



Tribhuvan University
Faculty Of Management
Shanker Dev Campus
Putalisadak, Kathmandu

Lab Report on MS-Excel

Submitted To:

Department of BIM
Shanker Dev Campus

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Ashesh Neupane

Student of BIM Program

1st Semester



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Introduction

MS Excel

MS Excel is a commonly used Microsoft Office application. It is a spreadsheet program where one can record data in the form of tables. It is easy to analyse data in an Excel spreadsheet.

It consists of 1048576 rows and 16384 columns; a row and column together make a cell. It provides a user-friendly way to analyze and work with data.

Cell

A cell is the intersection of a row and a column on a spreadsheet. Each cell can contain data, such as text, numbers, or formulas, and is identified by a unique address, for example, A1, B2, etc.

Cell Reference

Cell Reference refers to the name of a cell or range of cells. It helps to identify a specific cell or a range of cells within a spreadsheet by using their column letter and row number. For example, "A1" refers to the cell at the intersection of column A and row 1. Cell references can be used in formulas and functions to dynamically use the data within those cells for calculations or analysis. There are three types of cell reference in excel i.e. Relative Cell Reference, Absolute Cell Reference & Mixed Cell Reference. Choosing the right type of cell reference is crucial for creating effective and efficient Excel models and formulas.

Features of MS Excel

- ❖ Home Tab: It provides the basic facilities like changing the font, size of text, editing the cells in the spreadsheet, auto sum, etc.
- ❖ Insert Tab: It provides facilities like inserting tables, pivot tables, images, clip art, charts, links, etc.
- ❖ Page Layout: It provides all the facilities related to the spreadsheet-like margins, orientation, height, width, background etc. The worksheet's appearance will be the same in the hard copy as well.
- ❖ Formulas: It is a package of different in-built formulas/functions which can be used by user just by selecting the cell or range of cells for values.
- ❖ Data: The Data Tab helps to perform different operations on a vast set of data like analysis through what-if analysis tools and many other data analysis tools, removing duplicate data, transpose the row and column, etc.
- ❖ Review: This tab provides the facility of thesaurus, checking spellings, translating the text, and helps to protect and share the worksheet and workbook.
- ❖ View: It contains the commands to manage the view of the workbook, show/hide ruler, gridlines, etc. freezing panes, and adding macros.



Advantages and Disadvantages

Some advantages of MS Excel are listed below:

- Versatile data management for storing, organizing, and manipulating information.
- Advanced analysis capabilities with tools like PivotTables and statistical functions.
- Comprehensive visualization options with charts and graphs for data presentation.
- Automation of tasks through macros, saving time and reducing errors.
- Real-time collaboration enabled by Microsoft's cloud services for teamwork.
- Extensive customization and flexibility to suit specific user or project needs.
- Applicable across a wide range of fields for tasks like financial modeling, inventory management, etc.
- High accessibility and compatibility with various platforms and devices.

Some disadvantages of MS Excel are listed below:

- Overwhelming complexity for beginners.
- Susceptibility to manual entry and formula errors.
- Excel can't help users to make quick decisions.
- It is not designed for collaborative work.
- It is difficult to troubleshoot or test.
- Challenges with handling very large datasets.
- Lack of built-in version control for tracking changes over time.



Applications of MS Excel

Microsoft Excel, a powerful spreadsheet software, has become an indispensable tool in various fields for data analysis, visualization, and management. Its versatility allows it to be used in myriad ways across different industries. Here are some key applications of MS Excel:

- **Data Analysis and Visualization:** Excel's robust data analysis tools (like pivot tables, filters, and advanced formulas) help in dissecting large datasets to find trends, patterns, and insights. Its charting capabilities allow users to visualize data through various graphs and charts, making it easier to understand and present.
- **Financial Management and Accounting:** Excel is widely used for budgeting, financial forecasting, and accounting. Businesses and individuals use it to track expenses, income, manage invoices, and analyze financial performance over time.
- **Project Management:** Excel's ability to organize tasks, schedules, and resources makes it a valuable tool for project management. Gantt charts for tracking project timelines and task dependencies can also be created using Excel templates.
- **Inventory Management:** Small and medium businesses often use Excel for inventory tracking and management. It helps in monitoring stock levels, orders, sales, and deliveries, ensuring efficient inventory control.
- **Educational Purposes:** In educational settings, Excel is used for teaching mathematical, statistical, and financial concepts. Students use Excel for various projects and assignments that require data manipulation and analysis.
- **Marketing Analysis:** Marketers use Excel to analyze campaign performance, track customer data, segment markets, and plan marketing strategies. It helps in understanding customer behaviors and preferences.
- **Scheduling:** Excel is often used for creating work schedules, planning events, or organizing appointments. Its flexibility allows for easy adjustments and updates to schedules.
- **Risk Management:** Excel's ability to model different scenarios helps in risk assessment and management. Companies can use it to predict potential risks and their impacts, aiding in strategic planning.



