

Spreadsheet Add-in Review



MARKETING TECHNOLOGIES GROUP

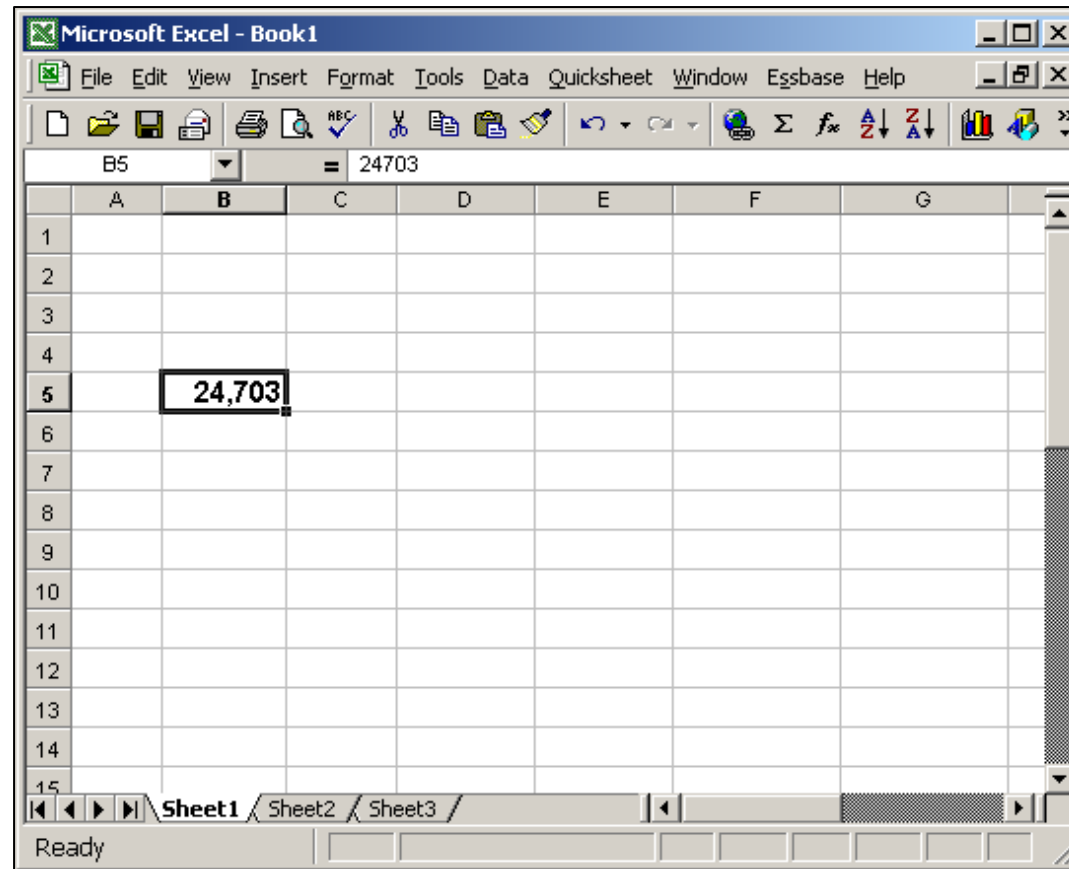
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What is a Multidimensional Database?

