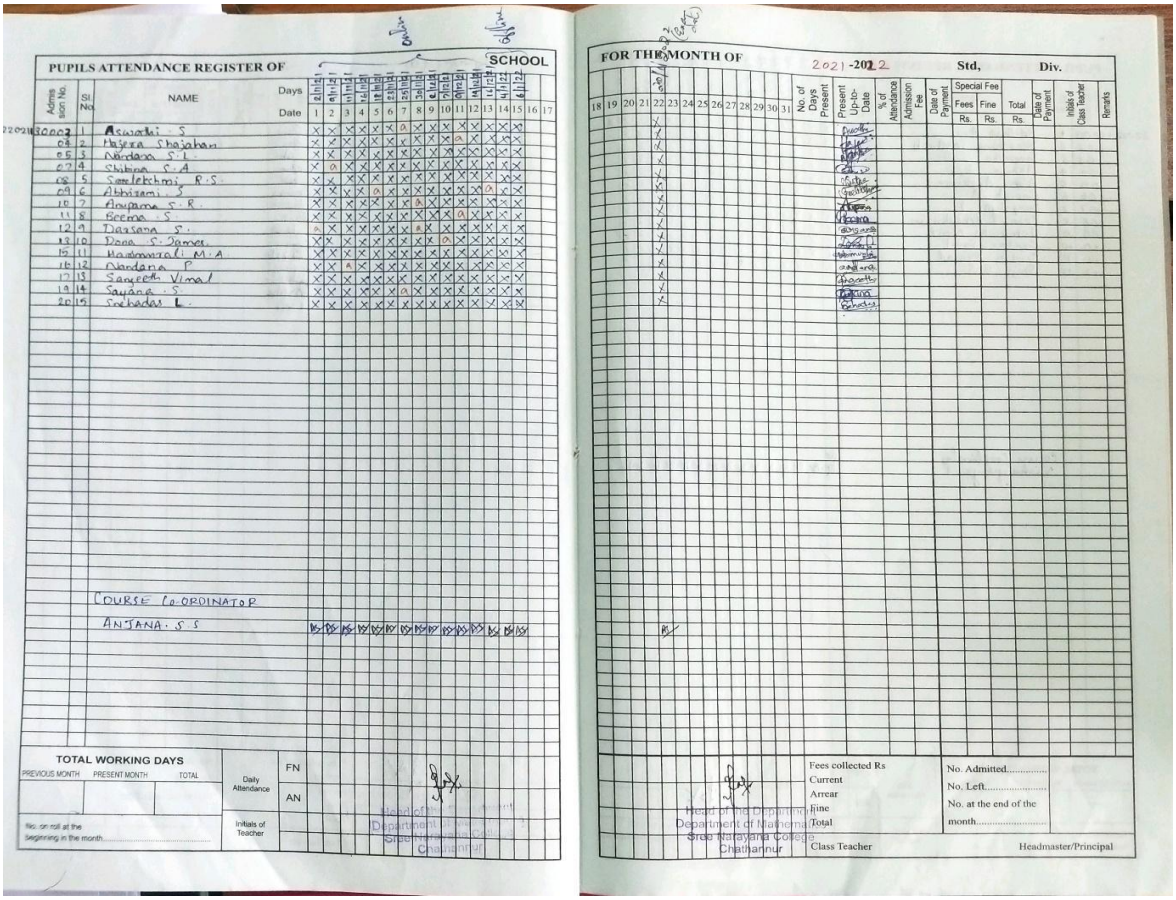
X:35 ,40,46,58,63,70,45,58,36,40,52,64,70,85,68,54,38,60,52,75

Y:80,85,80,92,95,98,100,82,72,81,91,83,110,76,91,95,82,95,110,85

(2*20=40)



A sample answer sheet



Attendance statement 2021-22

SREE NARAYANA COLLEGE
CHATHANNUR
DEPARTMENT OF MATHEMATICS

CERITIFICATE OF COMPLETION

This is to certify that Mr/Ms. Nandana P. I Bsc Mathematics
has participated and completed the College level Certificate Course on "INTRODUCTION TO R PROGRAMMING ***2021-22*** *" organized by Department of Mathematics, Sree Narayana College Chathannur.*

Coordinator
Anjana S.S

H.O.D
Dr. Rani Rajeevan

Principal

SREE NARAYANA COLLEGE CHATHANNUR

Department of Mathematics

Certificate Course on Introduction to R Programming

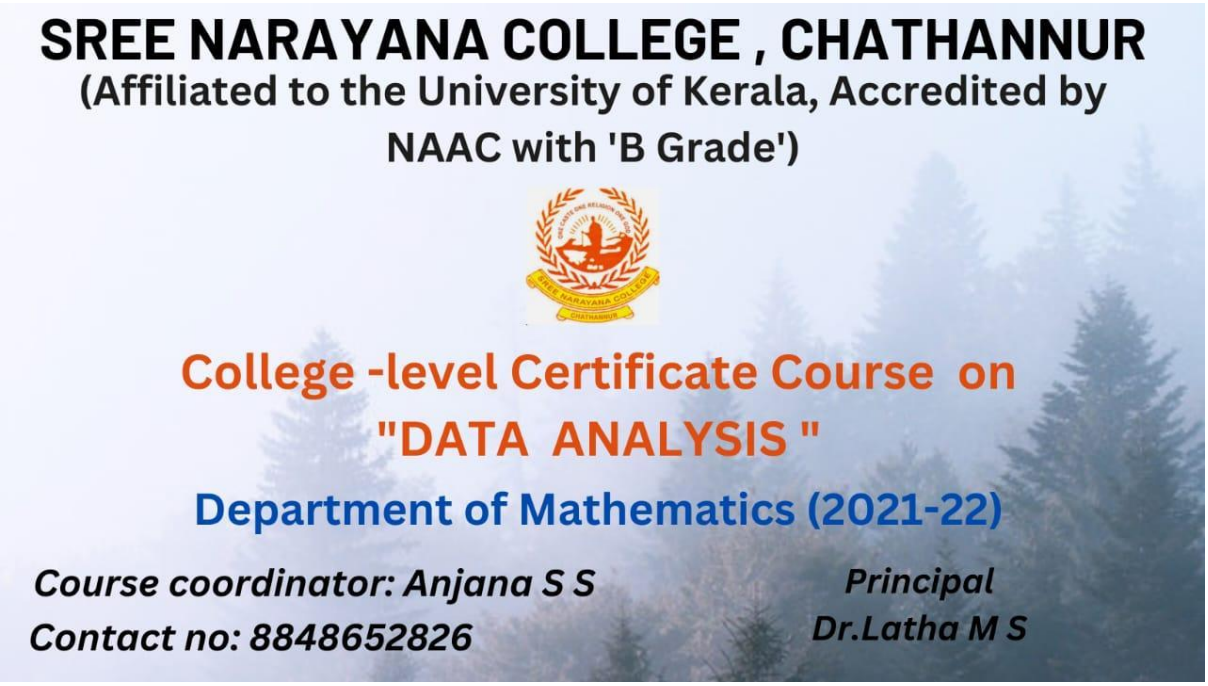
Report 2021-22

Introduction to R is a beginner-level course designed to teach the fundamentals programming language. R is a popular open source programming language used for statistical computing, data analysis and visualization . It provides wide range of statistical and graphical techniques, making it one of the most widely used languages for data analysis and research . R is used variety of industries, including finance , healthcare, marketing and education. It is commonly used for statistics analysis and predictive modelling and the data visualization. As a result R is a popular programming language for analysis and statistics. So in the current academic year we started our Certificate course in Introduction to R Programming on 02.11.2021. It was officially inaugurated by Dr. Latha M S Principal, S N College, Chathannur. Smt. Anjana S S, Faculty in Statistics has led the online classes from 02.11.2021 to 16.12.2021 and practical classes are taken on 4.1.2022 and 6.1.2022 and the examination was conducted on 20.01.2022 at the Computer lab. A total of 15 students were registered in the said programme. All of the students were completed the course successfully and course completion certificates were distributed to students.

Course Coordinator
Anjana S S

CERTIFICATE COURSE IN DATA ANALYSIS

During the academic year 2021-22, twenty students registered for the certificate course in Data Analysis, organized by the Department of Mathematics, Sree Narayana College, Chathannur. The theory classes and practical classes were handled by Smt. Anjana S S of the department. The topics taught in the course include bar diagram, Pie diagram, histogram, mean, median, mode, correlation and regression analysis. Lab sessions were also included in the course. The course was organized for the students who have got interest in the data analysis field. All of the registered students completed the course with good grades and course completion certificates were distributed to students.



Sree Narayana College, Chathannur

Department of Mathematics

Certificate Course Syllabus

Title of the Course: Data Analysis

Aim of the Course

1. This Course is aimed at familiarizing participants to the use of advanced excel formulas and features in intensive data analysis and equips the participants to the use of data analysis as a tool for their project work.
2. Data analysis helps teachers understand their students' learning abilities and challenges, and facilitates an ingrained cultural process that uses detailed inputs (information) to ensure optimal outputs

Objective of the course

- To teach the participants advanced Excel functions.

Outcome of the course

- Through the use of data analysis, **project managers can better meet stakeholder expectations—ultimately improving project operations and outcomes**. As a result, they're able to closely monitor and ensure high-quality deliverables. As a project manager, you'll find that data analysis plays a big part in your success

Sree Narayana College, Kollam

Department of Mathematics

Certificate Course Syllabus

Title of the Course: Data Analysis using Microsoft Excel

Contact Hours: 30 hr [15(T) + 15(P)]

Module 1 : Charts and Diagrams (5 hr)

1. Bar diagrams

   1.1 Methods for drawing different bar diagrams using Excel tools.

2. Pie diagrams and Scatter diagram

   2.1 Methods for drawing diagrams using Excel tools.

3. Histogram

   3.1 Methods to install Data analysis tool pack in Excel.

   3.2 Methods to construct frequency tables in Excel.

   3.3 Methods for drawing Histogram using Data analysis functions.

Module 2 : Descriptive Statistics (4hr)

1. Mean, Median, Mode

   1.1 Methods to find Mean, Median, Mode using Data analysis in Excel.

Module 3 : Correlation and Regression (3hr)

1. Correlation

   1.1 Methods for finding correlation using Data analysis tool pack.

2. Regression

   2.1 Methods to find regression using Data analysis tool pack.

REFERENCES

1. Dan Remenyi, George Onofrei, Joe English (2010). ***An Introduction to Statistics Using Microsoft Excel.*** **Academic Publishing Ltd., UK**

2. Neil J Salkind (2010). ***Excel Statistics, A Quick Guide.*** **SAGE Publication Inc. New Delhi**

3.Vijai Gupta (2002). ***Statistical Analysis with Excel.*** **VJ Books Inc. Canada**

SREE NARAYANA COLLEGE , CHATHANNUR

DEPARTMENT OF MATHEMATICS

CERTIFICATE COURSE EXAMINATION 2021-2022

DATA ANALYSIS

Time : 1 hr Max.marks :50

Answer any one question given below each carry 10 marks.

1.Represent the data using pi-diagram.

Items	Family
Food	142
clothing	84
House rent	105
Education	36
Fuel and light	41
Miscellaneous	42

2.The following table gives the distribution of the marks of 100 students in an examination.Represent the data by a histogram.

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70
No.of students	5	10	18	26	22	15	4

(1*10)

Answer any two question each carry 20 marks

3.Find all descriptive statistics measures of the following data.

226,256,309.49,909.82,839.20,323.36,71.89,72.63,459.24,335.86,550.86,9.43,

773.58,775.15,799.68,72.82,178.99,631.99,814.08,580.00,805.05,329.81,30.58, 383.62,616.35,569.57,675.10,352.34

4.The following table shows age and blood pressure of 20 persons. Calculate correlation coefficient.

X:35 ,40,46,58,63,70,45,58,36,40,52,64,70,85,68,54,38,60,52,75

Y:80,85,80,92,95,98,100,82,72,81,91,83,110,76,91,95,82,95,110,85

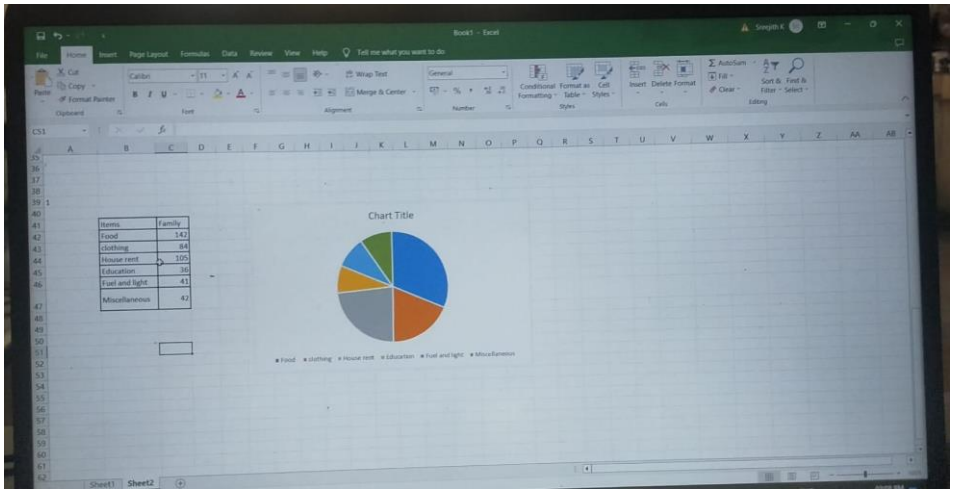
5.Three samples below have been obtained from normal populations with equal variances.Test the hypothesis that the population means are equal.(α=.05)

Sample I : 12 15 8 11 9

Sample II : 8 12 13 9 10

Sample III : 13 11 8 9 12

(2*20=40)

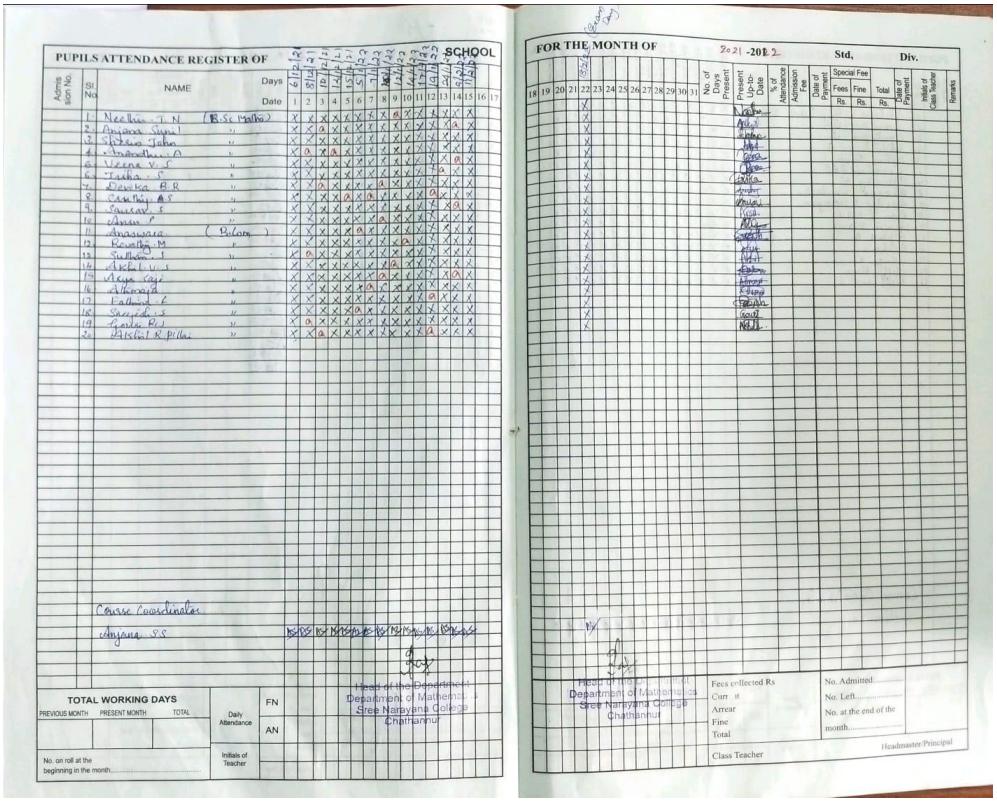


Items	Family
Food	142
clothing	84
House rent	105
Education	36
Fuel and light	41
Miscellaneous	47

Chart Title

Food clothing House rent Education Fuel and light Miscellaneous

A sample answer sheet



PUPILS ATTENDANCE REGISTER OF ____ SCHOOL

FOR THE MONTH OF 2021-2022 Std, Div.

