



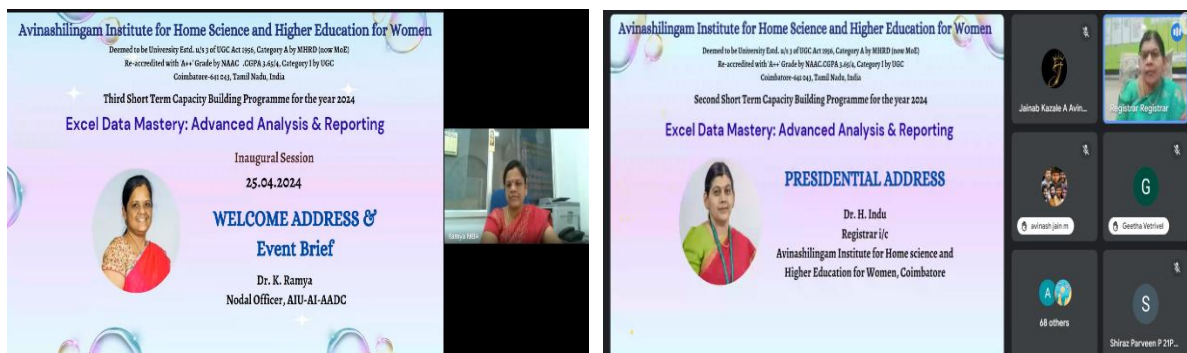
Avinashilingam Institute for Home Science and Higher Education for Women
(Deemed to be University under Category A by MHRD(now MoE), Estd. u/s 3 of UGC Act 1956)
Re-accredited with A++ Grade by NAAC. Recognised by UGC Under Section 12 B
Coimbatore - 641 043, Tamil Nadu, India



**Third Short-Term Capacity Building Programme for the year 2024 on
'Excel Data Mastery: Advanced Analysis & Reporting'
25.04.2024 - 27.04.2024**

The AIU-AI-AADC (Association of Indian Universities -Avinashilingam Institute - Academic & Administrative Development Centre), organized its Third Short-Term Capacity Building Program on Excel Data Mastery: Advanced Analysis & Reporting for 2024 from 25th to 27th April 2024. A total of 35 participants from various HEIs attended the programme.

This program offers participants the opportunity to deepen their understanding of Excel's advanced features for data analysis and reporting. Through interactive sessions and practical exercises, attendees learn how to leverage functions, pivot tables, and advanced charting techniques to unlock insights from complex datasets. This program equips participants with the skills to perform complicated data analysis, create dynamic reports, and visualize data effectively.



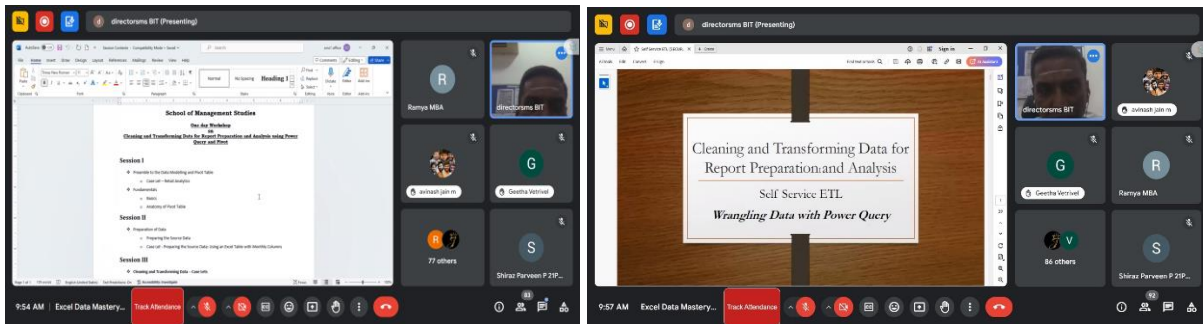
The program began with a prayer, followed by Dr. K. Ramya, Nodal Officer, AIU-AI-AADC, welcoming the gathering and briefing about the event. She explained the plan of action for the upcoming 3 days workshop. The presidential address was given by Dr. H. Indu, Registrar i/c of Avinashilingam Institute for Home Science and Higher Education for Women, who greeted the guest speakers and the participants. During her speech, she explained Excel's importance, its significance to contemporary functionality, and the implication of Excel in daily operations.