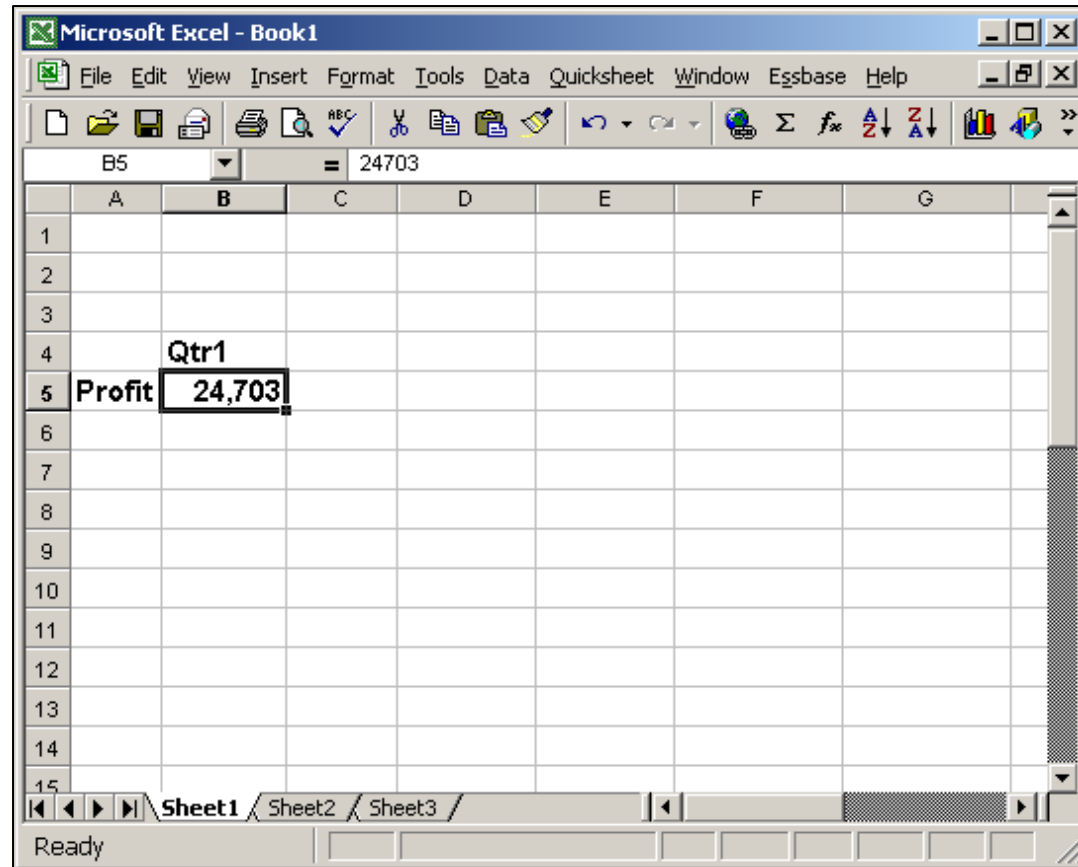
- Conceptual model of the way we think about business
- Presents data in a format that is meaningful for making decisions
- Stores and retrieves data based on the intersections of dimension members

Row and Column Intersections



Essbase Uses Business Descriptions

In Essbase, business descriptions are called **member names**



Row and Column Fields

The screenshot shows a Microsoft Excel spreadsheet with the following data:

	A	B	C	D	E	F	G
1							
2							
3							
4		Qtr1	Qtr2	Qtr3	Qtr4	Year	
5	Sales	95,820	101,679	105,215	98,141	400,855	
6	COGS	42,877	45,362	47,343	43,754	179,336	
7	Margin	52,943	56,317	57,872	54,387	221,519	
8	Marketing	15,839	16,716	17,522	16,160	66,237	
9	Payroll	12,168	12,243	12,168	12,168	48,747	
10	Misc	233	251	270	259	1,013	
11	Total Expenses	28,240	29,210	29,960	28,587	115,997	
12	Profit	24,703	27,107	27,912	25,800	105,522	
13							
14							
15							