Course Coordinator

Head of the Department
Department of Mathematics
Sree Narayana College
Chathannur

TOTAL WORKING DAYS

PREVIOUS MONTH | PRESENT MONTH | TOTAL

Daily Attendance FN AN

No. on roll at the beginning in the month.....

Initials of Teacher

Fees collected Rs
Curr at
Arrear
Fine
Total

No. Admitted.....
No. Left.....
No. at the end of the month.....

Class Teacher

Headmaster/Principal

Attendance statement 2021-22

SREE NARAYANA COLLEGE CHATHANNUR

DEPARTMENT OF MATHEMATICS

CERITIFICATE OF COMPLETION

This is to certify that Mr/Ms Fathima L . III Bcom

has participated and completed the College level Certificate Course on "DATA ANALYSIS 2021-22" organized by Department of Mathematics, Sree Narayana College Chathannur.

SREE NARAYANA COLLEGE CHATHANNUR KOLLAM PIN - 691579 KRAMICODE, P.O.

Coordinator
Anjana S.S

H.O.D
Dr. Rani Rajeevan

Principal

SREE NARAYANA COLLEGE CHATHANNUR

Department of Mathematics

Certificate Course on Data Analysis

Report 2021--22

Data analysis is the process of systematically applying statistical and logical methods and techniques to describe and illustrate , condense and recap, and evaluate data. Businesses rely on analytics processes and tools to extract insights that support strategic and operational decision-making. Nowadays, data is collected at various stages of processes and transactions, which has the potential to significantly improve the way we work. However, to fully realize the value of data analysis, this data must be analyzed in order to gain valuable insights into improving products and services. So in the current academic year we started our Certificate course in Data Analysis on 06.12.2021. It was officially inaugurated by Dr. Latha M S, Principal, S N College, Chathannur. Smt. Anjana S S, Faculty in Statistics has led the classes from 06/12/2021 to 11/02/2022 and the examination was conducted on 18/02/2022 at the Computer lab. A total of 20 students were registered in the said programme. All of the students were completed the course successfully and course completion certificates were distributed to students.

Anjana

Course Coordinator

Anjana S S

2020-21
CERTIFICATE COURSE -I
INTRODUCTION TO R PROGRAMMING

During the academic year 2020-21, fifteen students registered for the certificate course in an Introduction to R Programming , organized by the Department of Mathematics, Sree Narayana College, Chathannur. The theory classes and practical classes were handled by Smt. Anjana S S of the department. The topics taught in the course include bar diagram, Pie diagram, histogram, mean, median, mode, correlation and regression analysis. Lab sessions were also included in the course. The course was organized for the students who have got an idea about the importance of R Programming in real world . The students completed the course with good grades and course completion certificates were distributed to students.

Sree Narayana College, Kollam

Department of Mathematics

Certificate Course -II Syllabus

Title of the Course: Introduction to R PROGRAMMING

Aim of the Course

This Course is aimes at building a skill-set to tackle real-world data analysis. It is a guide to understand how to program in R and how to use R for effective data analysis.

Objective of the course

- The basics of statistical computing and data analysis
- How to use R for analytical programming

Outcome of the course

- After competing this course, you will be able to explain critical R programming concept. Through the use of R programming, analyses data and generate reports based on the data. As a result you can apply various concepts to write programs in R.

Sree Narayana College Chathannur

Department of Mathematics

Certificate Course - Syllabus

Title of the Course: Introduction To R Programming

Contact Hours: 30 hr [15(T) + 15(P)]

Module 1 : Charts and Diagrams (5 hr)

1. Bar diagrams

   1.1 Methods for drawing different bar diagrams using R programming.

2. Pie diagrams and Scatter diagram

   2.1 Methods for drawing diagrams using R programming.

3. Histogram

   3.1 Methods to install R studio.

   3.2 Methods to construct frequency tables using R.

   3.3 Methods for drawing Histogram using R.

Module 2 : Descriptive Statistics (4hr)

1. Mean, Median, Mode

   1.1 Methods to find Mean, Median, Mode using R.

Module 3 : Correlation and Regression (3hr)

1. Correlation

   1.1 Methods for finding correlation using R.

2. Regression

2.1 Methods to find regression using R.

Module 4: ANOVA using R(3hr)

1. One way ANOVA

   1.1 Methods for finding ANOVA single factor (one way ANOVA).

   1.2 Result analysis for One way ANOVA.

2. Two way ANOVA

   2.1 Methods to find two way ANOVA with and without replications.

   2.2 Result analysis for two way ANOVA.

REFERENCES

1. **Dalgaard. P(2008), Introductory Statistics with R, Springer, Newyork.**
2. **Lander J P(2017), R for everyone 2/e. Addison-wesley, Professional, U.S**
3. **Michael J Crawley (2013), The R Book, 2/e, Wiley, Newyork.**

SREE NARAYANA COLLEGE , KOLLAM

DEPARTMENT OF MATHEMATICS

CERTIFICATE COURSE EXAMINATION 2020-2021

INTRODUCTION TO R PROGRAMMING

Time : 1 hr Max. marks :50

Answer any one question given below each carry 10 marks.

1.Represent the data using suitable diagram

Items	Family I	Family II
Food	142	118
clothing	84	65
House rent	105	110
Education	36	45
Fuel and light	41	30
Miscellaneous	42	40

2.The following table gives the distribution of the marks of 100 students in an examination. Represent the data by a histogram.

Marks	0-10	10-30	30-50	50-80	80-100
No.of students	12	10	18	24	21

(1*10=10)

Answer any two question each carry 20 marks

3.Find all descriptive statistics measures of the following data.

222, 350, 163, 27.9, 66.5, 101, 134, 205, 63, 92, 98.3, 415, 78, 91.5,

33.6, 121, 139, 23.5, 69, 141, 85, 72, 153, 66, 74.6, 78.3, 57, 84, 48, 28.3,

60, 49.2, 51.6, 99

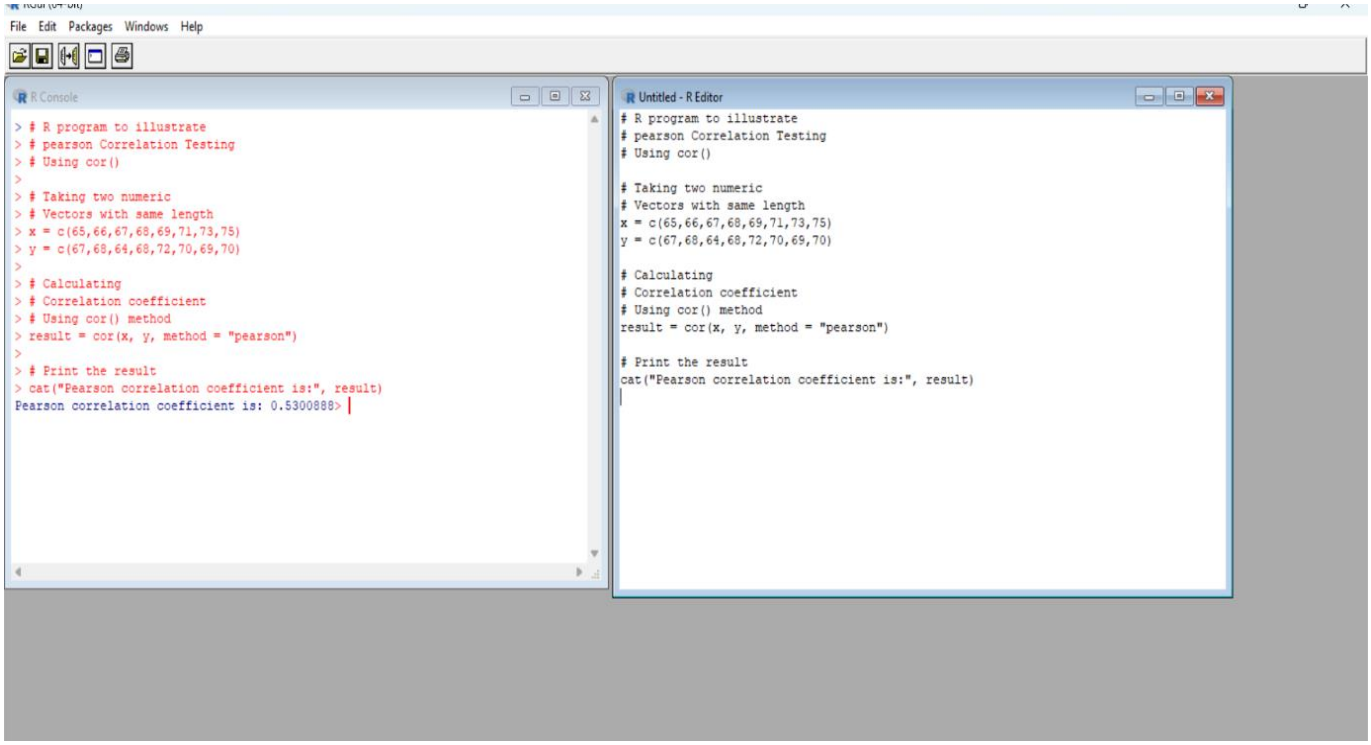
4.From past observations we have the following figures showing the relationship between heights of fathers and sons.

Height of father : 65,66,67,68,69,71,73

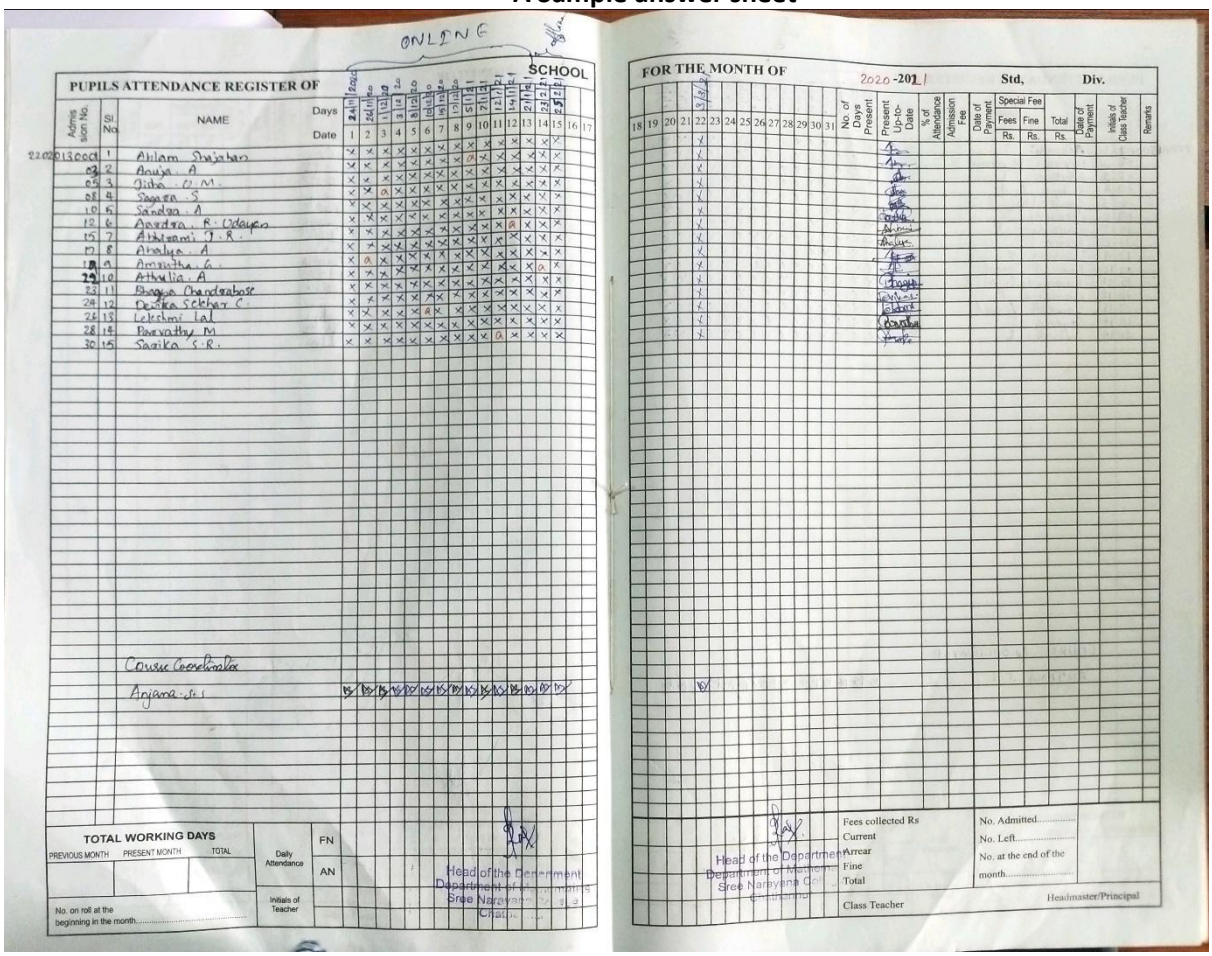
Height of son : 67,68,64,68,72,70,69,70

Obtain the correlation coefficient.

(2*20=40)



A Sample answer sheet



Attendance statement 2020-21

SREE NARAYANA COLLEGE
CHATHANNUR

DEPARTMENT OF MATHEMATICS

CERITIFICATE OF COMPLETION

This is to certify that Mr/Ms. Parvathy M. | Bsc Mathematics

has participated and completed the College level Certificate Course on "INTRODUCTION TO R PROGRAMMING **2020-21"** *organized by Department of Mathematics, Sree Narayana College Chathannur.*

SREE NARAYANA COLLEGE CHATHANNUR KOLLAM PIN-690529 KARAMCODE

Coordinator
Anjana. S. S

H.O.D
Dr. Rani Rajeevan

Principal

SREE NARAYANA COLLEGE CHATHANNUR

Department of Mathematics

Certificate Course on Introduction to R Programming

Report 2020-21

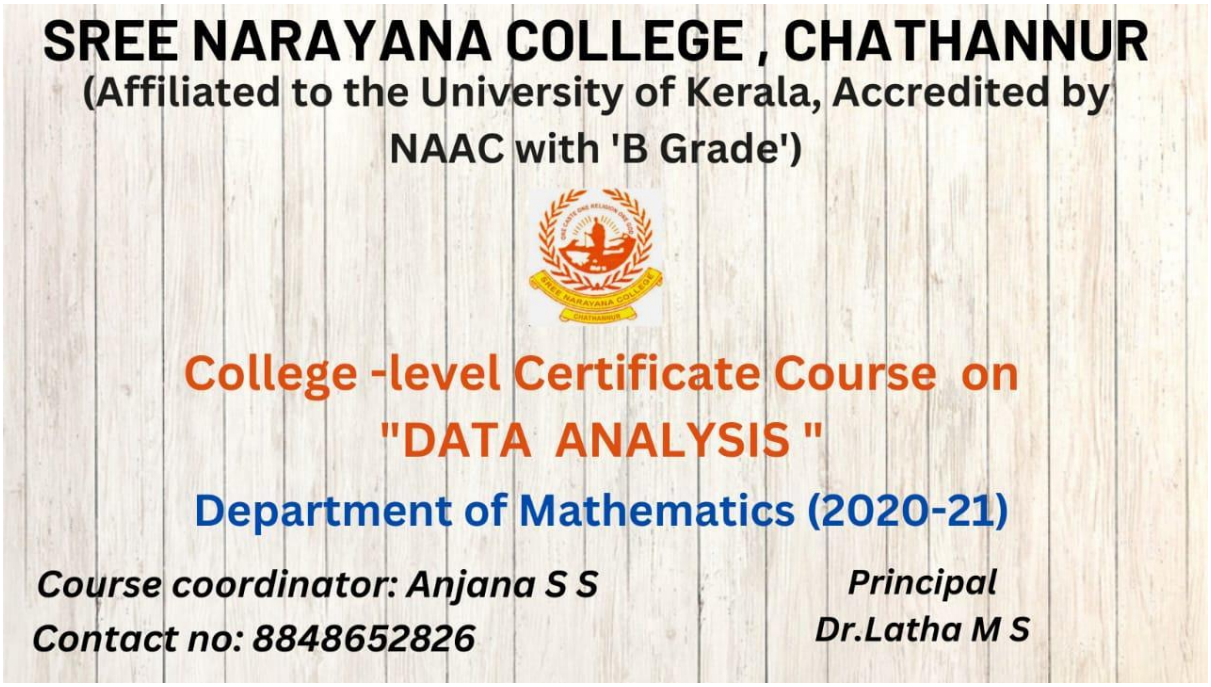
R programming is an interpreted programming widely used to analyze statistical information and a graphical representation R has become one of the most popular programming languages in the industries. R is a popular open source programming language used for statistical computing, data analysis and visualization . It provides wide range of statistical and graphical techniques, making it one of the most widely used languages for data analysis and research . R is used variety of industries, including finance , healthcare, marketing and education. It is commonly used for statistics analysis and predictive modelling and the data visualization. As a result R is a popular programming language for analysis and statistics. So in the current academic year we started our Certificate course in Introduction to R Programming on 24.11.2020. It was officially inaugurated by Dr. C S Laths M S Principal, S N College, Chathannur. Due to the covid pandemic the classes are conducted as online and offline. Smt. Anjana S S, Faculty in Statistics has led the online classes from 24.11.2020 to 21.01.2021 and the offline classes are taken on 21.01.2021 & 23.01.2021 . The examination was conducted on 03.03.2021 at the Computer lab. A total of 15 students were registered in the said programme. All of the students were completed the course successfully and course completion certificates were distributed to students.