Day 1: 25.04.2024

Power Query

Dr. S. Murugappan

Professor & Director, School of Management Studies
Bannari Amman Institute of Technology, Erode

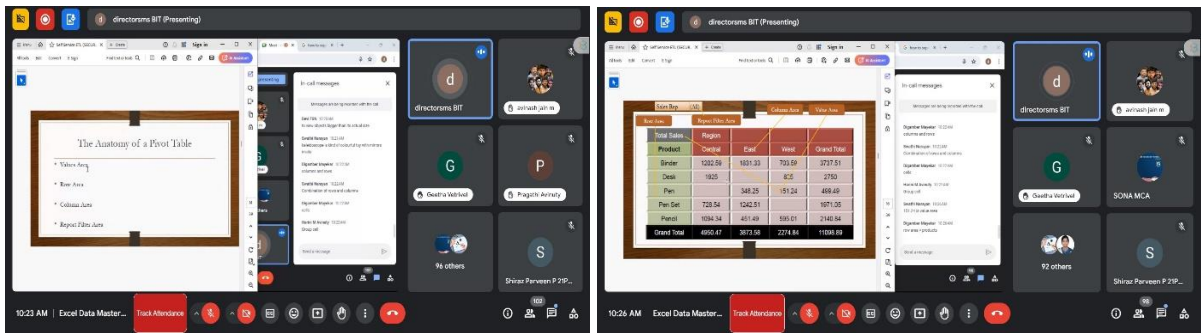


Dr. S. Murugappan is a professor and Director of the School of Management Studies, Bannari Amman Institute of Technology, Erode. The session began with the distribution of materials. The resource person emphasized the importance of interactive participation and encouraged attendees to use the chat window for queries and interactions due to the remote setting.

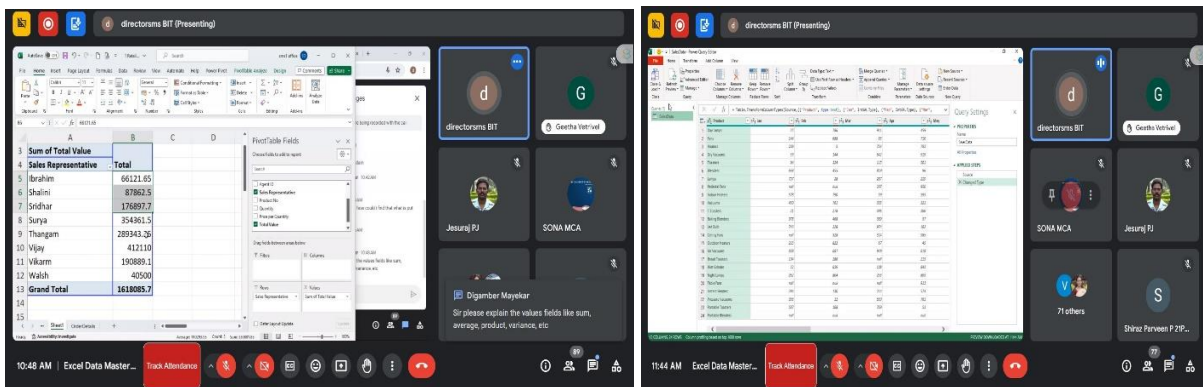
The program covered various topics, starting with basics such as data modeling and pivot tables, leading to more advanced topics like deep data analysis using pivot tables and data extraction from PDFs and websites. Participants were guided through exercises using sample datasets provided in the shared folder. The facilitator emphasized practical learning and encouraged participants to work along with the demonstrations.

The session also highlighted the significance of understanding data structure and distinguishing between stacked and unstacked data. The session aimed to equip participants with data cleaning, transformation, and analysis skills using ETL techniques, specifically focusing on Power Query. The session covered how to differentiate between stacked and unstacked data. He also talked about Data modeling and its use in pivot tables. Then he talked about Self-service ETL techniques, Converting unstacked data into stacked data, and Sourcing data from various venues.

The session successfully introduced participants to data cleaning and transformation techniques using Power Query, empowering them to handle diverse datasets effectively for analysis.



Next session delved into Pivot Tables, likening them to a kaleidoscope that reorganizes data for better insights. Participants learned to identify components of a Pivot Table – row, column, value, and report filter areas. Real-world examples and case studies were used to illustrate the application of Pivot Tables in decision-making processes. Mastering pivot tables allows participants to handle complex data sets and effectively generate insightful reports.