Two Dimensional Model

Income Statement

Actual

Jan Feb Mar ... Dec

Sales

Cost Of Sales

Gross Profit

SG&A

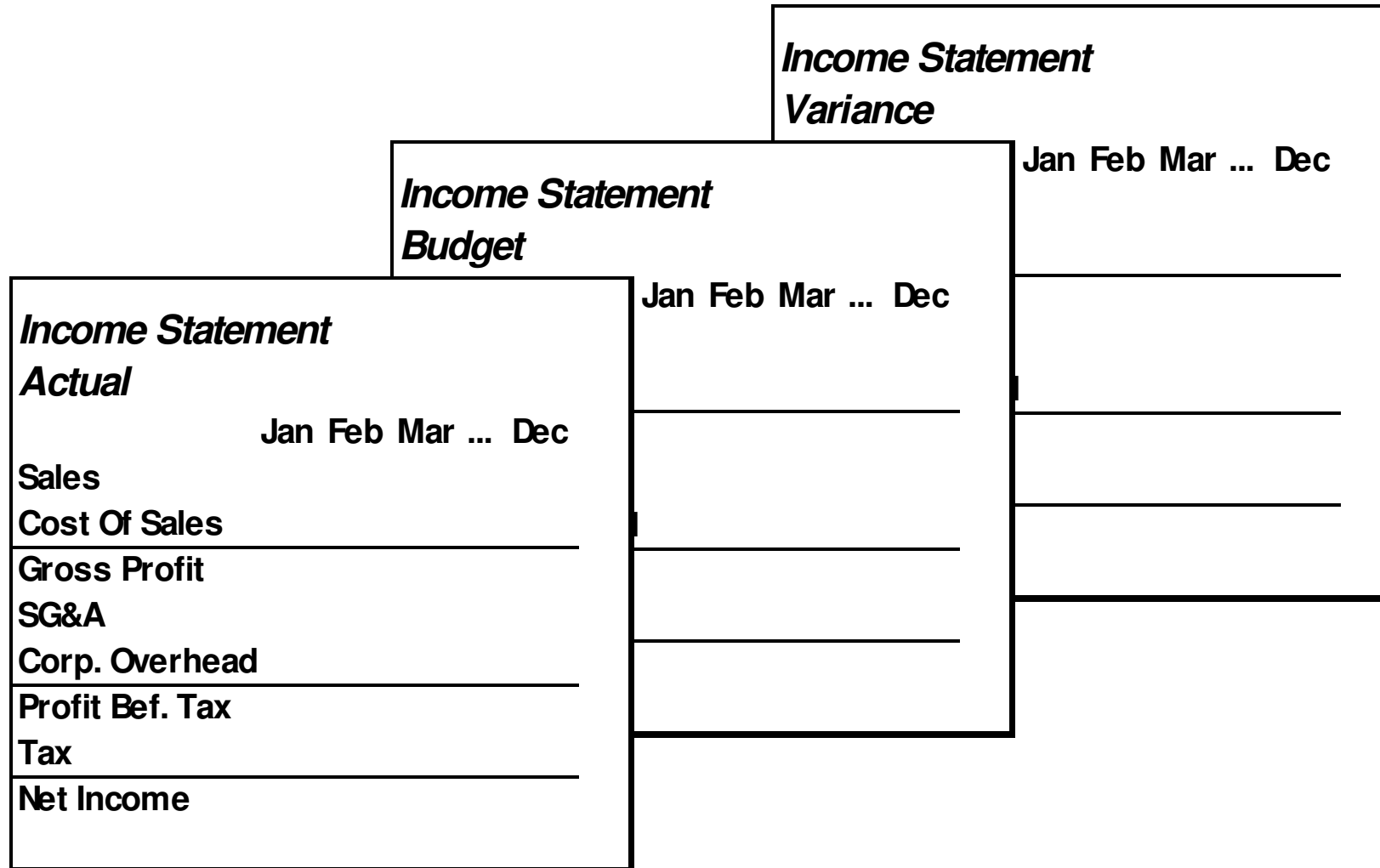
Corp. Overhead

Profit Bef. Tax

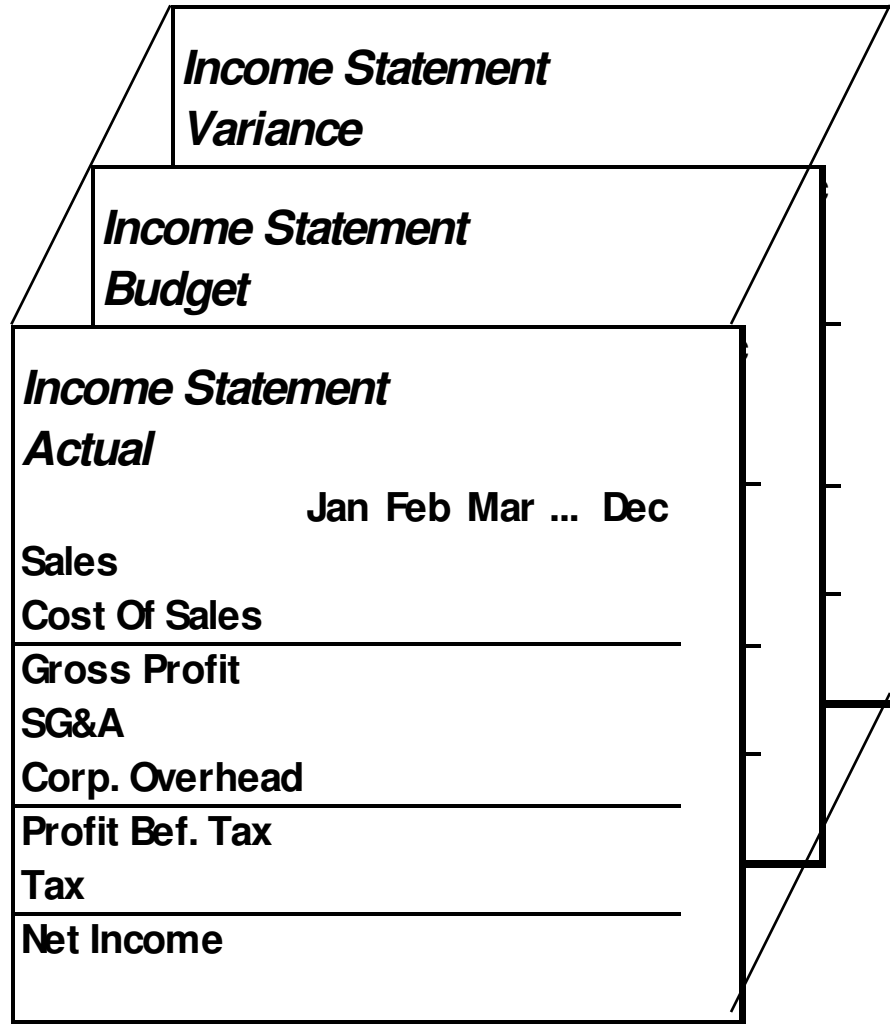
Tax

Net Income

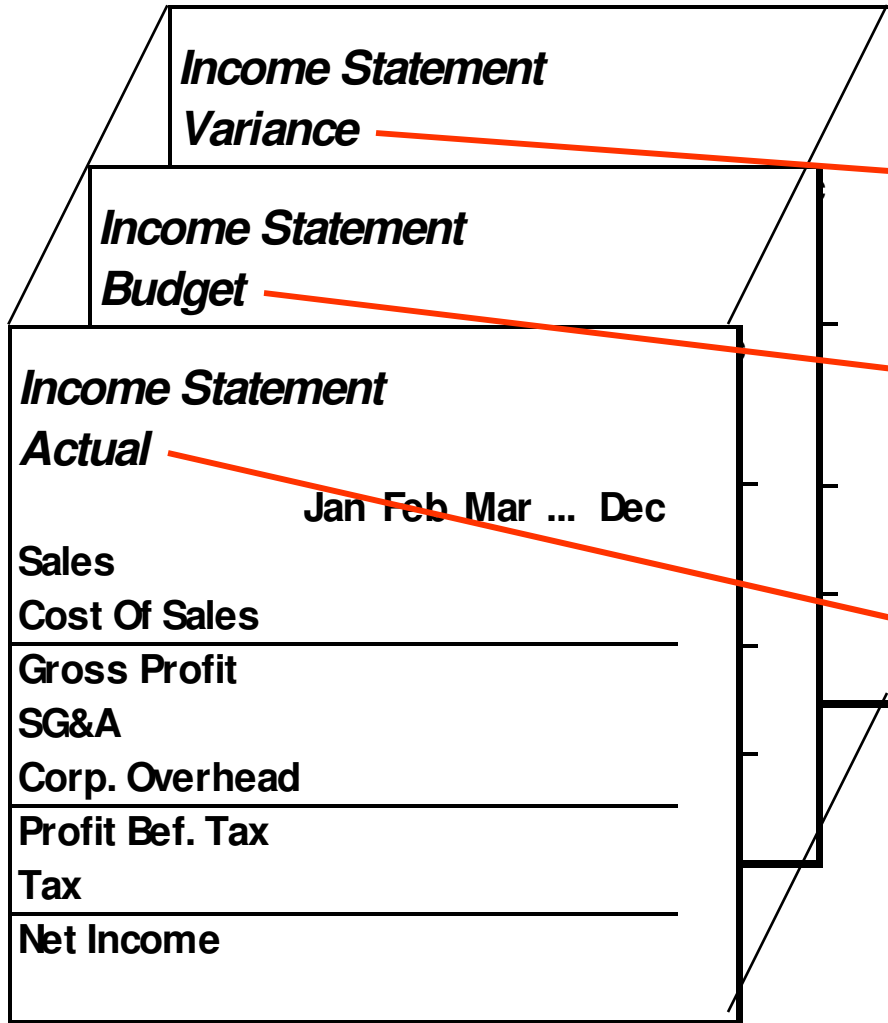
Three Dimensional Model



A Three Dimensional Cube Of Data



Page Fields Slice Additional Dimensions



	Qtr1	Qtr2	Qtr3	Qtr4	Year
Sales	95,820	101,679	105,215	98,141	400,855
COGS	42,877	45,362	47,343	43,754	179,336
Margin	52,943	56,317	57,872	54,387	221,519
Marketing	15,839	16,716	17,522	16,160	66,237
Payroll	12,168	12,243	12,168	12,168	48,747
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Total Expenses	28,240	29,210	29,960	28,587	115,997
Profit	24,703	27,107	27,912	25,800	105,522

