€TRAINING

R Programming

2 - 6 December 2024
Kuala Lumpur (Malaysia)

R Programming

Introduction:

This training program provides participants with essential knowledge and skills in R programming. It empowers them to use R for data analysis, statistical computing, and data visualization effectively.

Program Objectives:

At the end of this program, participants will be able to:

- Understand the basics of R programming language.

- Perform data manipulation and analysis using R.

- Create visualizations to represent data insights.

- Apply statistical methods and models using R.

- Utilize R for reproducible research and reporting.

Targeted Audience:

- Data Analysts.

- Statisticians.

- Data Scientists.

- Researchers.

- Professionals interested in data analysis.

Program Outline:

Unit 1:

Introduction to R Programming:

- Overview of R and its applications.

- Setting up the R environment.

- Basic syntax and data types in R.

- Working with vectors, matrices, and lists.

- Introduction to R packages and libraries.

Unit 2:

Data Manipulation in R:

- Importing and exporting data.

- Data cleaning and preprocessing.

- Using dplyr for data manipulation.

- Handling missing values and outliers.

- Summarizing and aggregating data.

Unit 3:

Data Visualization with R:

- Introduction to data visualization principles.

- Creating basic plots using base R.

- Advanced visualizations with ggplot2.

- Customizing and saving plots.

- Interactive visualizations with plotly.

Unit 4:

Statistical Analysis with R:

- Descriptive statistics and exploratory data analysis.

- Inferential statistics: hypothesis testing, t-tests, chi-square tests.

- Correlation and regression analysis.

- Analysis of variance ANOVA.

- Time series analysis.

Unit 5:

Advanced Topics and Best Practices:

- Writing and debugging R scripts.

- Functional programming in R.

- Reproducible research with RMarkdown.

- Introduction to Shiny for building web applications.

- Best practices for efficient R programming.