Course Coordinator

Anjana S S

CERTIFICATE COURSE – II
DATA ANALYSIS

During the academic year 2020-21 , 23 students registered for the s certificate course in Data Analysis, organized by the Department of Mathematics, Sree Narayana College, Chathannur. The theory classes and practical classes were handled by Smt. Anjana S S of the department. The topics taught in the course include bar diagram, Pie diagram, histogram, mean, median, mode, correlation and regression analysis. Lab sessions were also included in the course. The course was organized for the students who have got interest in the data analysis field. The students completed the course with good grades and course completion certificates were distributed to students.



Sree Narayana College, Chathannur

Department of Mathematics

Certificate Course Syllabus

Title of the Course: Data Analysis

Aim of the Course

1. This Course is aimed at familiarizing participants to the use of advanced excel formulas and features in intensive data analysis and equips the participants to the use of data analysis as a tool for their project work.
2. Data analysis helps teachers understand their students' learning abilities and challenges, and facilitates an ingrained cultural process that uses detailed inputs (information) to ensure optimal outputs

Objective of the course

- To teach the participants advanced Excel functions.

Outcome of the course

- Through the use of data analysis, **project managers can better meet stakeholder expectations—ultimately improving project operations and outcomes**. As a result, they're able to closely monitor and ensure high-quality deliverables. As a project manager, you'll find that data analysis plays a big part in your success

Sree Narayana College, Kollam

Department of Mathematics

Certificate Course Syllabus

Title of the Course: Data Analysis using Microsoft Excel

Contact Hours: 30 hr [15(T) + 15(P)]

Module 1 : Charts and Diagrams (5 hr)

1. Bar diagrams

   1.1 Methods for drawing different bar diagrams using Excel tools.

2. Pie diagrams and Scatter diagram

   2.1 Methods for drawing diagrams using Excel tools.

3. Histogram

   3.1 Methods to install Data analysis tool pack in Excel.

   3.2 Methods to construct frequency tables in Excel.

   3.3 Methods for drawing Histogram using Data analysis functions.

Module 2 : Descriptive Statistics (4hr)

1. Mean, Median, Mode

   1.1 Methods to find Mean, Median, Mode using Data analysis in Excel.

Module 3 : Correlation and Regression (3hr)

1. Correlation

   1.1 Methods for finding correlation using Data analysis tool pack.

2. Regression

   2.1 Methods to find regression using Data analysis tool pack.

REFERENCES

1. Dan Remenyi, George Onofrei, Joe English (2010). *An Introduction to Statistics Using Microsoft Excel.* Academic Publishing Ltd., UK

2. Neil J Salkind (2010). *Excel Statistics, A Quick Guide.* SAGE Publication Inc. New Delhi

3.Vijai Gupta (2002). *Statistical Analysis with Excel.* VJ Books Inc. Canada

SREE NARAYANA COLLEGE , KOLLAM

DEPARTMENT OF MATHEMATICS

CERTIFICATE COURSE EXAMINATION 2020-2021

DATA ANALYSIS USING MICROSOFT EXCEL

Time : 1 hr
max.mark :50

Answer any one question given below each carry 10 marks.

1.Represent the data using suitable diagram

Items	Family I	Family II
Food	142	118
clothing	84	65
House rent	105	110
Education	36	45
Fuel and light	41	30
Miscellaneous	42	40

2.The following table gives the distribution of the marks of 100 students in an examination.Represent the data by a histogram.

Marks	0-10	10-30	30-50	50-80	80-100
No.of students	12	10	18	24	21

(1*10=10)

Answer any two question each carry 20 marks

3.Find all descriptive statistics measures of the following data.

222, 350, 163, 27.9, 66.5, 101, 134, 205, 63, 92, 98.3, 415, 78, 91.5,

33.6, 121, 139, 23.5, 69, 141, 85, 72, 153, 66, 74.6, 78.3, 57, 84, 48, 28.3,

60, 49.2, 51.6, 99

4.From past observations we have the following figures showing the relationship between heights of fathers and sons.

Height of father : 65,66,67,68,69,71,73

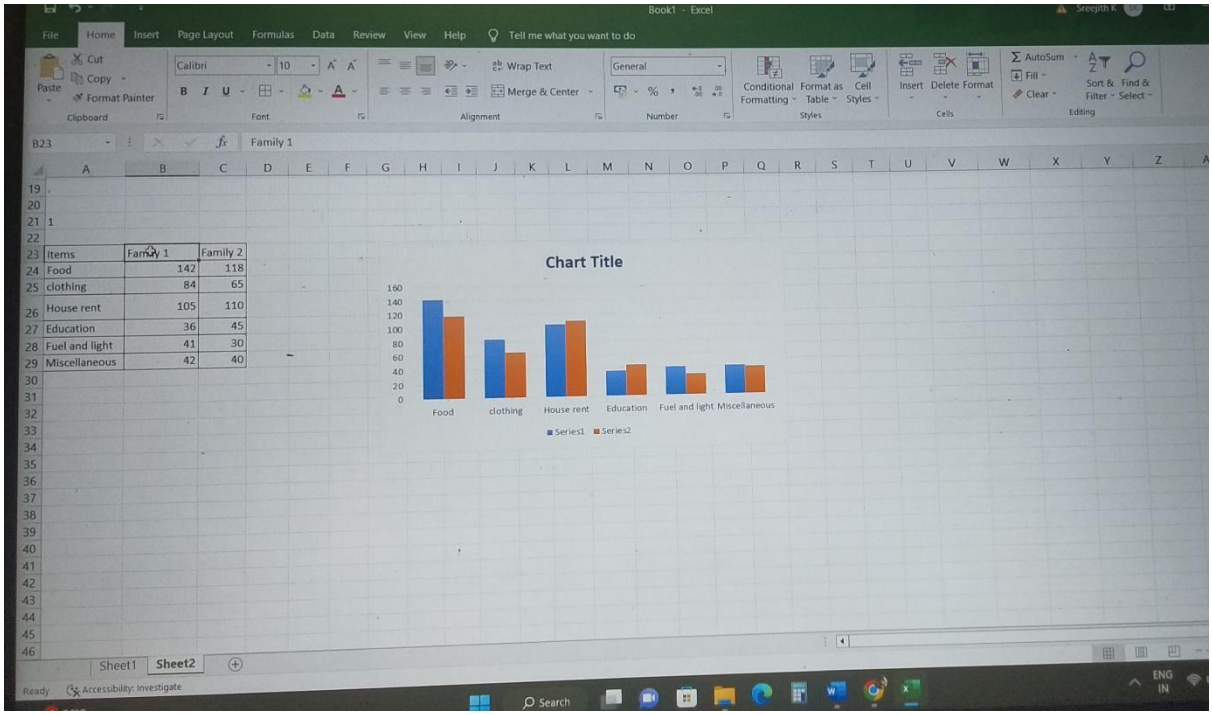
Height of son : 67,68,64,68,72,70,69,70

Obtain the correlation coefficient.

5.Form the regression equations for the following data

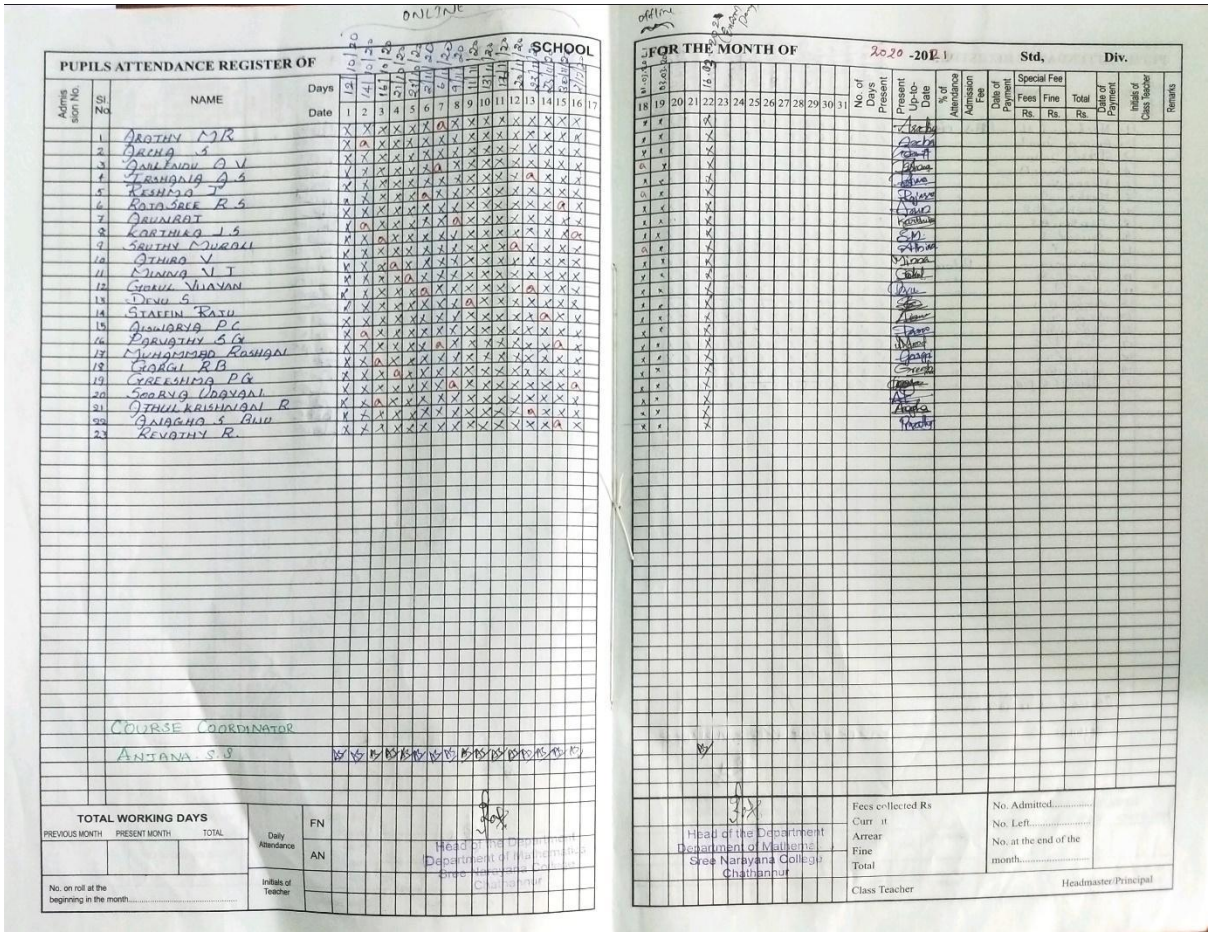
X :	10	15	9	12	18	16	21
Y :	9	12	11	8	10	13	18

(2*20=40)



Items	Family 1	Family 2
Food	142	118
clothing	84	65
House rent	105	110
Education	36	45
Fuel and light	41	30
Miscellaneous	42	40

A Sample answer sheet



Attendance statement 2020-21

SREE NARAYANA COLLEGE CHATHANNUR

DEPARTMENT OF MATHEMATICS

CERITIFICATE OF COMPLETION

This is to certify that Mr/Ms Sruthy Murali, III Bsc Mathematics

has participated and completed the College level Certificate Course on "DATA ANALYSIS 2020-21" organized by Department of Mathematics, Sree Narayana College Chathannur.

Coordinator
Anjana. S. S

H.O.D
Dr. Rani Rajeevan

Principal

SREE NARAYANA COLLEGE CHATHANNUR

Department of Mathematics

Certificate Course on Data Analysis

Report 2020-21

Data analysis is the science of examining data to conclude the information to make decisions . It is used in many industries regardless of the branch. Businesses rely on analytics processes and tools to extract insights that support strategic and operational decision-making. Nowadays, data is collected at various stages of processes and transactions, which has the potential to significantly improve the way we work. However, to fully realize the value of data analysis, this data must be analyzed in order to gain valuable insights into improving products and services. So in the current academic year we started our Certificate course in Data Analysis on. It was officially inaugurated by Dr. Latha M S, Principal, S N College, Chathannur. Due to the pandemic the theory classes are taken through online mode and the practical classes are taken after the lockdown. Smt. Anjana S S, Faculty in Statistics has led the classes from 12/10/2020 to 2/12/2020 and the examination was conducted on 16/03/2021 at the Computer lab. A total of 23 students were registered in the said programme. All of the students were completed the course successfully and course completion certificates were distributed to students.

Anjana

Course Coordinator

Anjana S S

2019-20

CERTIFICATE COURSE IN INTRODUCTION TO R PROGRAMMING

During the academic year 2019-20, 15 students registered for the certificate course in An Introduction to R Programming , organized by the Department of Mathematics, Sree Narayana College, Chathannur. The theory classes and practical classes were handled by Smt. Karthika V S of the department. The topics taught in the course include bar diagram, Pie diagram, histogram, mean, median, mode, correlation and regression analysis. Lab sessions were also included in the course. The course was organized for the students who have got an idea about the importance of R Programming in real world . The students completed the course with good grades and course completion certificates were distributed to students.

Sree Narayana College, Kollam

Department of Mathematics

Certificate Course -II Syllabus

Title of the Course: Introduction to R PROGRAMMING

Aim of the Course

This Course is aimes at building a skill-set to tackle real-world data analysis. It is a guide to understand how to program in R and how to use R for effective data analysis.

Objective of the course

- The basics of statistical computing and data analysis
- How to use R for analytical programming

Outcome of the course

- After competing this course, you will be able to explain critical R programming concept. Through the use of R programming, analyses data and generate reports based on the data. As a result you can apply various concepts to write programs in R.

