



Data Administration and Centralized Participant Tracking at Selangor Technical Skills Development Centre (STDC)

^{1,*} Shasya Irsalina Mohamed Shamri & ²Nazatul Alya Afrina binti Zahari

¹Faculty of Computer and Mathematical Sciences, Universiti Teknologi MARA,
40450 Shah Alam, Selangor, Malaysia

²Selangor Technical Skills Development Centre (STDC), No 1, Lot 24,
Worldwide@7, Jalan Lazuardi 7/29, Persiaran Tun Arshad Ayub, Seksyen 7, 40000 Shah
Alam, Selangor, Malaysia

¹2021481186@tudent.uitm.edu.my

*Corresponding author

Received: 1/9/2025

Revised: 25/9/2025

Accepted: 20/10/2025

Published: 5/11/2025

ABSTRACT

This technical report details an administrative and data management study conducted at the Shah Alam branch of the Selangor Technical Skills Development Centre (STDCx), a prominent institution focusing on advanced manufacturing, industrial robotics, and digital technologies. The study aims to evaluate and optimize the data administration workflows utilized to manage participant records for high-level technical training programs, including Dassault Systèmes, Apple SwiftUI, Mendix, and FESTO. Large volumes of unstructured participant data were collected via Google Forms and systematically consolidated into a centralized master dataset using Microsoft Excel. Excel tools such as Power Query and the VLOOKUP function were employed to clean the data, eliminate duplicates, and standardize fields across the master reference list. Additionally, a rigorous status tracking system was implemented to monitor participant attendance confirmations and the submission of mandatory administrative documentation, specifically IKTISASS forms. The results demonstrated that applying structured data consolidation and conditional formatting significantly reduced administrative errors and missing records. This methodical approach to data tracking enhanced the overall workflow efficiency, ensuring that all participants successfully met their administrative prerequisites prior to commencing their industrial training modules.

Keywords: Data consolidation, IKTISASS forms, Microsoft Excel, Participant tracking, Selangor Technical Skills Development Centre (STDC).

INTRODUCTION

The Selangor Technical Skills Development Centre (STDC) is a premier technical and vocational training institution established by the Selangor State Government. The institution's mission is to address the growing demand for skilled professionals in Malaysia's industrial sector by providing hands-on, industry-driven training. Under the leadership of CEO Dr. Harizal Hamid, STDC operates two strategic

branches. The Kuala Selangor branch focuses on industrial automation, mechanical, and electrical engineering, while the Shah Alam branch, known as STDCx, specializes in advanced manufacturing, industrial robotics, and digital technologies tailored for Industry 4.0.

To ensure its curriculum remains aligned with modern standards, STDC collaborates with global industry leaders such as Dassault Systèmes, FESTO, Siemens, Mendix, and Apple. The department attached to STDCx manages these specialized training programs. With the continuous intake of students across various advanced technology programs, the administration faces the significant challenge of managing large volumes of participant data, verifying registrations, and tracking administrative compliance.

To optimize these operations, analytical data management tasks were executed. The first task focused on consolidating fragmented participant data from multiple training programs into a single, reliable master dataset using Microsoft Excel. The second task involved establishing a robust administrative tracking system to monitor attendance confirmations and the submission of essential documentation. This study highlights how structured data entry and validation techniques directly improve administrative efficiency and workflow coordination within a large-scale training institution.

THE PROPOSED METHOD

Data Consolidation Using Excel

Participant data for various programs (e.g., Basic 3DExperience, Apple SwiftUI) was initially gathered via Google Forms and stored in fragmented Google Sheets (See Figure 1). The objective was to merge this raw data into a centralized master dataset. Power Query was utilized to append the data from various sheets. Data cleaning was then performed using Excel text functions to rectify inconsistencies, such as formatting errors in contact numbers and email addresses, and to eliminate duplicate entries.

To further enhance data integrity, the VLOOKUP function was heavily applied. This function was used to cross-reference and validate participant details against a master reference list, quickly identifying any discrepancies. VLOOKUP also facilitated the rapid retrieval of additional information, such as specific course dates and registration timestamps, from separate sheets (See Figure 2).

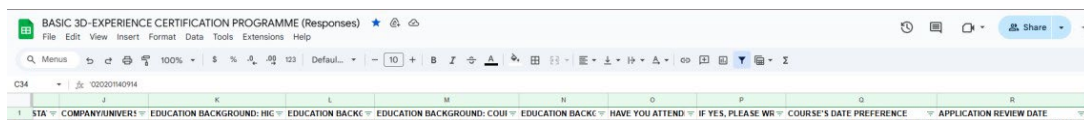
Data Administration and Tracking

Beyond consolidation, it was imperative to systematically monitor the status of each participant to ensure they had fulfilled all administrative prerequisites before attending their scheduled training sessions. A "Form Checked" column was instituted within the master data file to log when a participant's data was last updated.

Specific tracking was applied to monitor the submission of mandatory IKTISASS forms and attendance confirmations (See Figure 3 and Figure 4). Utilizing conditional formatting combined with the VLOOKUP function, the system automatically highlighted missing records or incomplete details, enabling immediate follow-up with the respective participants.