Further, he explained the importance of structured data for efficient data manipulation and analysis. The session was about importing and cleaning data from various sources, Converting date and time formats for analysis. He demonstrated the mastery of Power Query tools for cleaning, transforming, and analyzing data and narrated the construction of Pivot Tables for insightful reporting. Also described about creating dynamic reports and effectively visualizing data using pivot tables and graphs.



Participants actively participated in discussions and exercises, enhancing their understanding of the subject. The resource person emphasized the importance of practice, continuous learning, and leveraging available resources for effective data analysis.

Key Takeaways from the Session:

- Data cleaning, transformation, and analysis skills using Power Query.
- Data modeling and its use in pivot tables.
- Data analysis using pivot tables.
- Data extraction from PDFs and websites.
- Creation of reports and visualize data using pivot tables and graphs

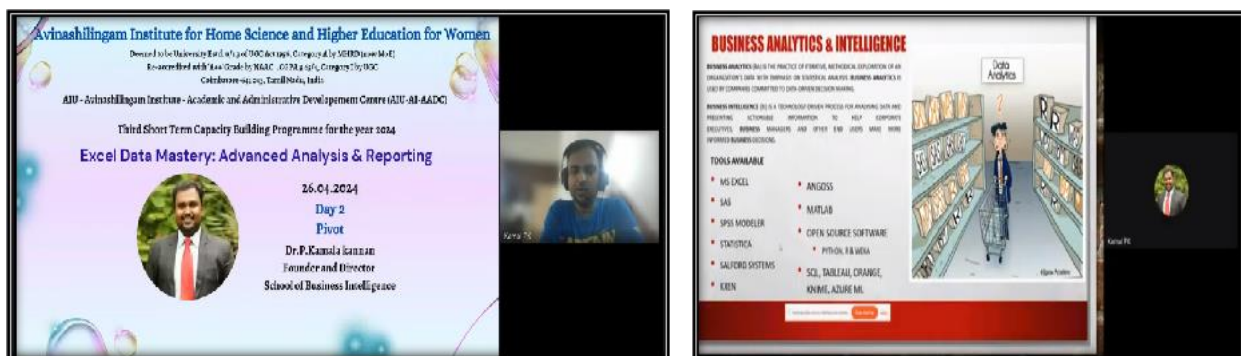
Day 2: 26.04.2024

Pivot

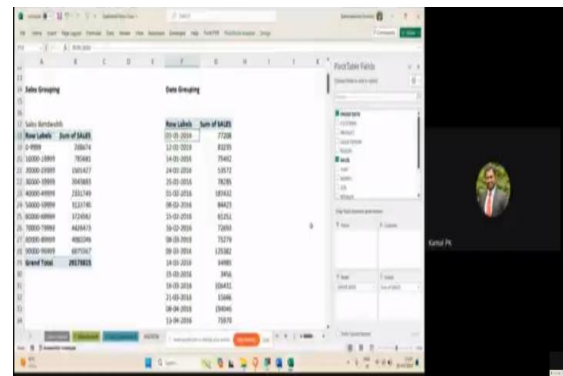
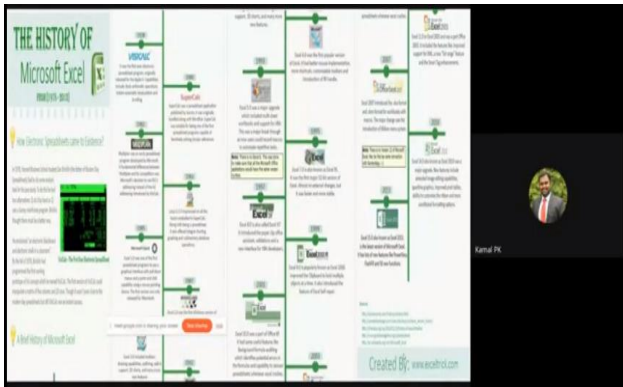
Dr.P.Kamala kannan