Sree Narayana College Chathannur

Department of Mathematics

Certificate Course - Syllabus

Title of the Course: Introduction To R Programming

Contact Hours: 30 hr [15(T) + 15(P)]

Module 1 : Charts and Diagrams (5 hr)

1. Bar diagrams

   1.1 Methods for drawing different bar diagrams using R programming.

2. Pie diagrams and Scatter diagram

   2.1 Methods for drawing diagrams using R programming.

3. Histogram

   3.1 Methods to install R studio.

   3.2 Methods to construct frequency tables using R.

   3.3 Methods for drawing Histogram using R.

Module 2 : Descriptive Statistics (4hr)

1. Mean, Median, Mode

   1.1 Methods to find Mean, Median, Mode using R.

Module 3 : Correlation and Regression (3hr)

1. Correlation

   1.1 Methods for finding correlation using R.

2. Regression

2.1 Methods to find regression using R.

Module 4: ANOVA using R(3hr)

1. One way ANOVA

   1.1 Methods for finding ANOVA single factor (one way ANOVA).

   1.2 Result analysis for One way ANOVA.

2. Two way ANOVA

   2.1 Methods to find two way ANOVA with and without replications.

   2.2 Result analysis for two way ANOVA.

REFERENCES

1. **Dalgaard. P(2008), Introductory Statistics with R, Springer, Newyork.**
2. **Lander J P(2017), R for everyone 2/e. Addison-wesley, Professional, U.S**
3. **Michael J Crawley (2013), The R Book, 2/e, Wiley, Newyork.**

SREE NARAYANA COLLEGE , KOLLAM

DEPARTMENT OF MATHEMATICS

CERTIFICATE COURSE EXAMINATION 2019-2020

INTRODUCTION TO R PROGRAMMING

Time : 1 hr. Max.mark :50

Answer any one question given below each carry 10 marks.

1.Represent the data using pi-diagram.

Items	Family
Food	142
clothing	84
House rent	105
Education	36
Fuel and light	41
Miscellaneous	42

2.The following table gives the distribution of the marks of 100 students in an examination. Represent the data by a histogram.

Class	10-20	20-30	30-50	50-60	60-80	80-100
Frequency	15	10	12	11	28	14

(1*10=10)

Answer any two question each carry 20 marks

3.Find all descriptive statistics measures of the following data.

226,256,309.49,909.82,839.20,323.36,71.89,72.63,459.24,335.86,550.86, 9.43,

773.58,775.15,799.68,72.82,178.99,631.99,814.08,580.00,805.05,329.81, 30.58, 383.62,616.35,569.57,675.10,352.34

4.The following table shows age and blood pressure of 20 persons. Calculate correlation coefficient.

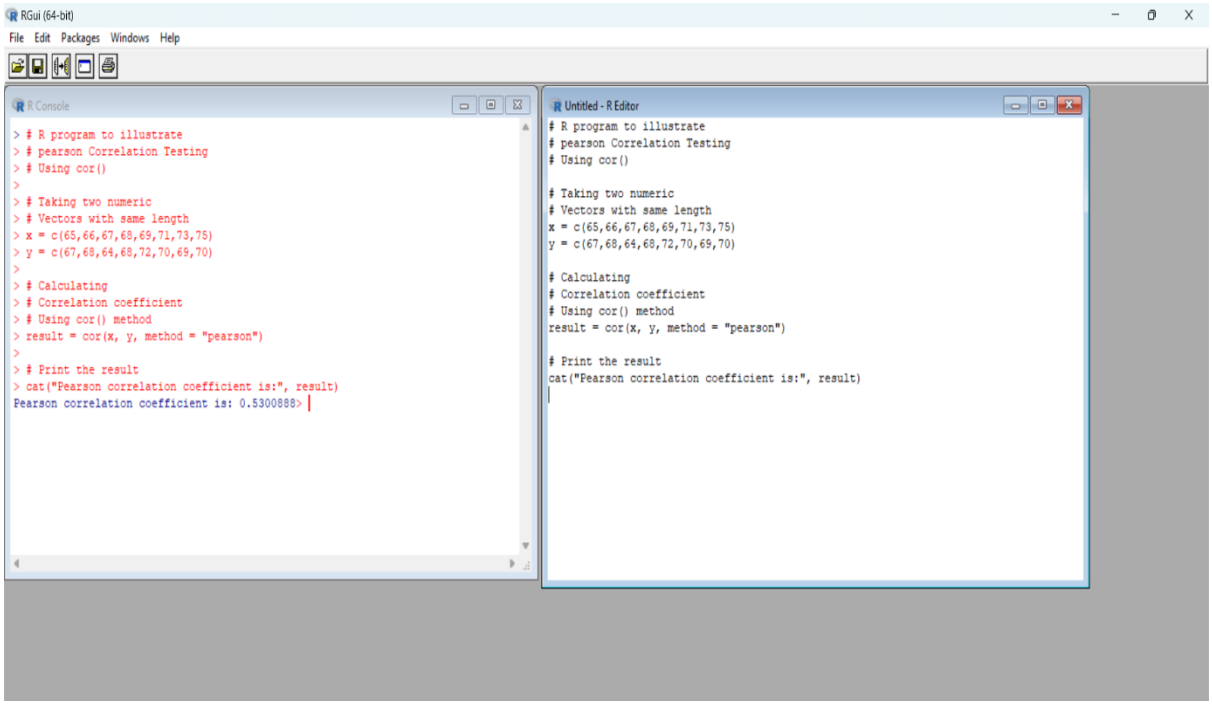
X:35 ,40,46,58,63,70,45,58,36,40,52,64,70,85,68,54,38,60,52,75

Y:80,85,80,92,95,98,100,82,72,81,91,83,110,76,91,95,82,95,110,85

5. Obtain the regression equation of x on y and y on x for the following data and also estimate y at x =10

X	:	12	15	8	11	9
Y	:	8	12	13	9	10

(2*20=40)



A Sample answer sheet

Attendance statement 2019-20

SREE NARAYANA COLLEGE
CHATHANNUR
DEPARTMENT OF MATHEMATICS
CERITIFICATE OF COMPLETION

This is to certify that Mr/Ms. Athira R. | Bsc Mathematics
has participated and completed the College level Certificate Course on "INTRODUCTION TO R PROGRAMMING ***2019-20"*** *organized by Department of Mathematics, Sree Narayana College Chathannur.*

Coordinator
Anjana S S

H.O.D
Dr. Rani Rajeevan

Principal

SREE NARAYANA COLLEGE CHATHANNUR

Department of Mathematics

Certificate Course on Introduction to R Programming

Report 2019-20

R is often used for statistical computing and graphical presentation to analyze and visualize data. R is a popular open source programming language used for statistical computing, data analysis and visualization . It provides wide range of statistical and graphical techniques, making it one of the most widely used languages for data analysis and research . R is used variety of industries, including finance , healthcare, marketing and education. It is commonly used for statistics analysis and predictive modelling and the data visualization. As a result R is a popular programming language for analysis and statistics. So in the current academic year we started our Certificate course in Introduction to R Programming on 05.11.2019. It was officially inaugurated by Dr. C S Subhash Chandran Principal, S N College, Chathannur. Smt. Anjana S S, Faculty in Statistics has led the classes from 05.11.2019 to 14.01.2020 and the examination was conducted on 21.01.2020 at the Computer lab. A total of 15 students were registered in the said programme. All of the students were completed the course successfully and course completion certificates were distributed to students.

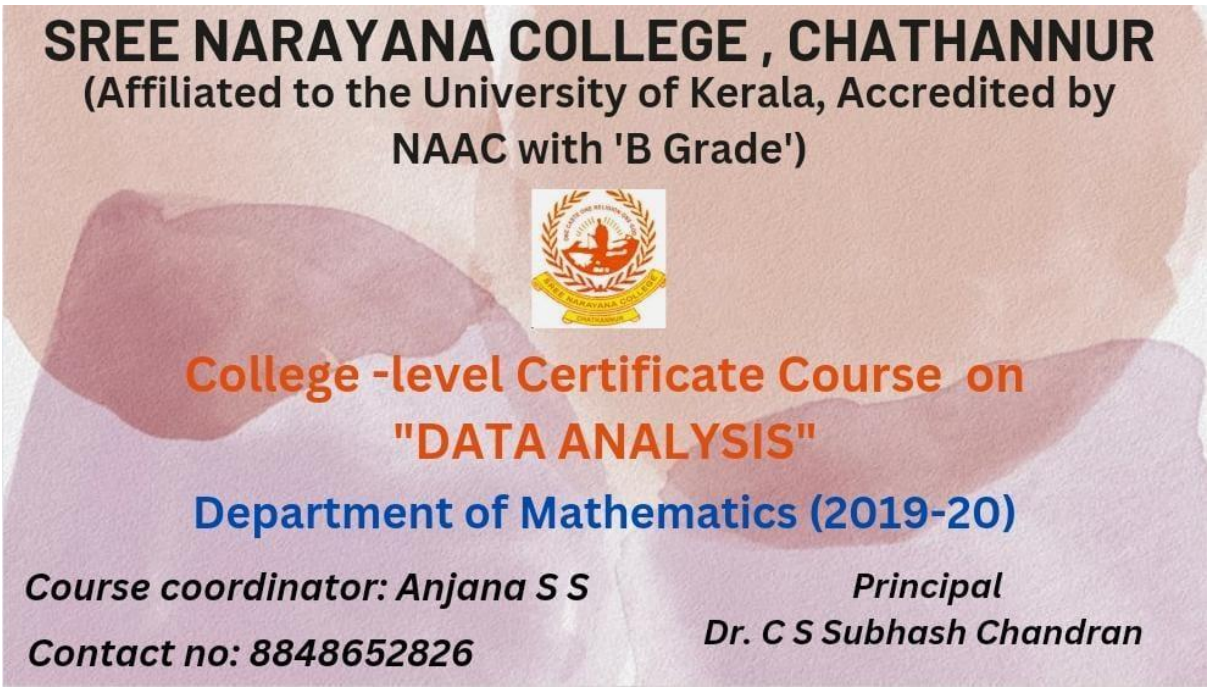
Course Coordinator

Anjana S S

CERTIFICATE COURSE IN

DATA ANALYSIS

During the academic year 2019-20 , 23 students registered for the s certificate course in Data Analysis, organized by the Department of Mathematics, Sree Narayana College, Chathannur. The theory classes and practical classes were handled by Smt. Anjana S S of the department. The topics taught in the course include bar diagram, Pie diagram, histogram, mean, median, mode, correlation and regression analysis. Lab sessions were also included in the course. The course was organized for the students who have got interest in the data analysis field. The students completed the course with good grades and course completion certificates were distributed to students.



Sree Narayana College, Chathannur

Department of Mathematics

Certificate Course Syllabus

Title of the Course: Data Analysis

Aim of the Course

1. This Course is aimed at familiarizing participants to the use of advanced excel formulas and features in intensive data analysis and equips the participants to the use of data analysis as a tool for their project work.
2. Data analysis helps teachers understand their students' learning abilities and challenges, and facilitates an ingrained cultural process that uses detailed inputs (information) to ensure optimal outputs

Objective of the course

- To teach the participants advanced Excel functions.

Outcome of the course

- Through the use of data analysis, **project managers can better meet stakeholder expectations—ultimately improving project operations and outcomes**. As a result, they're able to closely monitor and ensure high-quality deliverables. As a project manager, you'll find that data analysis plays a big part in your success

Sree Narayana College, Kollam

Department of Mathematics

Certificate Course Syllabus

Title of the Course: Data Analysis using Microsoft Excel

Contact Hours: 30 hr [15(T) + 15(P)]

Module 1 : Charts and Diagrams (5 hr)

1. Bar diagrams

   1.1 Methods for drawing different bar diagrams using Excel tools.

2. Pie diagrams and Scatter diagram

   2.1 Methods for drawing diagrams using Excel tools.

3. Histogram

   3.1 Methods to install Data analysis tool pack in Excel.

   3.2 Methods to construct frequency tables in Excel.

   3.3 Methods for drawing Histogram using Data analysis functions.

Module 2 : Descriptive Statistics (4hr)

1. Mean, Median, Mode

   1.1 Methods to find Mean, Median, Mode using Data analysis in Excel.

Module 3 : Correlation and Regression (3hr)

1. Correlation

   1.1 Methods for finding correlation using Data analysis tool pack.

2. Regression

   2.1 Methods to find regression using Data analysis tool pack.

REFERENCES

1. Dan Remenyi, George Onofrei, Joe English (2010). *An Introduction to Statistics Using Microsoft Excel.* Academic Publishing Ltd., UK

2. Neil J Salkind (2010). *Excel Statistics, A Quick Guide.* SAGE Publication Inc. New Delhi

3.Vijai Gupta (2002). *Statistical Analysis with Excel.* VJ Books Inc. Canada

SREE NARAYANA COLLEGE , KOLLAM

DEPARTMENT OF MATHEMATICS

CERTIFICATE COURSE EXAMINATION 2019-2020

DATA ANALYSIS USING MICROSOFT EXCEL

Time : 1 hr. Max.mark :50

Answer any one question given below each carry 10 marks.

1.Represent the data using pi-diagram.

Items	Family
Food	142
clothing	84
House rent	105
Education	36
Fuel and light	41
Miscellaneous	42

2.The following table gives the distribution of the marks of 100 students in an examination. Represent the data by a histogram.

Class	10-20	20-30	30-50	50-60	60-80	80-100
Frequency	15	10	12	11	28	14

(1*10=10)

Answer any two question each carry 20 marks

3.Find all descriptive statistics measures of the following data.

226,256,309.49,909.82,839.20,323.36,71.89,72.63,459.24,335.86,550.86, 9.43,

773.58,775.15,799.68,72.82,178.99,631.99,814.08,580.00,805.05,329.81, 30.58, 383.62,616.35,569.57,675.10,352.34

4.The following table shows age and blood pressure of 20 persons. Calculate correlation coefficient.

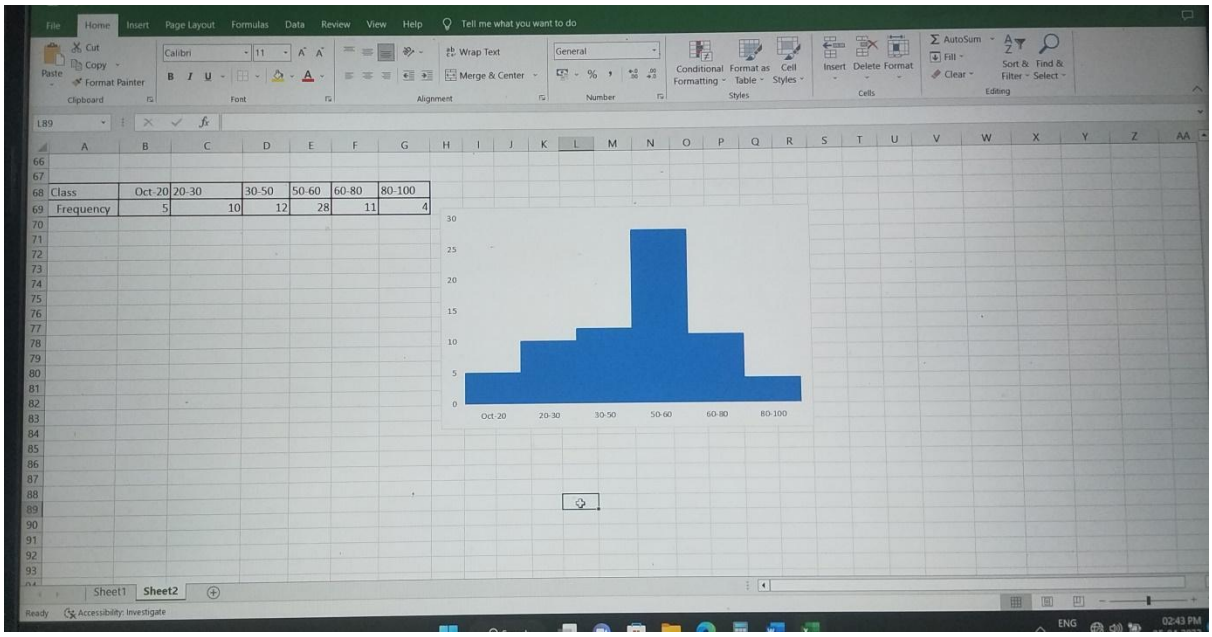
X:35 ,40,46,58,63,70,45,58,36,40,52,64,70,85,68,54,38,60,52,75

Y:80,85,80,92,95,98,100,82,72,81,91,83,110,76,91,95,82,95,110,85

5. Obtain the regression equation of x on y and y on x for the following data and also estimate y at x =10

X	:	12	15	8	11	9
Y	:	8	12	13	9	10

(2*20=40)



A sample answer sheet

PUPILS ATTENDANCE REGISTER OF SCHOOL

FOR THE MONTH OF 2019-2020 Std, Div.