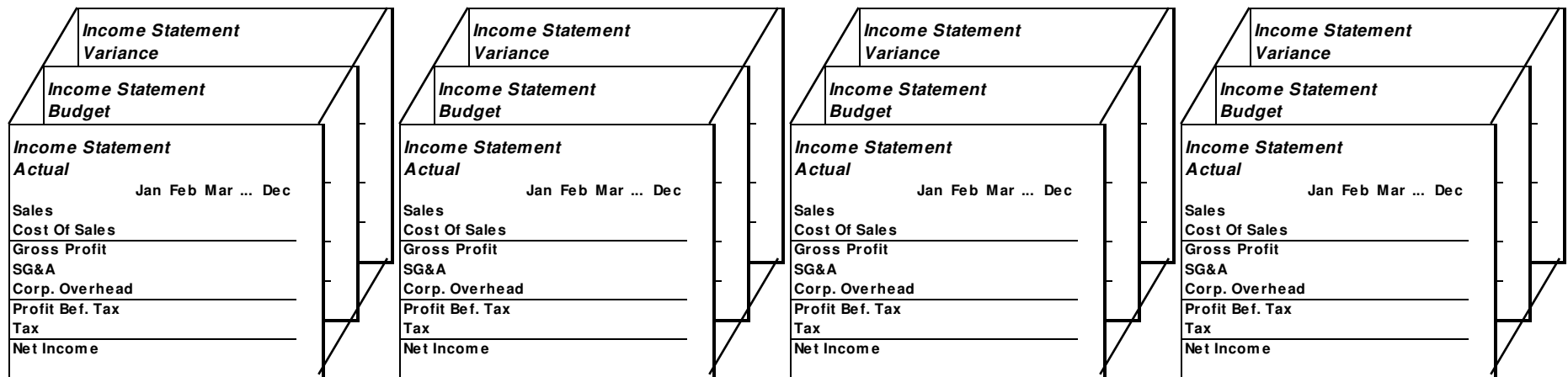
Drill Down to Regions

USA

Europe

Asia

All Regions



Drill Down to Regions x Product

USA

Europe

Asia

All Regions

Hardware

Income Statement Variance	
Income Statement Budget	
Income Statement Actual	
Actual	Jan Feb Mar ... Dec
Sales	
Cost Of Sales	
Gross Profit	
SG&A	
Corp. Overhead	
Profit Bef. Tax	
Tax	
Net Income	

Income Statement Variance	
Income Statement Budget	
Income Statement Actual	
Actual	Jan Feb Mar ... Dec
Sales	
Cost Of Sales	
Gross Profit	
SG&A	
Corp. Overhead	
Profit Bef. Tax	
Tax	
Net Income	

Income Statement Variance	
Income Statement Budget	
Income Statement Actual	
Actual	Jan Feb Mar ... Dec
Sales	
Cost Of Sales	
Gross Profit	
SG&A	
Corp. Overhead	
Profit Bef. Tax	
Tax	
Net Income	

Income Statement Variance	
Income Statement Budget	
Income Statement Actual	
Actual	Jan Feb Mar ... Dec
Sales	
Cost Of Sales	
Gross Profit	
SG&A	
Corp. Overhead	
Profit Bef. Tax	
Tax	
Net Income	

Software

Income Statement Variance	
Income Statement Budget	
Income Statement Actual	
Actual	Jan Feb Mar ... Dec
Sales	
Cost Of Sales	
Gross Profit	
SG&A	
Corp. Overhead	
Profit Bef. Tax	
Tax	
Net Income	

Income Statement Variance	
Income Statement Budget	
Income Statement Actual	
Actual	Jan Feb Mar ... Dec
Sales	
Cost Of Sales	
Gross Profit	
SG&A	
Corp. Overhead	
Profit Bef. Tax	
Tax	
Net Income	

Income Statement Variance	
Income Statement Budget	
Income Statement Actual	
Actual	Jan Feb Mar ... Dec
Sales	
Cost Of Sales	
Gross Profit	
SG&A	
Corp. Overhead	
Profit Bef. Tax	
Tax	
Net Income	

Income Statement Variance	
Income Statement Budget	
Income Statement Actual	
Actual	Jan Feb Mar ... Dec
Sales	
Cost Of Sales	
Gross Profit	
SG&A	
Corp. Overhead	
Profit Bef. Tax	
Tax	
Net Income	