Objectives of MS Excel

The objective of this project is to leverage the powerful features of Microsoft Excel to manage, analyze, and visually represent student performance data efficiently and effectively. The project aims to accomplish the following specific objectives:

- **Data Organization and Management:** To create a structured and intuitive system for entering and storing student marks and related data, ensuring ease of access, modification, and analysis.
- **Automated Result Calculation:** To implement formulas and functions that automatically calculate total marks, grades, percentages, and other relevant metrics for each student, minimizing manual calculation errors and saving time.
- **Data Validation:** To ensure the integrity of the data entered into the Excel workbook by applying data validation rules. This will prevent incorrect data entry, such as invalid marks or grades, thus maintaining the accuracy and reliability of the result analysis.
- **Visual Data Representation:** To utilize Excel's charting tools to create pie charts and bar diagrams that visually represent the distribution of grades, performance metrics, and other key indicators. This visual representation aims to provide quick insights into the overall performance trends and outliers, facilitating better understanding and decision-making.
- **Mathematical Calculations and Analysis:** To perform complex mathematical calculations on the dataset to derive meaningful insights, such as class averages, highest and lowest scores, standard deviation, etc. This analysis will help in identifying areas of strengths and weaknesses, enabling targeted interventions.
- **Interpretation and Reporting:** To synthesize the analyzed data into interpretable formats that can be easily understood by stakeholders, including students, teachers, and administrators. The project seeks to provide actionable insights into student performance that can guide teaching strategies, academic support, and policy decisions.
- **Skill Enhancement:** To provide an opportunity for users to enhance their proficiency in using Microsoft Excel for educational purposes. The project aims to demonstrate how Excel can be a potent tool not just for business, but also in educational settings, fostering skills that are valuable in both academic and professional contexts.

By achieving these objectives, the project will not only streamline the process of managing and analyzing student results but also empower educational stakeholders with valuable insights into student performance, facilitating informed decision-making and contributing to the overall enhancement of the educational experience.



Lab Works

1. Mark ledger with field names roll number, name, marks obtained in 5 subjects, total marks, percentage, result and rank with colour assigned to top 3 and failed students.

Roll Number	Name	Mathematics	FIT	FBM	C Programmin	English	Total	Percentage	Result	Rank
1	Ashesh Neupane	92	88	55	91	75	401	80.2	PASS	1
2	Aviral Bhattarai	82	89	50	90	80	391	78.2	PASS	2
3	Bikesh Yadav	72	85	61	88	70	376	75.2	PASS	4
4	Dipak Sharma	90	82	52	89	65	378	75.6	PASS	3
5	Durga Sharma	45	79	32	85	55	296	59.2	PASS	5
6	Govinda Dahal	49	75	31	5	45	205	41	PASS	9
7	Hritik Khatiw	50	71	30	44	55	250	50	PASS	8
8	Hima Thapa	65	55	24	1	50	195	39	FAIL	10
9	Ishan Rai	81	78	52	10	55	276	55.2	PASS	7
10	Prajwal Shrestha	44	45	18	18	53	178	35.6	FAIL	11
11	Samila Bhandari	91	70	50	20	54	285	57	PASS	6
12	Saroj Baniya	41	35	16	25	61	178	35.6	FAIL	11

Formula Used:

Total : $=(C2+D2+E2+F2+G2)$ $[(\text{Mathematics}+\text{FIT}+\text{FBM}+\text{C Programming}+\text{English})]$

Percentage : $=(H2/5)$ $[(\text{Total}/5)]$

Result : $=\text{IF}(I2<40, \text{"FAIL"}, \text{"PASS"})$ $[\text{IF}(\text{Percentage}<40, \text{"FAIL"}, \text{"PASS"})]$