Admission No.	Sl. No.	NAME	Days / Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	1	Akhara . S. Dev		x	x	x	x	x	a	x	x	x	x	x	x	x	x	x		
	2	Aswathy . S		x	x	x	a	x	x	x	x	x	x	x	x	x	x	x		
	3	Devu . C. H		x	x	x	x	x	a	x	x	x	a	x	x	x	a	x		
	4	Hraiden . H		x	a	x	x	x	x	x	x	x	x	x	x	x	x	x		
	5	Manasa . M		x	x	x	x	x	a	x	x	x	x	x	x	a	x	x		
	6	Chanchal . M . Pradeeth		x	x	x	x	a	x	a	x	x	x	x	x	x	x	x		
	7	Rakhimol . R		x	x	x	x	x	a	x	x	x	x	x	x	a	x	x		
	8	Maamina . A		x	a	x	x	x	x	x	x	a	x	x	x	x	x	x		
	9	Vishnu Raj . P		x	a	x	x	x	x	a	x	x	x	x	x	x	x	x		
	10	Neethu . M		x	x	a	x	x	x	x	x	x	x	x	x	a	x	x		
	11	Vishal . Suresh		x	x	x	x	x	x	a	x	x	x	x	x	x	x	x		
	12	Sanika . Raj . S		a	x	x	x	x	x	x	x	x	x	x	a	x	x	a		
	13	Anagha . Raj		x	x	x	x	a	x	x	a	x	x	a	x	x	x	x		
	14	Shana . S		x	a	x	x	x	x	x	x	x	x	x	x	x	x	x		
	15	Thanburu . S. R		x	x	x	a	x	x	x	x	x	x	x	x	x	x	x		
	16	Sruthy . J. P		x	x	x	x	x	x	x	x	a	x	x	x	x	x	a		
	17	Anantha padmanabhan . S		x	x	a	x	x	x	x	x	x	x	x	x	x	x	a		
	18	Ankitha . P		x	x	x	x	a	x	x	x	x	x	x	x	x	x	x		
	19	Aadhwaithy . Mohan		x	x	x	a	x	a	x	x	a	x	x		x	x	x		
	20	Gopika . Vijay		x	x	x	x	x	a	x	x	x	x	x	x	x	x	x		
	21	Muhammed . A Zhanudheen		x	x	x	x	x	x	a	x	x	x	x	x	x	x	x		
	22	Nandu Prasad		x	x	a	x	x	x	x	x	x	x	x	x	x	a	x		
	23	Harikrishnan . G		x	x	a	x	x	x	x	x	x	x	x	x	x	a	x		

COURSE COORDINATOR

ANJANA . S. S

TOTAL WORKING DAYS		
PREVIOUS MONTH	PRESENT MONTH	TOTAL

No. on roll at the beginning in the month.....

Daily Attendance: FN / AN

Initials of Teacher

Head of the Department
Department of Mathematics
Sree Narayana College
Chathannur

No. of Days Present	Present Up-to-Date	% of Attendance	Admission Fee	Date of Payment	Special Fee: Fees Rs.	Special Fee: Fine Rs.	Total Rs.	Date of Payment	Initials of Class Teacher	Remarks

Fees collected Rs
Current
Arrear
Fine
Total

No. Admitted.....
No. Left.....
No. at the end of the month.....

Class Teacher

Headmaster/Principal

Attendance statement 2019-20

SREE NARAYANA COLLEGE CHATHANNUR

DEPARTMENT OF MATHEMATICS

CERITIFICATE OF COMPLETION

This is to certify that Mr/Ms Vishnu Raj R . III Bcom

has participated and completed the College level Certificate Course on "DATA ANALYSIS 2019-20" organized by Department of Mathematics, Sree Narayana College Chathannur.

Coordinator
Anjana S S

H.O.D
Dr. Rani Rajeevan

Principal

SREE NARAYANA COLLEGE CHATHANNUR

Department of Mathematics

Certificate Course on Data Analysis

Report 2019-20

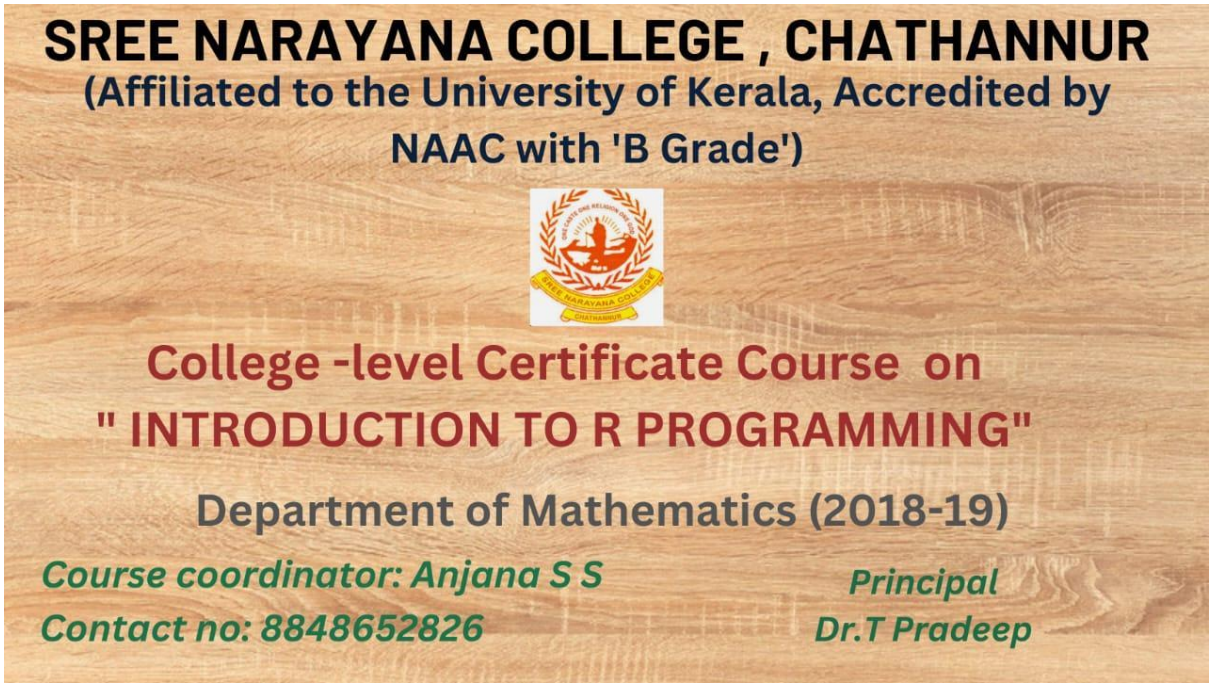
Data analysis is the process of collecting, modeling, and analyzing data using various statistical and logical methods and techniques. Businesses rely on analytics processes and tools to extract insights that support strategic and operational decision-making. Nowadays, data is collected at various stages of processes and transactions, which has the potential to significantly improve the way we work. However, to fully realize the value of data analysis, this data must be analyzed in order to gain valuable insights into improving products and services. So in the current academic year we started our Certificate course in Data Analysis on 2.12.2019. It was officially inaugurated by Dr. Latha M S, Principal, S N College, Chathannur. Smt. Anjana S S, Faculty in Statistics has led the classes from 2/12/2019 to 3/2/2020 and the examination was conducted on 9/10/2020 at the Computer lab. A total of 23 students were registered in the said programme. All of the students were completed the course successfully and course completion certificates were distributed to students.

Course Coordinator

2018-19

CERTIFICATE COURSE IN INTRODUCTION TO R PROGRAMMING

During the academic year 2018-19, fifteen students registered for the certificate course in An Introduction to R Programming, organized by the Department of Mathematics, Sree Narayana College, Chathannur. The theory classes and practical classes were handled by Smt. Anjana S S of the department. The topics taught in the course include bar diagram, Pie diagram, histogram, mean, median, mode, correlation and regression analysis. Lab sessions were also included in the course. The course was organized for the students who have got interest in understanding the importance. The students completed the course with good grades and course completion certificates were distributed to students.



Sree Narayana College, Kollam

Department of Mathematics

Certificate Course -II Syllabus

Title of the Course: Introduction to R PROGRAMMING

Aim of the Course

This Course is aimes at building a skill-set to tackle real-world data analysis. It is a guide to understand how to program in R and how to use R for effective data analysis.

Objective of the course

- The basics of statistical computing and data analysis
- How to use R for analytical programming

Outcome of the course

- After competing this course, you will be able to explain critical R programming concept. Through the use of R programming, analyses data and generate reports based on the data. As a result you can apply various concepts to write programs in R.

Sree Narayana College Chathannur

Department of Mathematics

Certificate Course - Syllabus

Title of the Course: Introduction To R Programming

Contact Hours: 30 hr [15(T) + 15(P)]

Module 1 : Charts and Diagrams (5 hr)

1. Bar diagrams

   1.1 Methods for drawing different bar diagrams using R programming.

2. Pie diagrams and Scatter diagram

   2.1 Methods for drawing diagrams using R programming.

3. Histogram

   3.1 Methods to install R studio.

   3.2 Methods to construct frequency tables using R.

   3.3 Methods for drawing Histogram using R.

Module 2 : Descriptive Statistics (4hr)

1. Mean, Median, Mode

   1.1 Methods to find Mean, Median, Mode using R.

Module 3 : Correlation and Regression (3hr)

1. Correlation

   1.1 Methods for finding correlation using R.

2. Regression

2.1 Methods to find regression using R.

Module 4: ANOVA using R(3hr)

1. One way ANOVA

   1.1 Methods for finding ANOVA single factor (one way ANOVA).

   1.2 Result analysis for One way ANOVA.

2. Two way ANOVA

   2.1 Methods to find two way ANOVA with and without replications.

   2.2 Result analysis for two way ANOVA.

REFERENCES

1. **Dalgaard. P(2008), Introductory Statistics with R, Springer, Newyork.**
2. **Lander J P(2017), R for everyone 2/e. Addison-wesley, Professional, U.S**
3. **Michael J Crawley (2013), The R Book, 2/e, Wiley, Newyork.**

SREE NARAYANA COLLEGE , KOLLAM

DEPARTMENT OF MATHEMATICS

CERTIFICATE COURSE EXAMINATION 2018-19

INTRODUCTION TO R PROGRAMMING

Time : 1 hr max.mark :50

Answer any one question given below each carry 10 marks.

1.Represent the data using pi-diagram.

Continent	Area
Africa	30.33
North America	24.5
Antarctica	13.23
Asia	42.4
South America	17.64
Europe	10.57
Oceania	8.42

2.Prepare a frequency table for the following data.

65,66,68,63,82,80,83,72,60,76,83,60,92,71,65,69,88,94,92,90,87,81,65,

84,61,84,80,76,75,73,70,80,96,68,67,60,72,74,98,88,83,60,64,77,75,70,

68,81,79,85.

(1*10=10)

Answer any two question each carry 20 marks

3.Find mean, median and mode for the following data.

Marks	0-10	10-20	30-40	40-50	50-60	60-70
No.of students	22	10	28	10	14	16

4.The following table shows age and blood pressure of 20 persons. Calculate correlation coefficient.

X:35 ,40,46,58,63,70,45,58,36,40,52,64,70,85,68,54,38,60,52,75

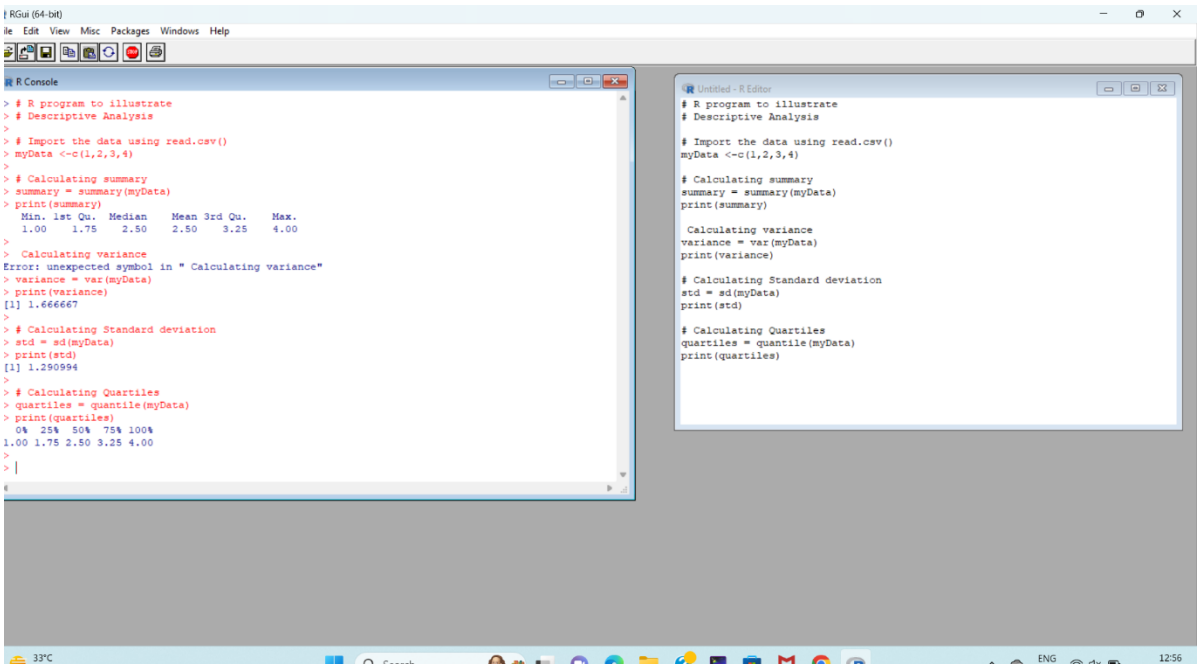
Y:80,85,80,92,95,98,100,82,72,81,91,83,110,76,91,95,82,95,110,85