Founder and Director, School of Business Intelligence, Salem

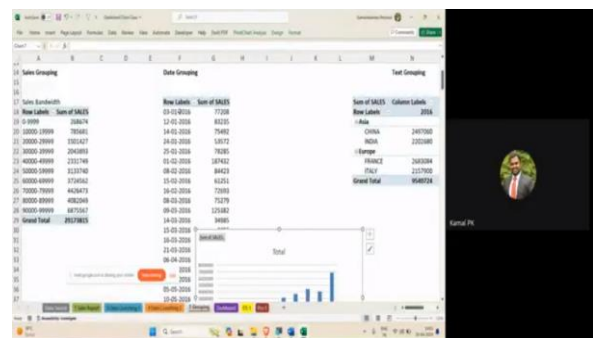
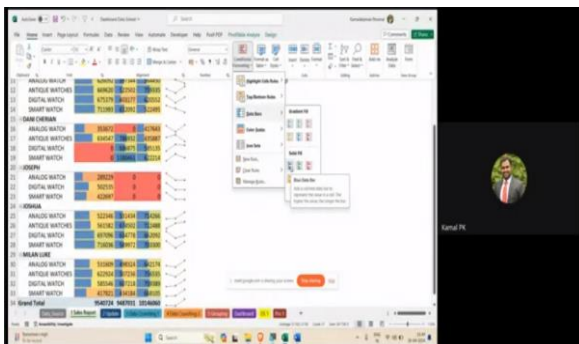
On 26th April 2024 at 9:30 a.m 2nd Day session started with the warm welcome and chief guest Introduction. Chief Guest for the II day is Dr. P. Kamala Kannan, Founder and Director, School of Business Intelligence.



Dr. P. Kamala Kannan enthusiastically started the session by sharing his experience and his skills highlighting about the importance of Excel in the current scenario. He explained about the history and basics of Microsoft excel. Microsoft Excel is powerful spreadsheet software developed by Microsoft. It's widely used for various tasks, including data entry, analysis, visualization, and reporting. He also added that Microsoft Excel is a versatile tool that caters to a wide range of users, from individuals managing personal finances to businesses conducting complex data analysis and reporting. Its intuitive interface, extensive features, and flexibility make it a popular choice for data-related tasks across industries.



Dr. P. Kamala Kannan then explained that Excel tables are powerful tools for organizing, analyzing, and visualizing data. Pivot tables serve as powerful tools for summarizing, organizing, and analyzing complex data sets. However, manual creation and manipulation of pivot tables can be time-consuming and prone to errors. Pivot automation addresses these challenges by automating repetitive tasks, thereby saving time, reducing errors, and enhancing productivity.



Advanced filtering in Excel allows you to filter data in a more customized and flexible way compared to basic filtering options. With advanced filtering, you can apply multiple criteria, use logical operators, and filter data based on complex conditions.

Resource person then explains about Data crunching. He explains that it refers to the process of analyzing and processing large volumes of data to extract meaningful insights and patterns. Data set can be used to explore to understand its structure, relationships, and patterns. This includes Descriptive statistics (mean, median, mode, standard deviation), Data visualization techniques (scatter plots, histograms, box plots) and Exploratory data analysis (EDA) to identify trends, correlations, and anomalies.

Our resource person then explained about Conditional formatting in Excel allows you to apply formatting to cells based on specified conditions or criteria. Next he described about

building an interactive dashboard in Excel can be a powerful way to visualize and analyze data without requiring advanced programming skills. Slicers allow users to filter data interactively. He then explained how to add interactive elements. He then explained how to adjust fonts, colors, and layout. Finally, There are several AI-powered tools available for data demonstration, visualization, and analysis. These tools leverage artificial intelligence and machine learning techniques to provide insights, automate tasks, and enhance the overall data visualization process. Some popular AI tools for data demonstration are Tableau, Power Bi, Google Data Studio, Looker, DataRobot, Plotly, etc. Finally, the session ended up with the feedback sharing session.

Take Away Message

- Participant s learned about to work in macros, pivot tables, and advanced formulas to automate tasks and streamline workflows.
- Participants also learned to create visually appealing and insightful charts, graphs, and dashboards to present data in a compelling and understandable way.