All Products

Income Statement Variance	
Income Statement Budget	
Income Statement Actual	
Actual	Jan Feb Mar ... Dec
Sales	
Cost Of Sales	
Gross Profit	
SG&A	
Corp. Overhead	
Profit Bef. Tax	
Tax	
Net Income	

Income Statement Variance	
Income Statement Budget	
Income Statement Actual	
Actual	Jan Feb Mar ... Dec
Sales	
Cost Of Sales	
Gross Profit	
SG&A	
Corp. Overhead	
Profit Bef. Tax	
Tax	
Net Income	

Income Statement Variance	
Income Statement Budget	
Income Statement Actual	
Actual	Jan Feb Mar ... Dec
Sales	
Cost Of Sales	
Gross Profit	
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Corp. Overhead	
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Tax	
Net Income	

Income Statement Variance	
Income Statement Budget	
Income Statement Actual	
Actual	Jan Feb Mar ... Dec
Sales	
Cost Of Sales	
Gross Profit	
SG&A	
Corp. Overhead	
Profit Bef. Tax	
Tax	
Net Income	

Drill Down to Regions x Product

USA Europe Asia All Regions

Hardware

Software

	Actual	Product	Market		
	Qtr1	Qtr2	Qtr3	Qtr4	Year
Sales	95,820	101,679	105,245	98,141	400,855
COGS	42,877	45,362	47,343	43,754	179,336
Margin	52,943	56,317	57,872	54,387	221,519
Marketing	15,839	16,716	17,522	16,160	66,237
Payroll	12,168	12,243	12,168	12,168	48,747
Misc	233	251	270	259	1,013
Total Expenses	28,240	29,210	29,960	28,587	115,997
Profit	24,703	27,107	27,912	25,800	105,522

Income Statement Variance
Income Statement Budget
Income Statement Actual
Jan Feb Mar ... Dec

Sales
Cost Of Sales
Gross Profit
SG&A
Corp. Overhead
Profit Bef. Tax
Tax
Net Income

All Products

Essbase Report Page Elements

Page Fields

Actual Sales Market

Row Fields

Colas

Root Beer

Fruit Soda

Jan	Feb	Mar	Apr	May	Jun
100	200	300	400	500	600
100	200	300	400	500	600
100	200	300	400	500	600

Column Fields

You need one coordinate from each dimension to retrieve each data point.

Essbase Modeling: Features & Design



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Essbase Structure and Organization

- Dimensions
 - Made up of Members
 - Grouped into Hierarchies
- Relationship
 - Parent/Child/Sibling
 - Ancestors/Descendants
 - Generations/Levels

Dimensions

- Dimensions are MANY to MANY relationships

	North	South	East	West	All Regions
Hardware	46	80	14	70	211
Software	19			4	23
Services		75	67		142
All Products	65	156	81	74	376

Hierarchies

- Hierarchies are MANY to ONE relationships

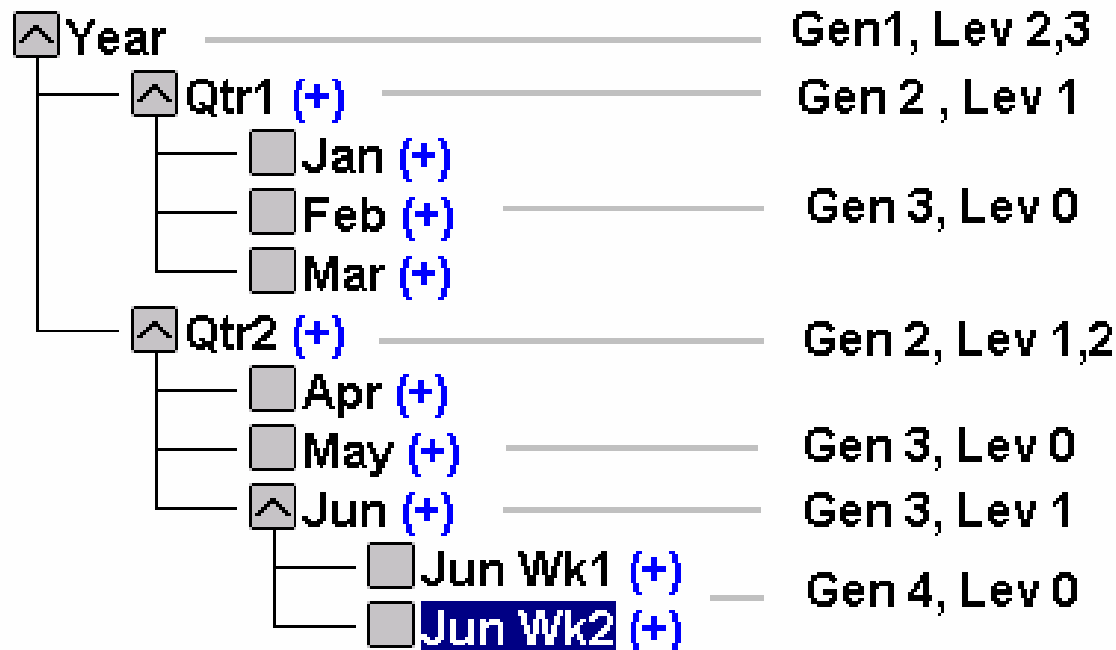
	North	South	East	West	All Regions
Hardware	46		14		60
Software				4	4
Services		75			75
All Products	46	75	14	4	139