Figure 1

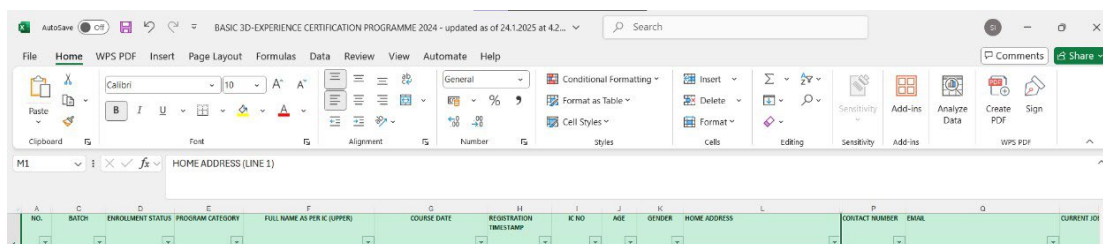
Google sheet for participant registration



STA	COMPANY/UNIVERSITY	EDUCATION BACKGROUND: HIG	EDUCATION BACK	EDUCATION BACKGROUND: COU	EDUCATION BACK	HAVE YOU ATTEND	IF YES, PLEASE WR	COURSE'S DATE PREFERENCE	APPLICATION REVIEW DATE
-----	--------------------	---------------------------	----------------	---------------------------	----------------	-----------------	-------------------	--------------------------	-------------------------

Figure 2

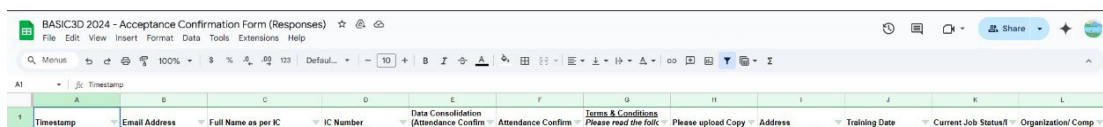
The consolidated participants details overview



NO.	BATCH	ENROLLMENT STATUS	PROGRAM CATEGORY	FULL NAME AS PER IC (UPPER)	COURSE DATE	REGISTRATION TIMESTAMP	IC NO.	AGE	GENDER	HOME ADDRESS	CONTACT NUMBER	EMAIL	CURRENT JOB
-----	-------	-------------------	------------------	-----------------------------	-------------	------------------------	--------	-----	--------	--------------	----------------	-------	-------------

Figure 3

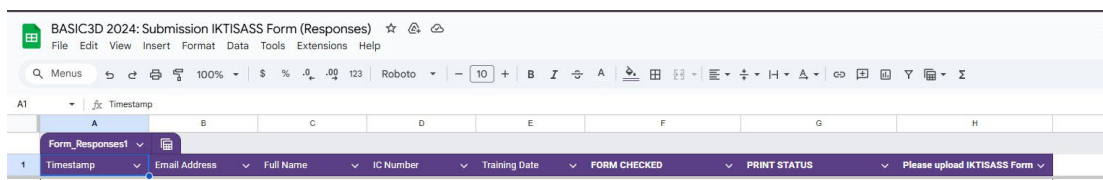
Google sheet for the participant acceptance confirmation form



Timestamp	Email Address	Full Name as per IC	IC Number	Data Consolidation (Attendance Confirm)	Terms & Conditions (Please read the folc)	Please upload Copy	Address	Training Date	Current Job Status	Organization/ Comp
-----------	---------------	---------------------	-----------	---	---	--------------------	---------	---------------	--------------------	--------------------

Figure 4

Submission tracking of IKTISASS forms



Timestamp	Email Address	Full Name	IC Number	Training Date	FORM CHECKED	PRINT STATUS	Please upload IKTISASS Form
-----------	---------------	-----------	-----------	---------------	--------------	--------------	-----------------------------

EVALUATION AND RESULTS

Improved Data Accuracy

The implementation of the data consolidation methodology significantly rectified the initial inconsistencies found in the raw Google Forms data. By centralizing the information into a structured master dataset, the administration successfully eliminated duplicate entries and standardized formatting. The application of the VLOOKUP function proved highly effective in verifying that the registered participants precisely matched the master reference list, thereby reducing mismatches and creating a reliable database for future reporting and categorization.

Enhanced Workflow Efficiency

The structured tracking system dramatically improved the efficiency of participant management. By utilizing the "Application Review Date" column and conditional formatting, the administration gained real-time visibility into the status of registrations. This proactive approach allowed the team to quickly detect and resolve issues, such as unsubmitted IKTISASS forms or unconfirmed attendance, before the training programs commenced. Consequently, the systematic validation of records minimized last-minute administrative delays, facilitating smooth communication with training coordinators and ensuring high administrative compliance.

CONCLUSION

The analytical and administrative tasks executed at the Selangor Technical Skills Development Centre (STDCx) underscore the fundamental importance of structured data management within educational and training institutions. By migrating from fragmented Google Sheets to a centralized, cleaned, and heavily validated Microsoft Excel master dataset, the organization significantly reduced administrative errors. The strategic use of the VLOOKUP function and conditional formatting not only streamlined the consolidation process but also created a reliable tracking mechanism for mandatory documentation, such as the IKTISASS forms. This methodical approach ensures that critical participant information is never overlooked, thereby optimizing the workflow for the training coordinators. For future improvements, it is recommended that the institution considers upgrading to a dedicated, automated Customer Relationship Management (CRM) or Student Information System (SIS) to handle large-scale registrations dynamically, further reducing the reliance on manual Excel monitoring.

ACKNOWLEDGEMENT

The author extends profound gratitude to Universiti Teknologi MARA for supporting this work. The author expresses sincere gratitude to the Selangor Technical Skills Development Centre (STDCx) for the opportunity to undertake this industrial training program. This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Conflict of Interest

The authors have no conflicts of interest to declare.

Non-funded

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

REFERENCES

STDC. (2024, September 2). *Home - STDC*. Retrieved from <https://stdcx.edu.my/home/>



This is an open access article under the CC BY-SA license
(<https://creativecommons.org/licenses/by-sa/4.0/>).