5. Find the two regression equations for the following data of sales and expenses .

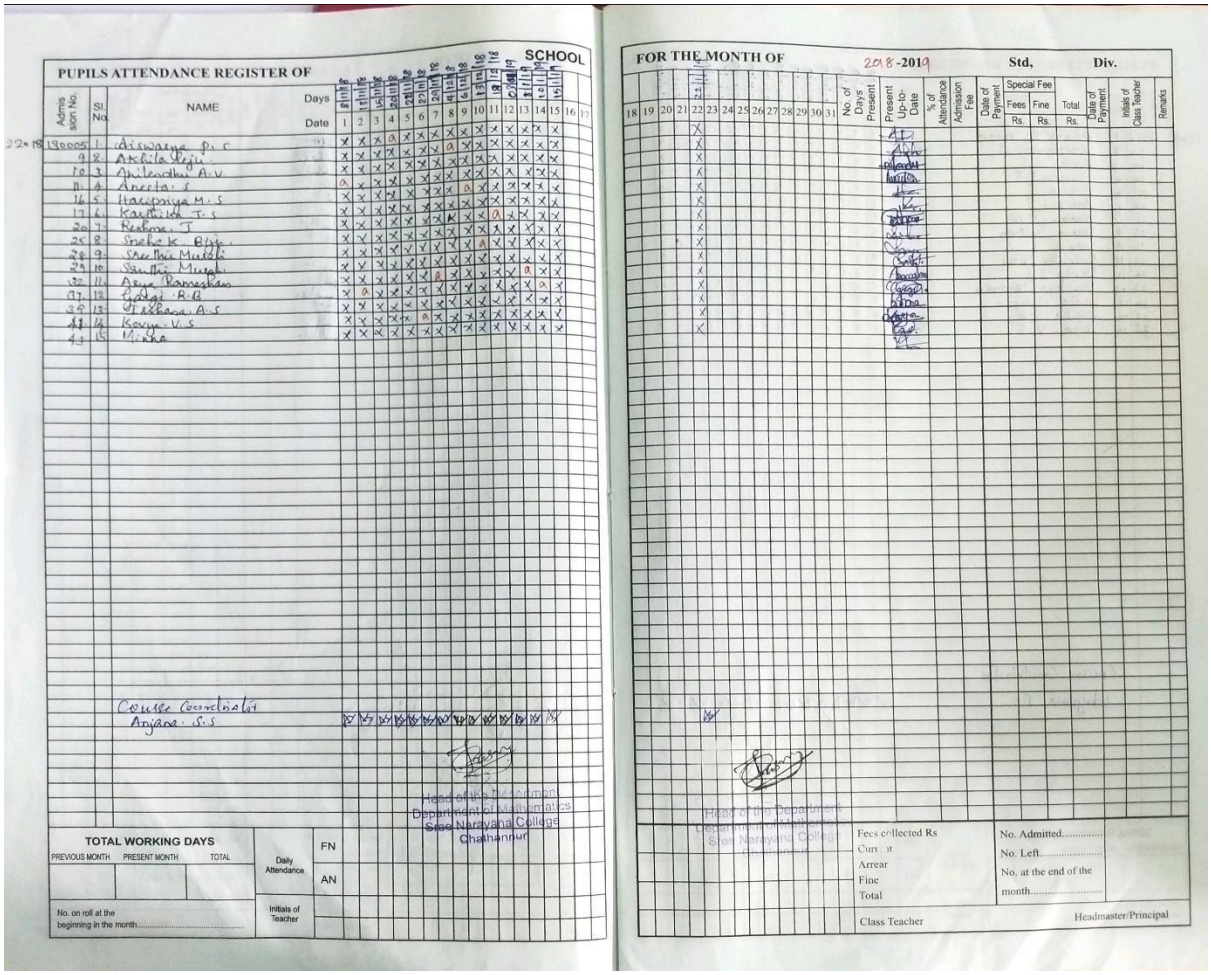
Sales : 50 50 55 60 65 65 65 60 60 50

Expense : 11 13 14 16 16 15 15 14 13 13

(2*20=40)



A sample answer sheet



Attendance statement 2018-19

SREE NARAYANA COLLEGE
CHATHANNUR
DEPARTMENT OF MATHEMATICS

CERITIFICATE OF COMPLETION

This is to certify that Mr/Ms. Karthika J S . | Bsc Mathematics .....

has participated and completed the College level Certificate Course on "INTRODUCTION TO R PROGRAMMING ***2018-19"*** *organized by Department of Mathematics, Sree Narayana College Chathannur.*

Coordinator
Anjana. V. S

H.O.D

Principal

SREE NARAYANA COLLEGE CHATHANNUR

Department of Mathematics

Certificate Course on Introduction to R Programming

Report 2018-19

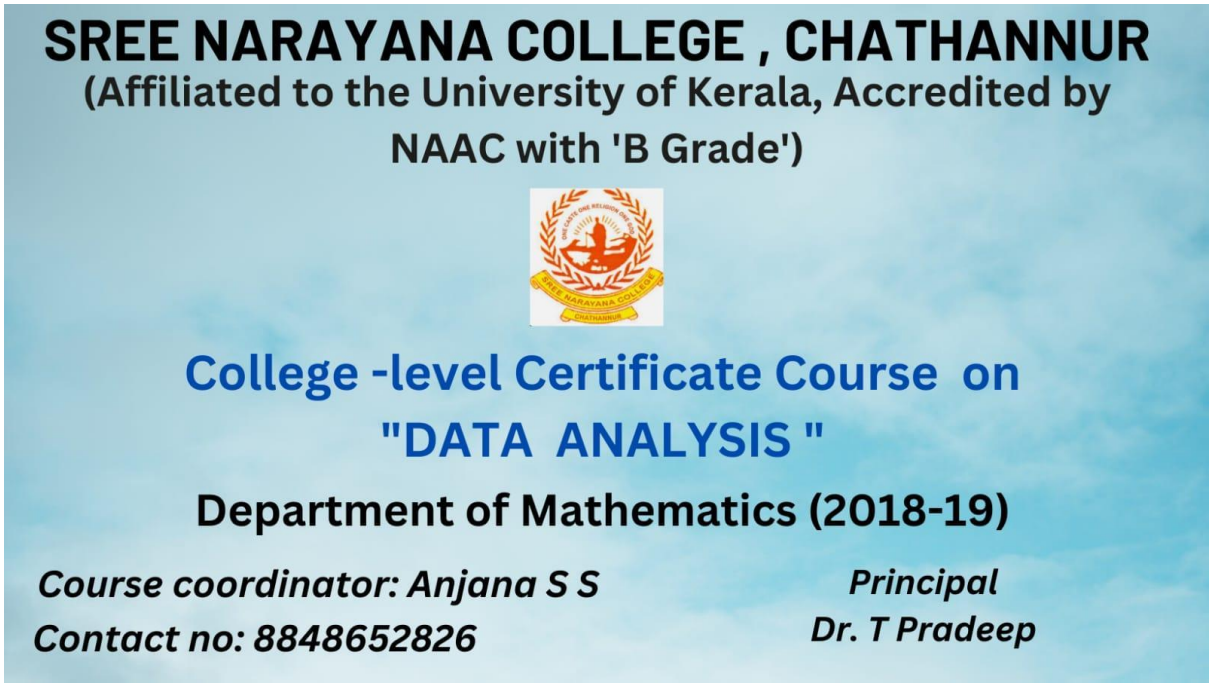
R is an open source programming language that is commonly used as a tool for data analysis and statistical functions. It is a popular open source programming language used for statistical computing, data analysis and visualization . It provides wide range of statistical and graphical techniques, making it one of the most widely used languages for data analysis and research . R is used variety of industries, including finance , healthcare, marketing and education. It is commonly used for statistics analysis and predictive modelling and the data visualization. As a result R is a popular programming language for analysis and statistics. So in the current academic year we started our Certificate course in Introduction to R Programming on 08.11.2018. It was officially inaugurated by Dr. T Pradeep Principal, S N College, Chathannur. Smt. Anjana S S, Faculty in Statistics has led the classes from 08.11.2018 to 15.01.2019 and the examination was conducted on 22.01.2019 at the Computer lab. A total of 15 students were registered in the said programme. All of the students were completed the course successfully and course completion certificates were distributed to students.

Course Coordinator

Anjana S S

CERTIFICATE COURSE – II
DATA ANALYSIS

During the academic year 2018-19, 25 students registered for the certificate course in Data Analysis, organized by the Department of Mathematics, Sree Narayana College, Chathannur. The theory classes and practical classes were handled by Smt. Anjana S S of the department. The topics taught in the course include bar diagram, Pie diagram, histogram, mean, median, mode, correlation and regression analysis. Lab sessions were also included in the course. The course was organized for the students who have got interest in the data analysis field. The students completed the course with good grades and course completion certificates were distributed to students.



Sree Narayana College, Chathannur

Department of Mathematics

Certificate Course Syllabus

Title of the Course: Data Analysis

Aim of the Course

1. This Course is aimed at familiarizing participants to the use of advanced excel formulas and features in intensive data analysis and equips the participants to the use of data analysis as a tool for their project work.
2. Data analysis helps teachers understand their students' learning abilities and challenges, and facilitates an ingrained cultural process that uses detailed inputs (information) to ensure optimal outputs

Objective of the course

- To teach the participants advanced Excel functions.

Outcome of the course

- Through the use of data analysis, **project managers can better meet stakeholder expectations—ultimately improving project operations and outcomes**. As a result, they're able to closely monitor and ensure high-quality deliverables. As a project manager, you'll find that data analysis plays a big part in your success

Sree Narayana College, Kollam

Department of Mathematics

Certificate Course Syllabus

Title of the Course: Data Analysis using Microsoft Excel

Contact Hours: 30 hr [15(T) + 15(P)]

Module 1 : Charts and Diagrams (5 hr)

1. Bar diagrams

   1.1 Methods for drawing different bar diagrams using Excel tools.

2. Pie diagrams and Scatter diagram

   2.1 Methods for drawing diagrams using Excel tools.

3. Histogram

   3.1 Methods to install Data analysis tool pack in Excel.

   3.2 Methods to construct frequency tables in Excel.

   3.3 Methods for drawing Histogram using Data analysis functions.

Module 2 : Descriptive Statistics (4hr)

1. Mean, Median, Mode

   1.1 Methods to find Mean, Median, Mode using Data analysis in Excel.

Module 3 : Correlation and Regression (3hr)

1. Correlation

   1.1 Methods for finding correlation using Data analysis tool pack.

2. Regression

   2.1 Methods to find regression using Data analysis tool pack.

REFERENCES

1. Dan Remenyi, George Onofrei, Joe English (2010). *An Introduction to Statistics Using Microsoft Excel.* Academic Publishing Ltd., UK

2. Neil J Salkind (2010). *Excel Statistics, A Quick Guide.* SAGE Publication Inc. New Delhi

3.Vijai Gupta (2002). *Statistical Analysis with Excel.* VJ Books Inc. Canada

SREE NARAYANA COLLEGE , KOLLAM

DEPARTMENT OF MATHEMATICS

CERTIFICATE COURSE EXAMINATION 2018-19

DATA ANALYSIS USING MICROSOFT EXCEL

Time : 1 hr
max.mark :50

Answer any one question given below each carry 10 marks.

1.Represent the data using pi-diagram.

Continent	Area
Africa	30.33
North America	24.5
Antarctica	13.23
Asia	42.4
South America	17.64
Europe	10.57
Oceania	8.42

2.Prepare a frequency table for the following data.

65,66,68,63,82,80,83,72,60,76,83,60,92,71,65,69,88,94,92,90,87,81,65,

84,61,84,80,76,75,73,70,80,96,68,67,60,72,74,98,88,83,60,64,77,75,70,

68,81,79,85.

(1*10=10)

Answer any two question each carry 20 marks

3.Find mean, median and mode for the following data.

Marks	0-10	10-20	30-40	40-50	50-60	60-70
No.of students	22	10	28	10	14	16

4.The following table shows age and blood pressure of 20 persons.Calculate correlation coefficient.

X:35 ,40,46,58,63,70,45,58,36,40,52,64,70,85,68,54,38,60,52,75

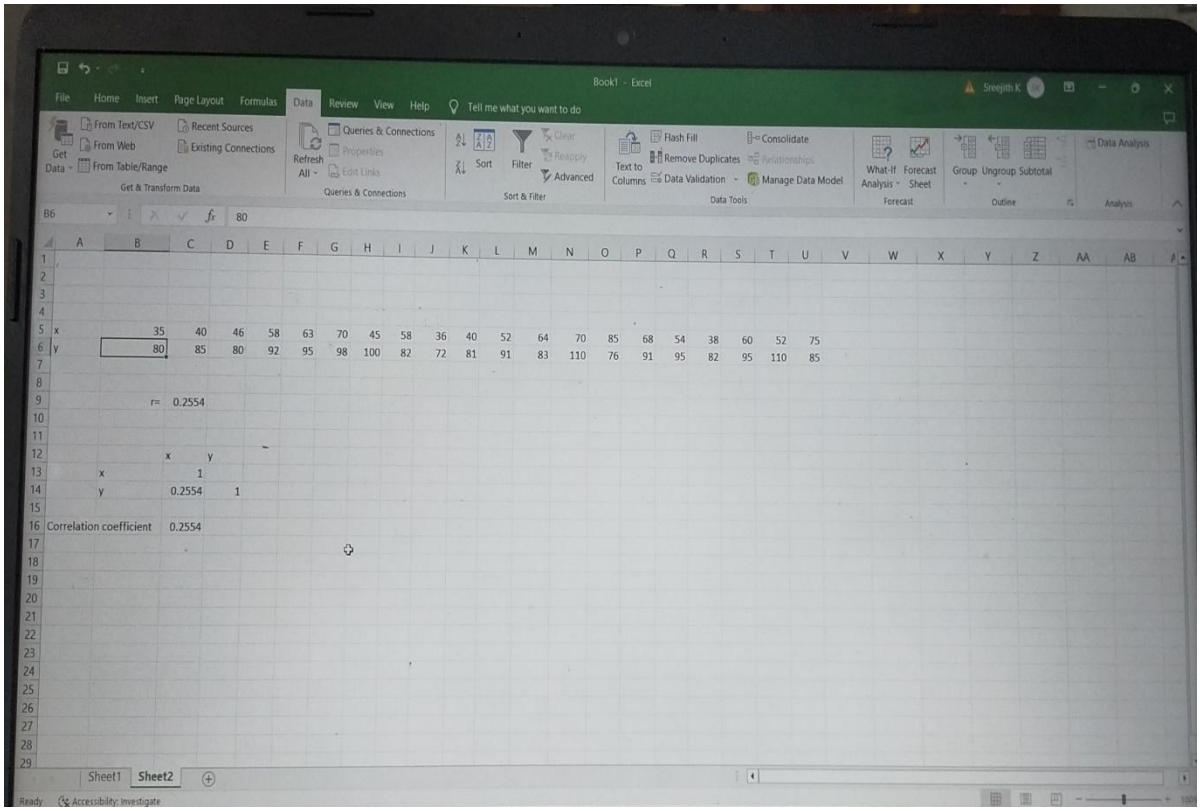
Y:80,85,80,92,95,98,100,82,72,81,91,83,110,76,91,95,82,95,110,85

5. Find the two regression equations for the following data of sales and expenses .

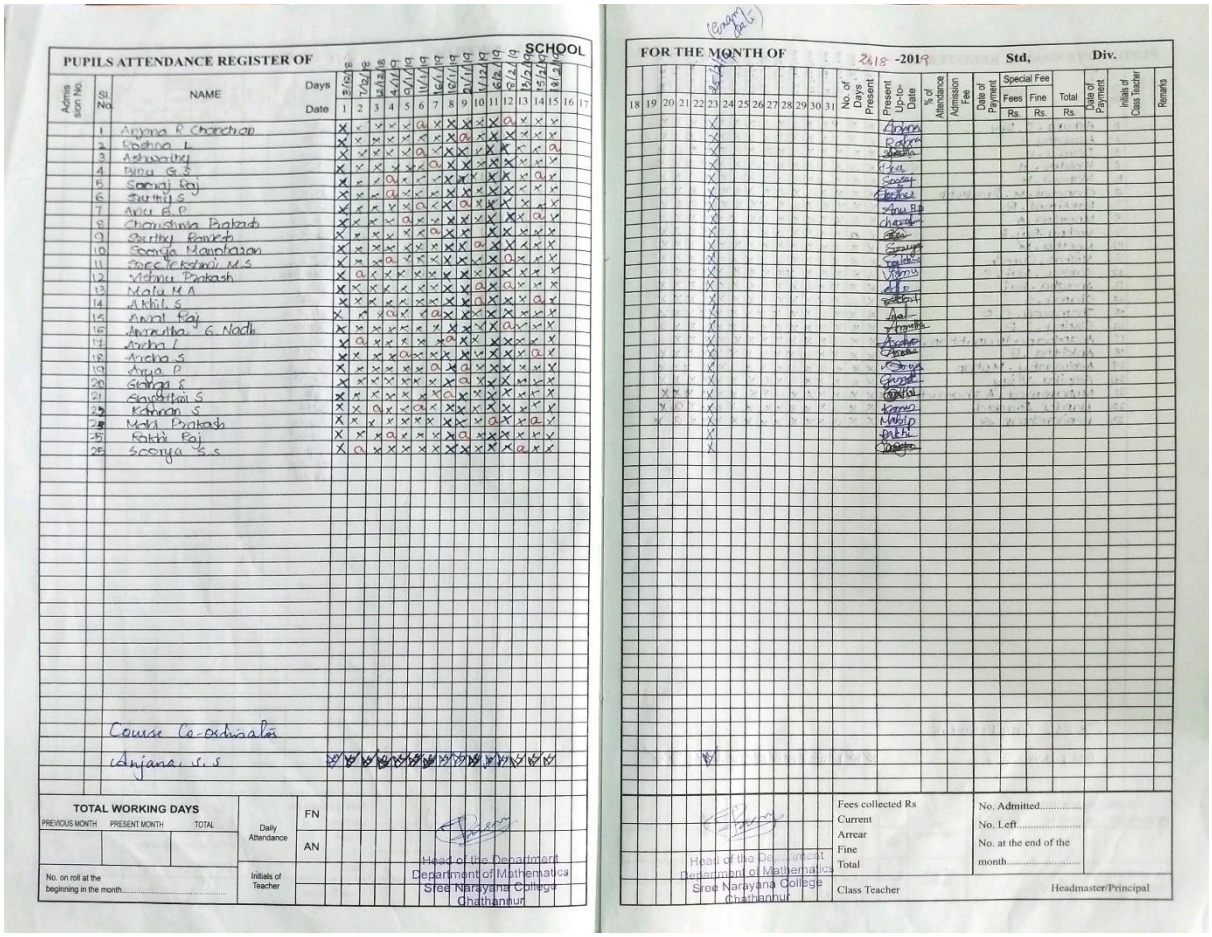
Sales : 50 50 55 60 65 65 65 60 60 50

Expense : 11 13 14 16 16 15 15 14 13 13

(2*20=40)



A Sample answer sheet



Attendance statement 2018-19

SREE NARAYANA COLLEGE CHATHANNUR

DEPARTMENT OF MATHEMATICS

CERITIFICATE OF COMPLETION

This is to certify that Mr/Ms Anjana R Chandran , III Bsc Mathematics

has participated and completed the College level Certificate Course on "DATA ANALYSIS 2018-19" organized by Department of Mathematics, Sree Narayana College Chathannur.