Day 3 :27.04.2024@ 9.30 am -11.00 am

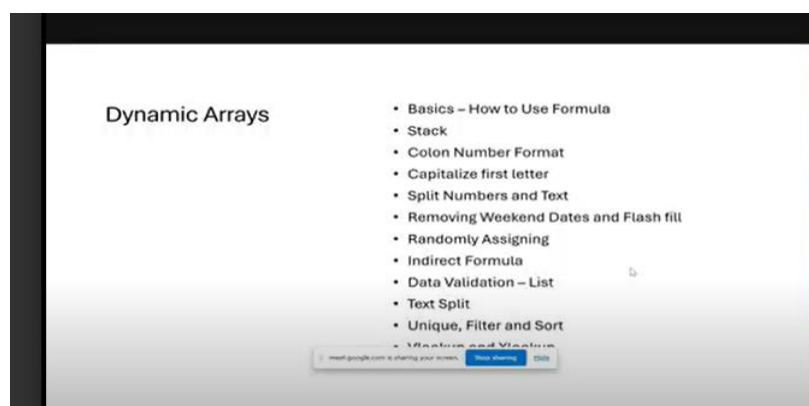
Advanced Analytical Tools

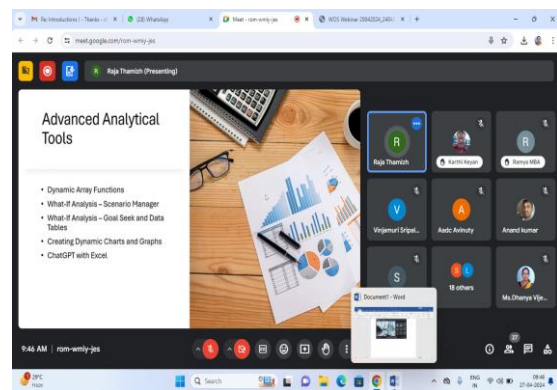
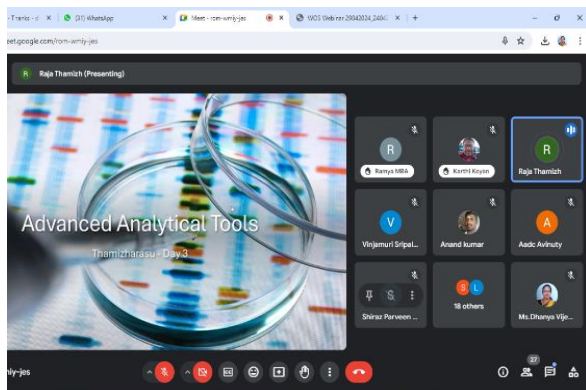
Thamizharasu C

Manager

Strategic projects Quadrasystems.net (India) Private Limited, Coimbatore

Mr.Thamizharasu opened his discussion on Advanced Analytical Tools with a captivating anecdote about a skilled mechanic. Through this narrative, he underscored the significance of employing the correct tools to simplify intricate tasks, thereby emphasizing the importance of analytical tools in problem-solving and decision-making processes with that expert explained the flow of presentation.





The speaker discussed about the importance of Dynamic array functions. It plays a crucial role in various computational tasks, offering flexibility and efficiency in handling data structures. Among these functions, stack operations, VLOOKUP, and XLOOKUP stand out as fundamental tools for managing and analyzing data effectively. Stack functions are essential for managing data in a Last-In-First-Out (LIFO) manner. These functions include PUSH, POP, and TOP. Stack functions are commonly used in algorithms involving recursive calls, backtracking, and expression evaluation.

VLOOKUP (Vertical Lookup) is widely utilized in spreadsheet applications such as Microsoft Excel and Google Sheets. It searches for a value in the first column of a table array and returns a value in the same row from a specified column. VLOOKUP is commonly employed in tasks involving data retrieval, such as searching for product information, employee details, or financial data. XLOOKUP is a more recent addition to spreadsheet software, offering enhanced functionality compared to VLOOKUP. It allows users to search for data across both rows and columns, offering more versatility in data analysis. Dynamic array functions such as stack operations, VLOOKUP, and XLOOKUP are indispensable tools for managing and analyzing data efficiently. Whether for algorithmic computations, spreadsheet analysis, or data retrieval tasks, these functions provide users with the flexibility and power to handle complex data structures effectively. Understanding and leveraging these functions can greatly enhance productivity and streamline decision-making processes in various domains.

What-If Analysis- Scenario Manager

The session commenced with an insightful overview of What-If Analysis employing Scenario Manager and its pivotal role in decision-making processes. This powerful technique allows for the exploration of diverse scenarios and their potential outcomes. Scenario Manager, a

feature commonly integrated into spreadsheet software like Microsoft Excel, facilitates the creation, management, and comparison of various scenarios, enabling users to assess their impact on critical variables. What-If Analysis serves as a cornerstone in decision-making, offering a systematic approach to examine different scenarios and their associated outcomes.