All Products	All Regions	139
Hardware	All Regions	60
	North	46
	East	14
Software	All Regions	4
	West	4
Services	All Regions	75
	South	75

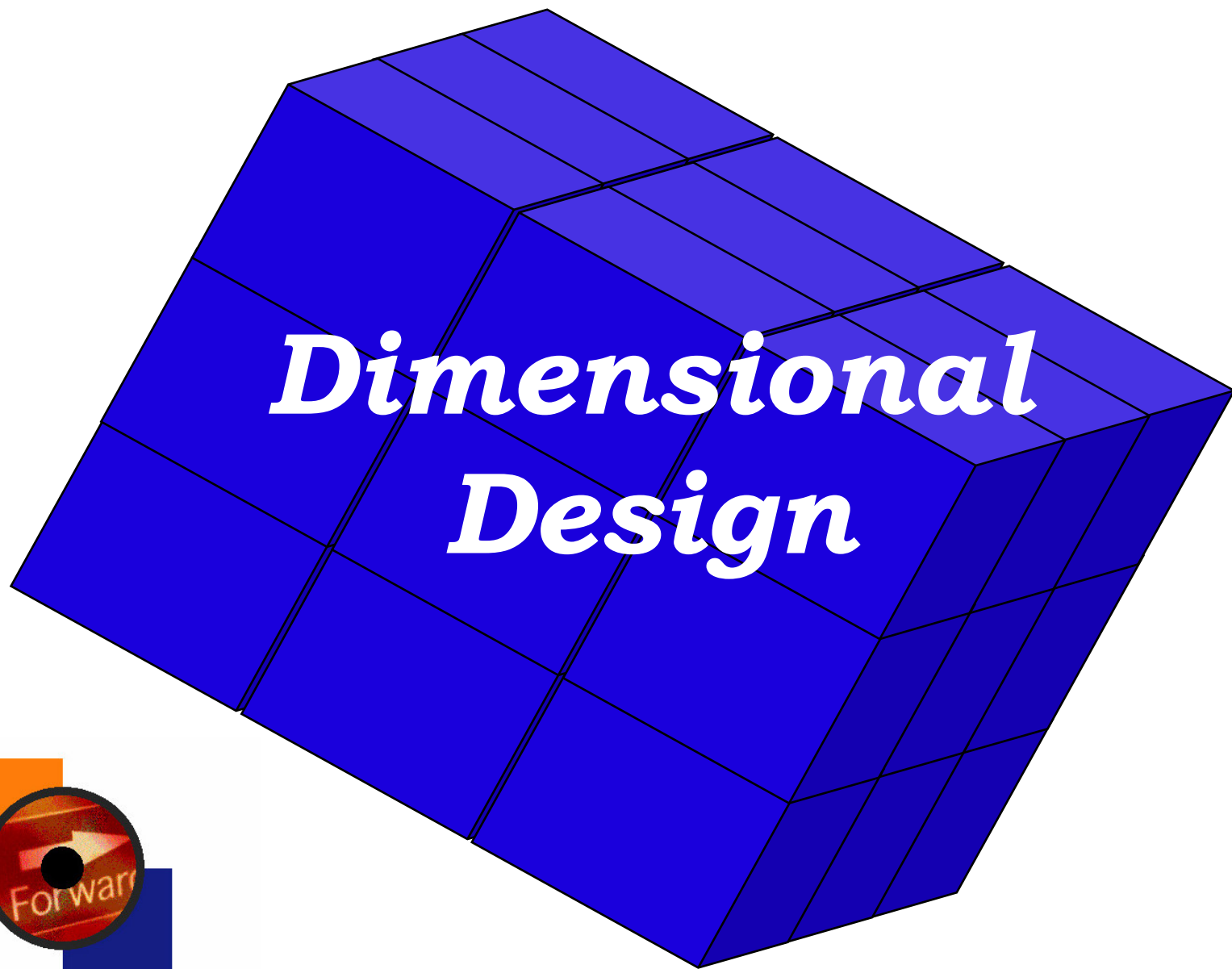
Dimensions and Hierarchies

- Dimensions are homogeneous categories of member names
- Hierarchies are Parent/Child relationships between member names