Coordinator

Anjana R S

H.O.D

Principal

SREE NARAYANA COLLEGE CHATHANNUR

Department of Mathematics

Certificate Course on Data Analysis

Report 2018-19

Data analysis is the practice of working with data to draw useful information which can then used to make informed decisions using various statistical and logical methods and techniques. Businesses rely on analytics processes and tools to extract insights that support strategic and operational decision-making. Nowadays, data is collected at various stages of processes and transactions, which has the potential to significantly improve the way we work. However, to fully realize the value of data analysis, this data must be analyzed in order to gain valuable insights into improving products and services. So in the current academic year we started our Certificate course in Data Analysis on 3/12/2018. It was officially inaugurated by Dr. T Pradeep, Principal, S N College, Chathannur. Smt. Anjana S S, Faculty in Statistics has led the classes from 3/12/2018 to 18/02/2019 and the examination was conducted on 25/02/2019 at the Computer lab. A total of 25 students were registered in the said programme. All of the students were completed the course successfully and course completion certificates were distributed to students.

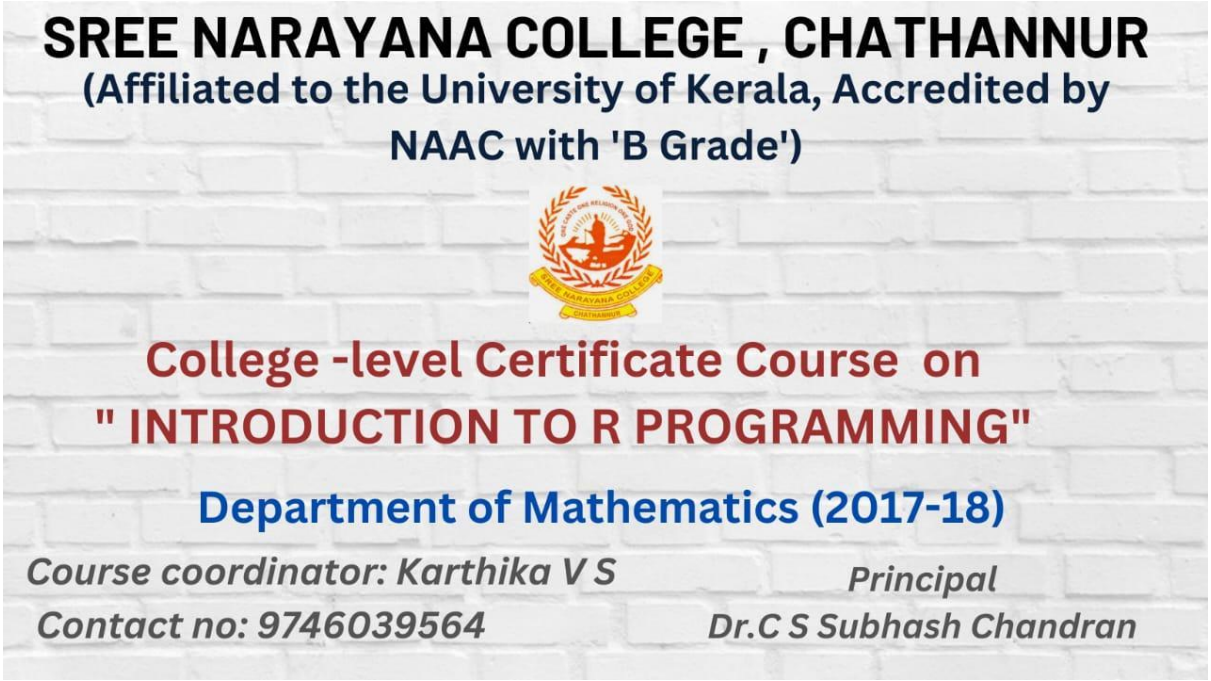
Course Coordinator

Anjana S S

2017-18

CERTIFICATE COURSE IN INTRODUCTION TO R PROGRAMMING

During the academic year 2017-18, fifteen students registered for the certificate course in An Introduction to R Programming , organized by the Department of Mathematics, Sree Narayana College, Chathannur. The theory classes and practical classes were handled by Smt. Karthika V S of the department. The topics taught in the course include bar diagram, Pie diagram, histogram, mean, median, mode, correlation and regression analysis. Lab sessions were also included in the course. The course was organized for the students who have got an idea about the importance of R Programming in real world . The students completed the course with good grades and course completion certificates were distributed to students.



Sree Narayana College, Kollam

Department of Mathematics

Certificate Course -II Syllabus

Title of the Course: Introduction to R PROGRAMMING

Aim of the Course

This Course is aimes at building a skill-set to tackle real-world data analysis. It is a guide to understand how to program in R and how to use R for effective data analysis.

Objective of the course

- The basics of statistical computing and data analysis
- How to use R for analytical programming

Outcome of the course

- After competing this course, you will be able to explain critical R programming concept. Through the use of R programming, analyses data and generate reports based on the data. As a result you can apply various concepts to write programs in R.

Sree Narayana College Chathannur

Department of Mathematics

Certificate Course - Syllabus

Title of the Course: Introduction To R Programming

Contact Hours: 30 hr [15(T) + 15(P)]

Module 1 : Charts and Diagrams (5 hr)

1. Bar diagrams

   1.1 Methods for drawing different bar diagrams using R programming.

2. Pie diagrams and Scatter diagram

   2.1 Methods for drawing diagrams using R programming.

3. Histogram

   3.1 Methods to install R studio.

   3.2 Methods to construct frequency tables using R.

   3.3 Methods for drawing Histogram using R.

Module 2 : Descriptive Statistics (4hr)

1. Mean, Median, Mode

   1.1 Methods to find Mean, Median, Mode using R.

Module 3 : Correlation and Regression (3hr)

1. Correlation

   1.1 Methods for finding correlation using R.

2. Regression

2.1 Methods to find regression using R.

Module 4: ANOVA using R(3hr)

1. One way ANOVA

   1.1 Methods for finding ANOVA single factor (one way ANOVA).

   1.2 Result analysis for One way ANOVA.

2. Two way ANOVA

   2.1 Methods to find two way ANOVA with and without replications.

   2.2 Result analysis for two way ANOVA.

REFERENCES

1. **Dalgaard. P(2008), Introductory Statistics with R, Springer, Newyork.**
2. **Lander J P(2017), R for everyone 2/e. Addison-wesley, Professional, U.S**
3. **Michael J Crawley (2013), The R Book, 2/e, Wiley, Newyork.**

SREE NARAYANA COLLEGE , KOLLAM

DEPARTMENT OF MATHEMATICS

CERTIFICATE COURSE EXAMINATION 2017-18

INTRODUCTION TO R PROGRAMMIMG

Time : 1 hr Max.mark :50

Answer any one question given below each carry 10 marks.

1.Represent the data using pi-diagram.

Continent	Area
Africa	30.33
North America	24.5
Antarctica	13.23
Asia	42.4
South America	17.64
Europe	10.57
Oceania	8.42

2.Prepare a frequency table and histogram for the following data.

45,56,41,86,87,63,60,62,43,55,78,71,56,59,44,48,98,76,74,66,81,49,52,

67,64,78,70,63,48,92,88,60,61,80,75,62,55,60,70,96,90,49,58,50,70,61,

84,90,96,92,43,75,68,73,85,80,81,63,90,84.

(1*10=10)

Answer any two question each carry 20 marks

3.Find all descriptive measures of statistics for the following data.

65,66,68,63,82,80,83,72,60,76,83,60,92,71,65,69,88,94,92,90,87,81,65,

84,61,84,80,76,75,73,70,80,96,68,67,60,72,74,98,88,83,60,64,77,75,70,

68,81,79,85.

4. Prepare a scatter diagram for the following data.

X:35 ,40,46,58,63,70,45,58,36,40,52,64,70,85,68,54,38,60,52,75

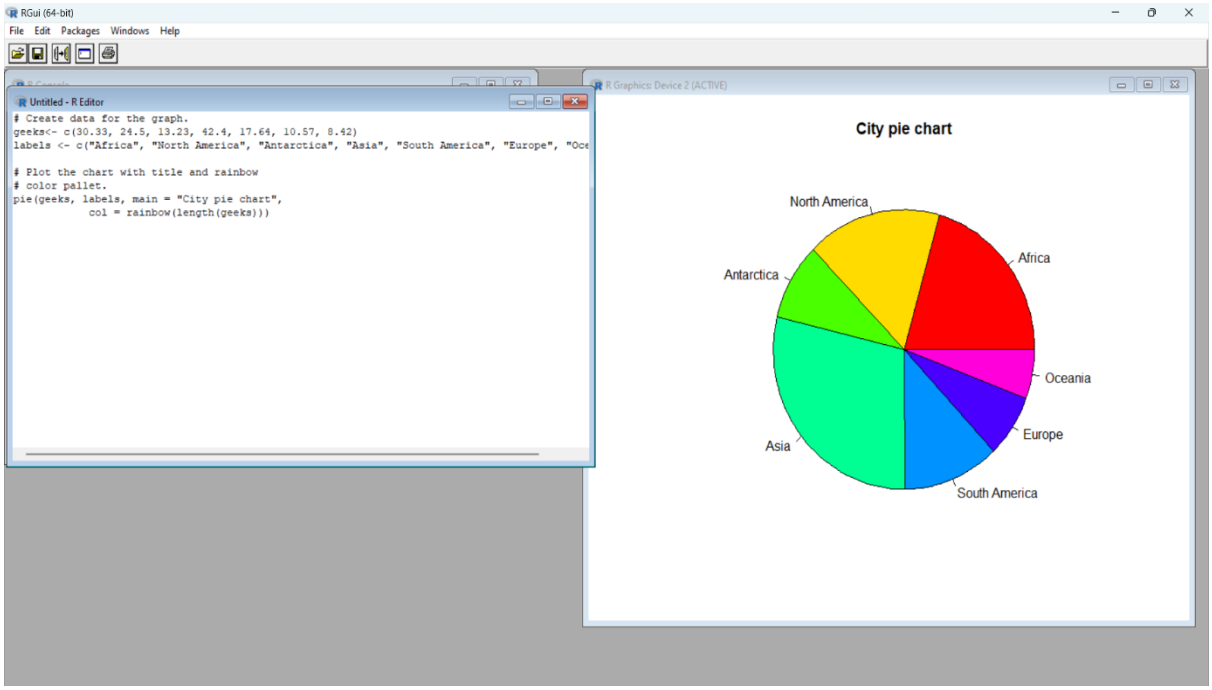
Y:80,85,80,92,95,98,100,82,72,81,91,83,110,76,91,95,82,95,110,85

5. Find the two regression equations for the following data of sales and expenses .

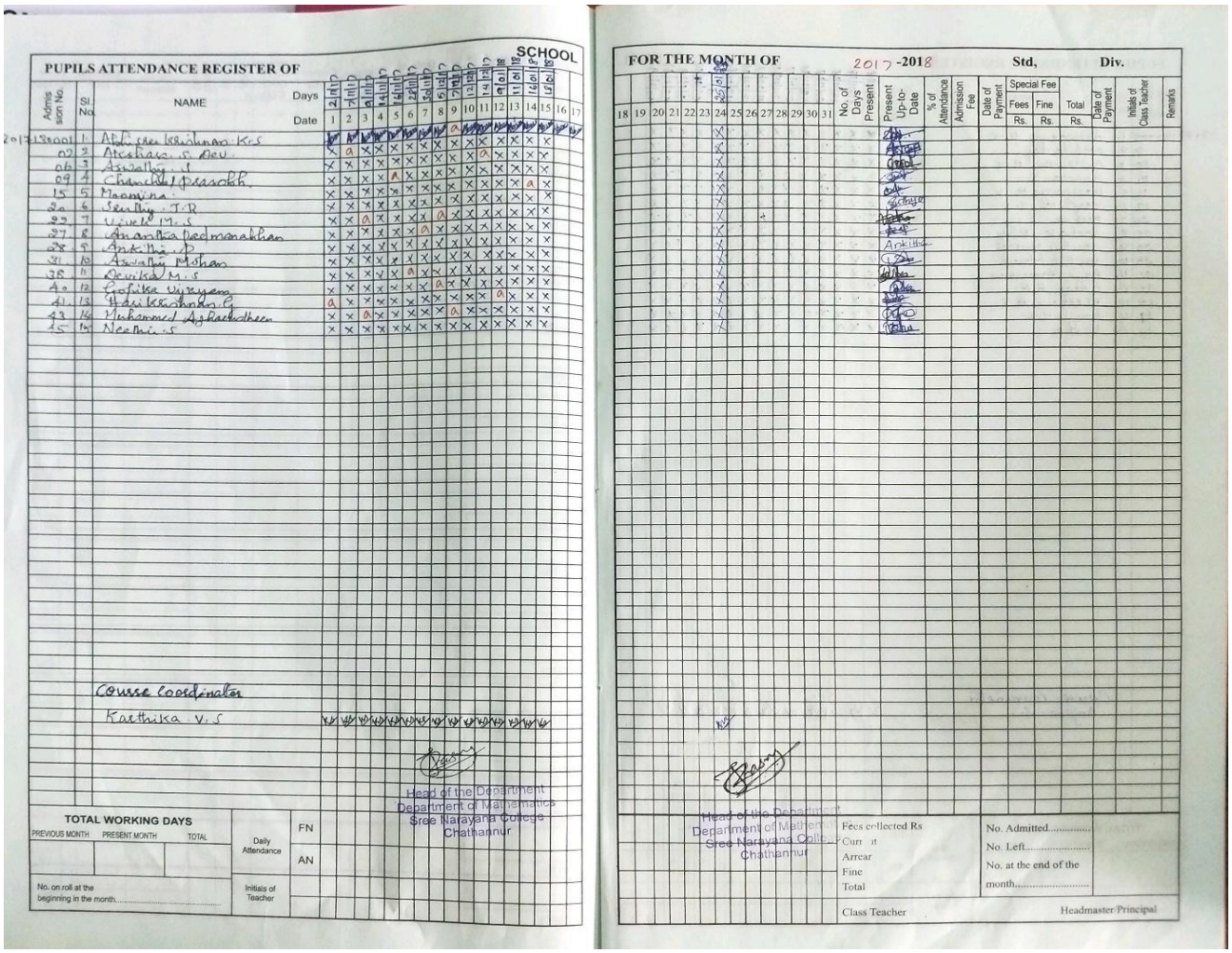
X : 45 50 40 48 45 55 52 48 50 40

Y : 10 12 20 15 14 10 13 16 20 18

(2*20=40)