What-If Analysis- Goal Seek and Sensitivity Analysis

What-If Analysis, specifically focusing on two powerful techniques- Goal Seek and Sensitivity Analysis. These techniques serve as guiding lights in the realm of decision-making, offering clarity amidst uncertainty and empowerment in strategic choices. The presentation commenced with an in-depth discussion on Goal Seek, portraying it as a compass for problem-solving. The expert emphasized its utility in scenarios where a specific target must be achieved, yet the path to reach it remains unclear. Through iterative adjustments of input parameters, Goal Seek automates the process of finding the optimal solution, enabling decision-makers to navigate complex landscapes with precision and confidence. Following Goal Seek, attention shifted to Sensitivity Analysis, portrayed as a beacon of insight amidst uncertainty. The expert illustrated its importance in understanding the interplay between variables and their impact on outcomes. By systematically varying input parameters and observing their effects on key metrics, Sensitivity Analysis provides decision-makers with a comprehensive understanding of potential scenarios, equipping them to anticipate and adapt to changing circumstances effectively.

Creating Dynamic Charts and Graphs

The session aimed to equip participants with the knowledge and skills to effectively visualize data in a dynamic and interactive manner. The session commenced with an overview of dynamic chart creation techniques. Participants were guided through the process of selecting appropriate chart types based on the nature of the data and the intended audience. Emphasis was placed on incorporating dynamic features such as data labels, legends, and axis titles to enhance the clarity and readability of the charts. Following chart creation, the focus shifted to designing interactive graphs that enable users to explore data dynamically. Participants learned how to incorporate interactive elements such as dropdown menus, sliders, and checkboxes to allow for real-time data filtering and manipulation. The expert highlighted the importance of usability and user experience in designing interactive graphs that engage and empower users to derive insights from the data. Another key aspect covered in the session was data integration and automation. Participants were introduced to tools and techniques for seamlessly integrating data from multiple sources into their charts and graphs. Additionally,

they learned how to automate the updating of charts and graphs to ensure that visualizations reflect the most current data at all times.

Take Away Message:

- Stack operations, VLOOKUP, and XLOOKUP are essential for managing and analyzing data efficiently.
- XLOOKUP expands on VLOOKUP, making data analysis more versatile by searching across rows and columns
- Scenario: Representing a unique combination of input parameters.
- Changing Cells: Input variables whose values can be modified to generate different scenarios.
- Result Cells: Output variables reflecting calculated results based on the input values.
- What-If Analysis techniques, Goal Seeking and Sensitivity Analysis
- Dynamic charts and graphs
- Dynamic visualizations help analyze trends, spot patterns, and share insights effectively in areas like finance, marketing, healthcare, and beyond.

The sessions on Dynamic Array functions, What-If Analysis techniques and creating dynamic charts and graphs have been immensely valuable. Participants have been equipped with powerful tools to navigate complexities, make informed decisions, and communicate insights effectively.

Participants List

S.No	Name	Designation	Department	Institution/ Organisation Name
1	Mr. P.J. Jesuraj	Secretarial Assistant	MBA	Sona College of Technology
2	Mr. Anandhakumar K N	Technical Assistant	Mechanical Engineering	Kongu Engineering College
3	Ms. A.S.Geetha	Programmer	IQAC	K S R Institute for Engineering and Technology
4	Mr. S Lingeshwaran	Technical Assistant	MATHEMATICS	Kongu Engineering College
5	Mrs. V Sri Pallavi	Trainee Secretarial Assistant	MCA	Sona College of Technology
6	Mr. L.Prasath	Lab Technician	MCA	Sona College Of Technology