Rank : $=\text{RANK}(I2, \$I\$2:\$I\$13, 0)$

Conditional Formatting

Roll Number	Name	Mathematics	FIT	FBM	C Programmin	English	Total	Percentage	Result	Rank
1	Ashesh Neupane	92	88	55	91	75	401	80.2	PASS	1
2	Aviral Bhattarai	82	89	50	90	80	391	78.2	PASS	2
3	Bikesh Yadav	72	85	61	88	70	376	75.2	PASS	4
4	Dipak Sharma	90	82	52	89	65	378	75.6	PASS	3
5	Durga Sharma	45	79	32	85	55	296	59.2	PASS	5
6	Govinda Dahal	49	75	31	5	45	205	41	PASS	9
7	Hritik Khatiw	50	71	30	44	55	250	50	PASS	8
8	Hima Thapa	65	55	24	1	50	195	39	FAIL	10
9	Ishan Rai	81	78	52	10	55	276	55.2	PASS	7
10	Prajwal Shrestha	44	45	18	18	53	178	35.6	FAIL	11
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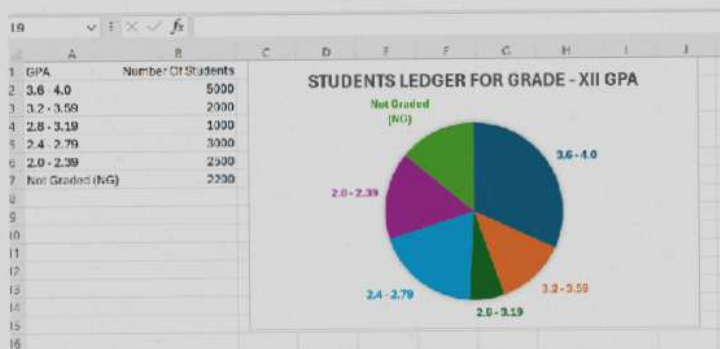
2. Final Grade evaluation where first, second and third term examination contribute 25%, 25% and 50% each.

A	B	C	D	E	F	G
Roll Number	Name	First Term (25%)	Second Term (25%)	Third Term (50%)	Final Result	
1	Ashesh Neupane	85	88	92	89.25	
2	Hari Dahal	78	72	82	78.5	
3	Shyam Bhatta	55	45	64	57	
4	Raj KC	56	39	58	52.75	
5	Puskar Sharma	81	79	77	78.5	
6	Rabi Mishra	81	65	75	74	
7	Jenish Oli	81	83	85	83.5	
8	Prem Bdr. Deuba	75	77	74	75	
9	Prashant Shrestha	72	70	69	70	
10	Ram Thapa	65	64	68	66.25	
11	Mousoon Rana	62	59	58	59.25	
12	Ashish Acharya	74	65	54	61.75	

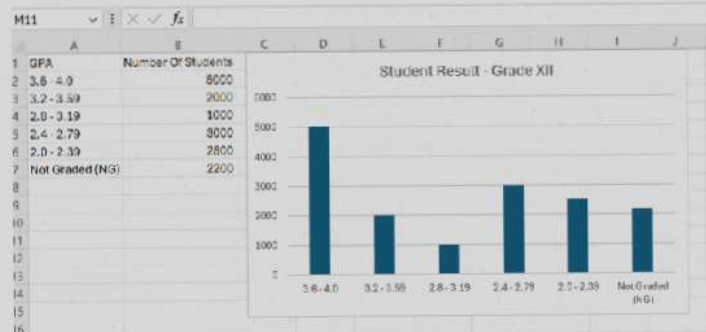
Formula Used:

Final Result: $=((C2/4)+(D2/4)+(E2/2))$ [= (First Term/4)+(Second Term/4)+(Third Term/2)]