A sample answer sheet



Attendance statement 2017-18

SREE NARAYANA COLLEGE
CHATHANNUR

DEPARTMENT OF MATHEMATICS

CERITIFICATE OF COMPLETION

This is to certify that Mr/Ms. Chanchal Prasobh . I Bsc Mathematics .....

has participated and completed the College level Certificate Course on "INTRODUCTION TO R PROGRAMMING ***2017-18"*** *organized by Department of Mathematics, Sree Narayana College Chathannur.*

Coordinator
KARTHIKA V

H.O.D

Principal

SREE NARAYANA COLLEGE CHATHANNUR

Department of Mathematics

Certificate Course on Introduction to R Programming

Report 2017-18

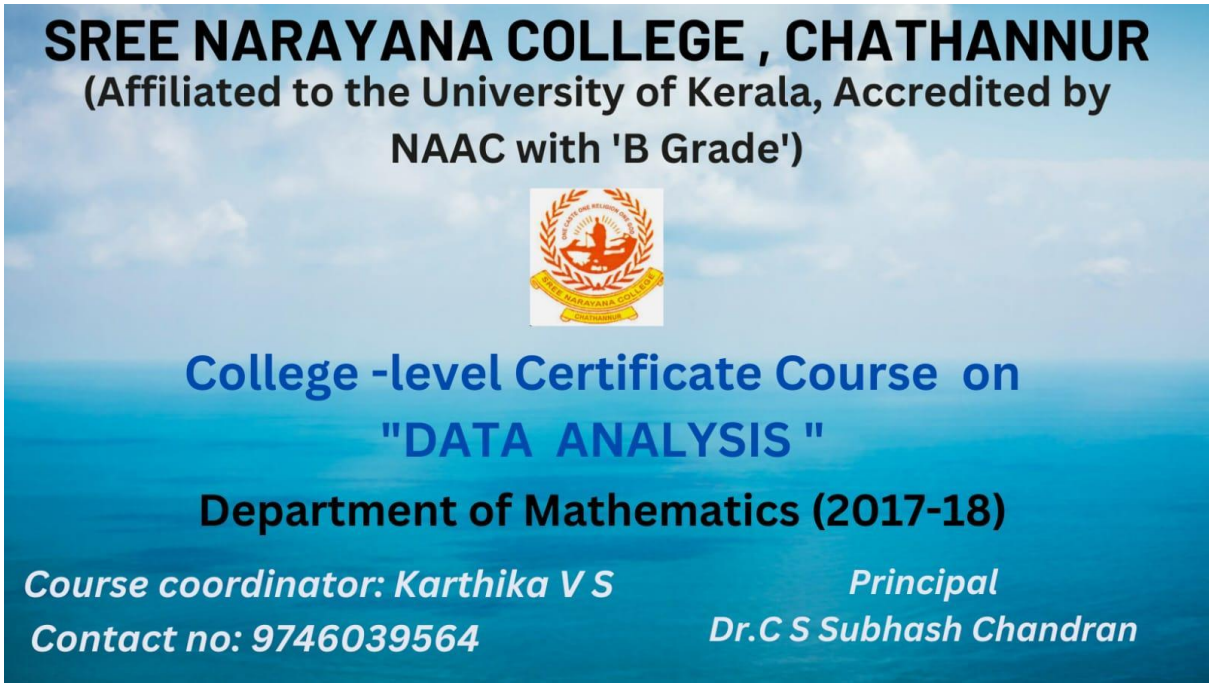
R has become a very popular programming language and development environment used for statistical computation. R is a popular open source programming language used for statistical computing, data analysis and visualization . It provides wide range of statistical and graphical techniques, making it one of the most widely used languages for data analysis and research . R is used variety of industries, including finance , healthcare, marketing and education. It is commonly used for statistics analysis and predictive modelling and the data visualization. As a result R is a popular programming language for analysis and statistics. So in the current academic year we started our Certificate course in Introduction to R Programming on 02.11.2017. It was officially inaugurated by Dr. C S Subhash Chandran Principal, S N College, Chathannur. Smt. Karthika V S, Faculty in Statistics has led the classes from 02.11.2017 to 18.01.2018 and the examination was conducted on 25.01.2017 at the Computer lab. A total of 15 students were registered in the said programme. All of the students were completed the course successfully and course completion certificates were distributed to students.

Course Coordinator

Karthika V S

CERTIFICATE COURSE IN DATA ANALYSIS

During the academic year 2017-18, twenty seven students registered for the certificate course in Data Analysis, organized by the Department of Mathematics, Sree Narayana College, Chathannur. The theory classes and practical classes were handled by Smt. Karthika V S of the department. The topics taught in the course include bar diagram, Pie diagram, histogram, mean, median, mode, correlation and regression analysis. Lab sessions were also included in the course. The course was organized for the students who have got interest in the data analysis field. The students completed the course with good grades and course completion certificates were distributed to students.



Sree Narayana College, Chathannur

Department of Mathematics

Certificate Course Syllabus

Title of the Course: Data Analysis

Aim of the Course

1. This Course is aimed at familiarizing participants to the use of advanced excel formulas and features in intensive data analysis and equips the participants to the use of data analysis as a tool for their project work.
2. Data analysis helps teachers understand their students' learning abilities and challenges, and facilitates an ingrained cultural process that uses detailed inputs (information) to ensure optimal outputs

Objective of the course

- To teach the participants advanced Excel functions.

Outcome of the course

- Through the use of data analysis, **project managers can better meet stakeholder expectations—ultimately improving project operations and outcomes**. As a result, they're able to closely monitor and ensure high-quality deliverables. As a project manager, you'll find that data analysis plays a big part in your success

Sree Narayana College, Kollam

Department of Mathematics

Certificate Course Syllabus

Title of the Course: Data Analysis using Microsoft Excel

Contact Hours: 30 hr [15(T) + 15(P)]

Module 1 : Charts and Diagrams (5 hr)

1. Bar diagrams

   1.1 Methods for drawing different bar diagrams using Excel tools.

2. Pie diagrams and Scatter diagram

   2.1 Methods for drawing diagrams using Excel tools.

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1. Mean, Median, Mode

   1.1 Methods to find Mean, Median, Mode using Data analysis in Excel.

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3.Vijai Gupta (2002). *Statistical Analysis with Excel*. VJ Books Inc. Canada

SREE NARAYANA COLLEGE , KOLLAM

DEPARTMENT OF MATHEMATICS

CERTIFICATE COURSE EXAMINATION 2017-18

DATA ANALYSIS USING MICROSOFT EXCEL

Time : 1 hr max.mark :50

Answer any one question given below each carry 10 marks.

1.Represent the data using pi-diagram.

Continent	Area
Africa	30.33
North America	24.5
Antarctica	13.23
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South America	17.64
Europe	10.57
Oceania	8.42

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84,90,96,92,43,75,68,73,85,80,81,63,90,84.

(1*10=10)

Answer any two question each carry 20 marks

3.Find all descriptive measures of statistics for the following data.

65,66,68,63,82,80,83,72,60,76,83,60,92,71,65,69,88,94,92,90,87,81,65,

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68,81,79,85.

4. Prepare a scatter diagram for the following data.

X:35 ,40,46,58,63,70,45,58,36,40,52,64,70,85,68,54,38,60,52,75

Y:80,85,80,92,95,98,100,82,72,81,91,83,110,76,91,95,82,95,110,85

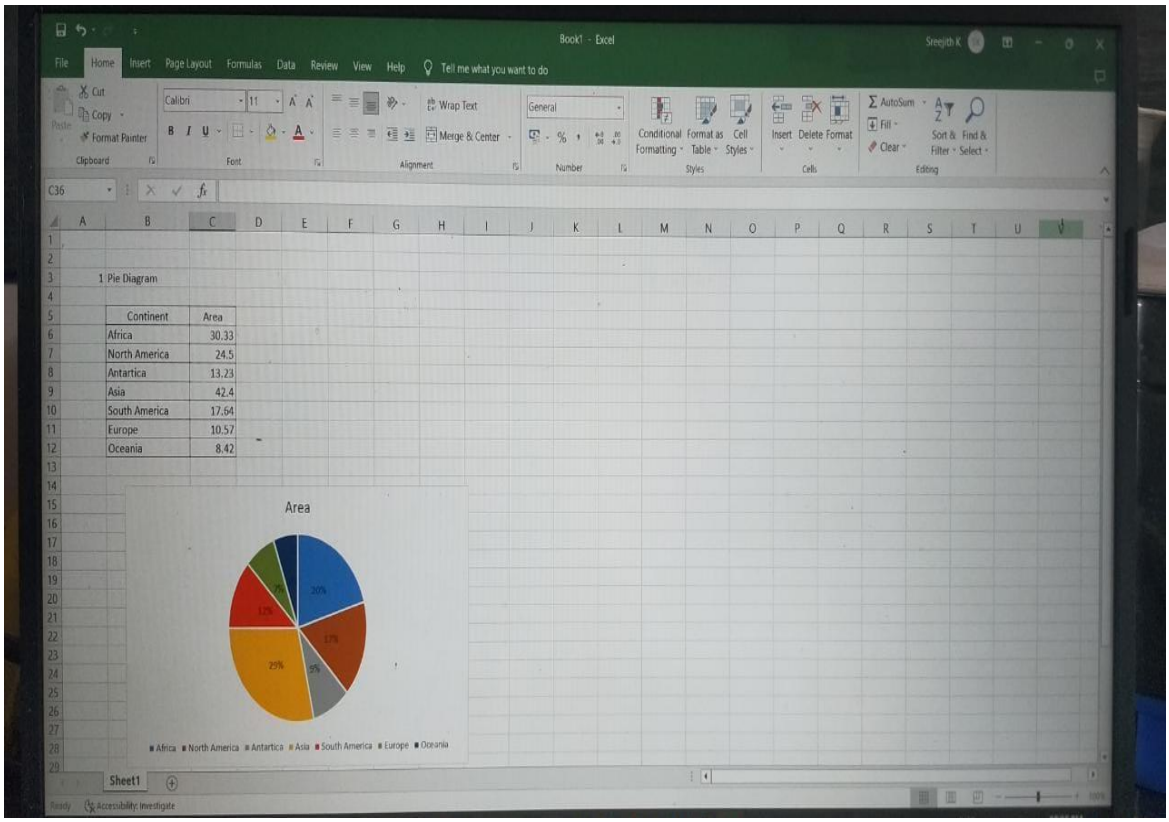
5. Find the two regression equations for the following data of sales and expenses

.

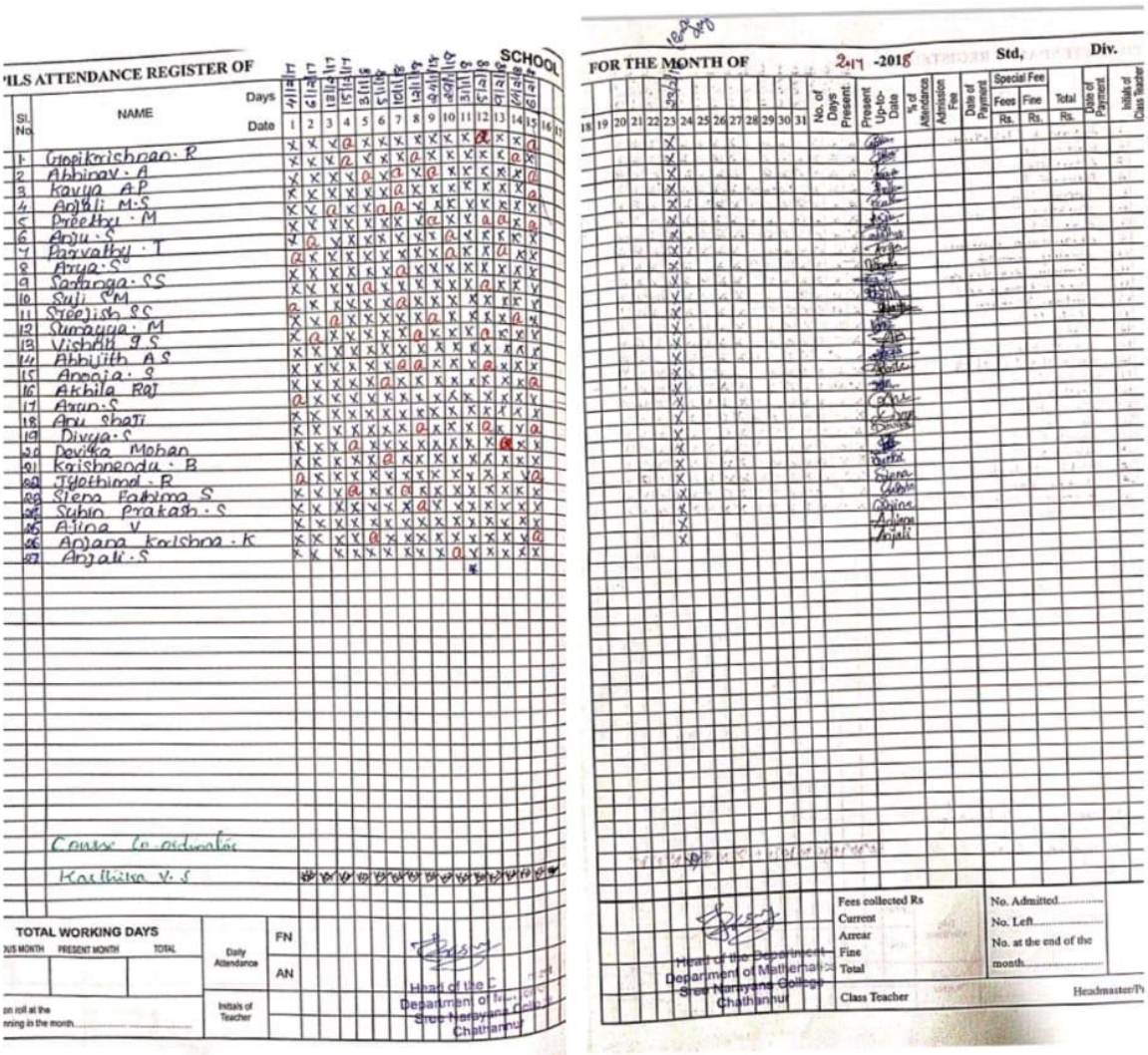
X : 45 50 40 48 45 55 52 48 50 40

Y : 10 12 20 15 14 10 13 16 20 18

(2*20=40)



A sample answer sheet



Attendance statement 2017-18

SREE NARAYANA COLLEGE CHATHANNUR

DEPARTMENT OF MATHEMATICS

CERITIFICATE OF COMPLETION

This is to certify that Mr/Ms Gopikrishnan R, Third year Mathematics

has participated and completed the College level Certificate Course on "DATA ANALYSIS 2017-18" organized by Department of Mathematics, Sree Narayana College Chathannur.

Coordinator
KARTHIKA. V

H.O.D

Principal

SREE NARAYANA COLLEGE CHATHANNUR

Department of Mathematics

Certificate Course on Data Analysis

Report 2017-18

Data analysis is the process of collecting, modeling, and analyzing data using various statistical and logical methods and techniques. Businesses rely on analytics processes and tools to extract insights that support strategic and operational decision-making. Nowadays, data is collected at various stages of processes and transactions, which has the potential to significantly improve the way we work. However, to fully realize the value of data analysis, this data must be analyzed in order to gain valuable insights into improving products and services. So in the current academic year we started our Certificate course in Data Analysis on 04.12.2017. It was officially inaugurated by Dr. C S Subhash Chanran, Principal, S N College, Chathannur. Smt. Karthika V S, Faculty in Statistics has led the classes from 04.12.2017 to 06.02.2018 and the examination was conducted on 23.02.2018 at the Computer lab. A total of 27 students were registered in the said programme. All of the students were completed the course successfully and course completion certificates were distributed to students.

Course Coordinator

Karthika V S