7	Mr. Avinash Jain M	Assistant Instructor	CIVIL ENGINEERING	JNNCE
8	Mrs. Dr. Jasper Jemima. G D	Assistant Professor	ECONOMICS	Margregorios college of Arts & Science
9	Ms. Aditi Tiwari	P.A. to Director	Registrar Office	Kanpur Institute of Technology
10	Ms. Swathi S Narayan	IQAC Secretary	IQAC	St. Joseph's University
11	Mr. Abraham Daniel . M	IQAC - Data Entry Operator	IQAC	St. Joseph's University
12	Mrs. M Santhakumari	Programmer	Physics	KSR Institute of Engineering and Technology
13	Ms. Royena Belinda Barbosa	LDC	ADMINISTRATION	Don Bosco College of Engineering
14	Mr. Kulbhushan Ashokrao Pawar	Lab. Assistant	Civil Engineering	Rajarambapu Institute of Technology
15	Mr. Jotiram S. Jadhav	Lab Assistant	Electronics & Telecommunication Engineering	Rajarambapu Institute of Technology, Sakharale
16	Mr. P Chennakrishnan	Assistant Professor	Economics	Thiruvalluvar University
17	Mrs. Brunda N	HR	Administrative office	Nagarjuna College of engineering and Technology
18	Mrs. K.Dhiviyasaran	Lab Assistant	Physics	K S R institute for Engineering And Technology
19	Mr. karthik T	Lab Technician	Electronics and Communication Engineering	Sona College Of Technology
20	Mr. Digamber Damodar Mayekar	Accountant	Finance & Accounts	National Institute of Technology Goa
21	Ms. Sneha S. Jadhav	Junior Assistant- Outsourced	Administration- Finance and Accounts	National Institute of Technology Goa
22	Mrs. Aarthi	Technical Assistant	Information technology	Avinashilingam Institute for home science and higher education for women
23	Mr. Karthikeyan.C.S	System Administrator	CIMC	Avinashilingam Institute for Home Science-School of Engineering
24	Mr. Satheesh S	Technical Support Staff	CIMC	Avinashilingam Institute for Home Science and Higher Education for Women
25	Mrs. Dr. R. Radha	Assistant Professor (SG)	Food Service Management and Dietetics	Avinashilingam Institute for Home Science and Higher Education for Women
26	Mrs. Vaitheki J	Multi Task Assistant	Tourism Management	Avinashilingam Institution
27	Mrs. B. Pragathi Ananda Kumaran	Teaching Assistant	Commerce and Management	Avinashilingam Institute for Home Science and Higher Education for Women
28	Mrs. R Malashri	Typist	School of Allied and Healthcare Sciences	Avinashilingam Institute for Home Science and Higher Education for Women

29	Ms. R. Lakshmi Priya	Teaching Staff	BBA RM	Avinashilingam Institute for Home Science and Higher Education for Women
30	Mrs. Meenakshi V	Multi Task Executive	Physician Assistant	Avinashilingam Institute for Home science and Higher Education for women
31	Ms. k. Devi	Assistant Professor (SS)	Food Science and Nutrition	Avinashilingam Institute for Home Science and Higher Education for Women
32	Mrs. Seetha S	Teaching assistant	B.com (CS)	Avinashilingam institute of home and science for higher education for women
33	Mrs. Smaila. I	Teaching assistant	B.com cs	Avinashilingam institute of home and science for higher education for women
34	Mrs. Adalarasi. J	Teaching Assistant	BBA	Avinashilingam Institute for Higher education for women
35	Mr. Mallela Kishore	Computer Operator	Department of Information Technology	CBIT (chaitanya Bharathi Institute of Technology)

Sample Certificate

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 Coimbatore-641043, TamilNadu, India

AIU - Avinashilingam Institute - Academic & Administrative Development Centre (AIU-AI-AADC)


CERTIFICATE OF PARTICIPATION


Certificate No: AIU - AI - AADC/ 2024 /03/005


This is to certify that


Mrs. V Sri Pallavi
 Trainee Secretarial Assistant, Department of Computer Applications
 Sona college of Technology, Salem


has participated in the Short-Term Capacity Building Programme on
 “Excel Data Mastery: Advanced Analysis & Reporting” conducted by
 AIU - Avinashilingam Institute – Academic & Administrative Development Centre (AIU - AI- AADC)
 from 25/04/2024 to 27/04/2024 and her performance was Excellent.


 Dr. K. Ramya
 Nodal Officer, AIU-AI-AADC


 Dr. Amarendra Pani
 Joint Director & Head
 Research Division, AIU


 Dr. Pankaj Mittal
 Secretary General
 AIU


 Dr. H. Indu
 Registrar i/c
 Avinashilingam Institute


 Dr. V. Bharathi Harishankar
 Vice Chancellor
 Avinashilingam Institute