3. Pie Chart in MS Excel



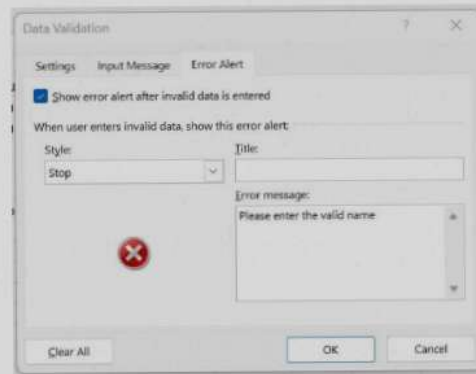
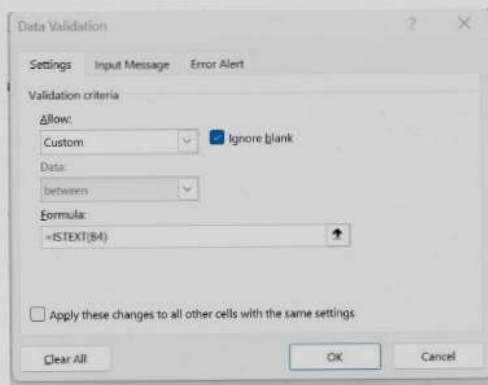
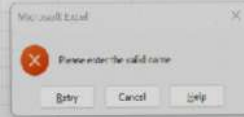
4. Bar Diagram in MS Excel





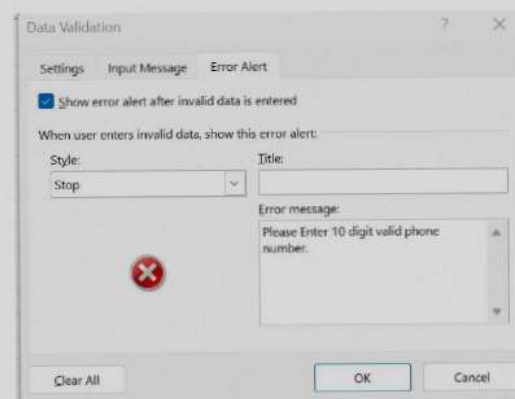
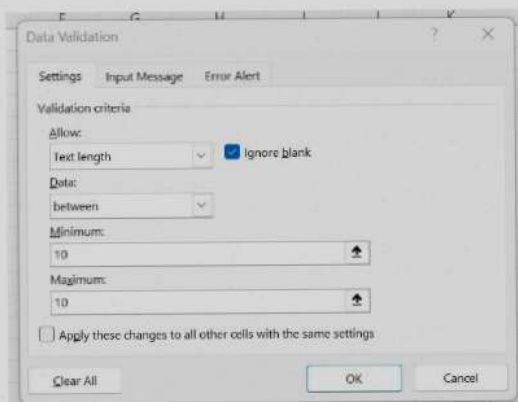
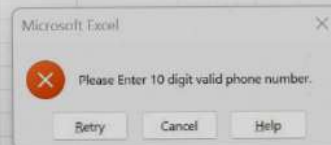
5. Data validation in MS Excel Text Validation

Old Family Stores						
			List of items			
Customer ID	Customer Name	Contact. No	Fruits	Drinks	Price	Quantity
1	123					
2						
3						
4						
5						
6						



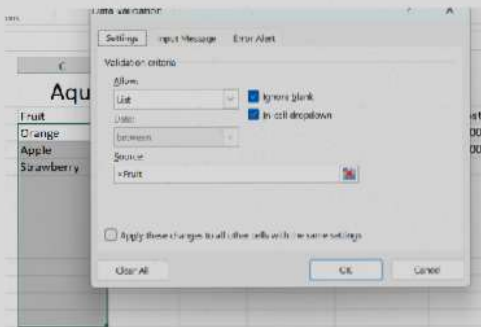
Limiting the Number of Digits or Letter

Old Family Stores						
			List of Items			
Customer ID	Customer Name	Contact. No	Fruits	Drinks	Price	Quantity
1	Ashesh	123				
2	Raju					
3	Ramesh					
4	Ravi					
5	Saurav					
6	Gaurav					





List



A	B	C	D	E	F	G	H
					Old Family Stores		
			List of Items				
Customer ID	Customer Name	Contact. No	Fruits	Drinks	Price	Quantity	Total Amount
1	Ashesh	9876543210	Orange	Mirinda	400	5	2000
2	Raju	9812345670	Apple	Coke	200	2	400
3	Ramesh	9861234570	Strawberry	Sprite	100	7	700
4	Ravi	9899999999	Apple	Fanta	150	3	450
5	Saurav	9800000000	Orange	Pepsi	120	1	120
6	Gaurav	9811111111	Strawberry	Dew	130	4	520

Formulae

Text validation= ISTEEXT(B4) in Custom

Number validation= Allow 'Whole Number' and set minimum and maximum value

List validation= Allow 'List' and write the source name with '=' in front, create list in another sheet.

Error alert= Specify the message and it will appear when the entry is invalid.

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