Hierarchies: Generations & Levels



- Generations are numbered down
- Levels are numbered up
- Dim name is always Gen 1
- Member may be more than 1 level in a ragged hierarchy



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Designing *Time* Dimensions

There are three common approaches the Time dimension:

1) One Time Dimension with Multiple Years

2002 Q1	2002 Q2	2002 Q3	2002 Q4	2002 Total	2003 Q1	2003 Q2	2003 Q3	2003 Q4	2003 total
---------	---------	---------	---------	-------------------	---------	---------	---------	---------	-------------------

2) Two Time Dimensions : Year Total and All Years

	Q1	Q2	Q3	Q4	Year Total
2002					
2033					
All Years					

3) Combined Scenario and All Years Dimension

	Q1	Q2	Q3	Q4	Year Total
2003 Actual					
2004 Actual					
2004 Budget					
2004 Variance					
2005 Budget					
Scenario					

Overview of Essbase Analysis and Reporting



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Analytical Capabilities

- Comparisons
- Zoom In (Drill Down)
- Pivot

Comparisons

		East			
	Colas	Root Beer	Cream Soda	Fruit Soda	Diet Drinks
Qtr1	6292	5726	4868	3735	1884
Qtr2	7230	5902	5327	3990	2096
Qtr3	7770	5863	5142	4201	2071
Qtr4	6448	6181	4904	3819	1868
Year	27740	23672	20241	15745	7919

		West			
	Colas	Root Beer	Cream Soda	Fruit Soda	Diet Drinks
Qtr1	6950	8278	8043	8403	8820
Qtr2	7178	8524	8982	8888	9086
Qtr3	7423	8885	9616	9206	9518
Qtr4	6755	8513	8750	8537	8999
Year	28306	34200	35391	35034	36423

Drill Down

	Cola	Diet Cola	Caffeine Free Cola	Colas
Year	22777	5708	1983	30468

	Cola	Diet Cola	Caffeine Free Cola	Colas
Qtr1	5096	1359	593	7048
Qtr2	5892	1534	446	7872
Qtr3	6583	1528	400	8511
Qtr4	5206	1287	544	7037
Year	22777	5708	1983	30468

	Cola	Diet Cola	Caffeine Free Cola	Colas
Jan	1710	427	218	2355
Feb	1666	463	200	2329
Mar	1720	469	175	2364
Qtr1	5096	1359	593	7048
Apr	1793	497	152	2442
May	1908	509	154	2571
Jun	2191	528	140	2859
Qtr2	5892	1534	446	7872
Qtr3	6583	1528	400	8511
Qtr4	5206	1287	544	7037
Year	22777	5708	1983	30468

Pivot

		Qtr1	Qtr2	Qtr3	Qtr4	Year
Actual	Colas	7048	7872	8511	7037	30468
	Root Beer	6721	7030	7005	7198	27954
	Cream Soda	5929	6769	6698	6403	25799
	Fruit Soda	5005	5436	5698	5162	21301
	Diet Drinks	7017	7336	7532	6941	28826
	Product	24703	27107	27912	25800	105522
Budget	Colas	9790	10660	11440	10050	41940
	Root Beer	8480	8840	8830	9800	35950
	Cream Soda	6970	7680	7710	7000	29360
	Fruit Soda	5340	5690	6000	5100	22130
	Diet Drinks	8910	9220	9380	9210	36720
	Product	30580	32870	33980	31950	129380

	Qtr1		Qtr2		Qtr3		Qtr4		Year	
	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget
Colas	7048	9790	7872	10660	8511	11440	7037	10050	30468	41940
Root Beer	6721	8480	7030	8840	7005	8830	7198	9800	27954	35950
Cream Soda	5929	6970	6769	7680	6698	7710	6403	7000	25799	29360
Fruit Soda	5005	5340	5436	5690	5698	6000	5162	5100	21301	22130
Diet Drinks	7017	8910	7336	9220	7532	9380	6941	9210	28826	36720
Product	24703	30580	27107	32870	27912	33980	25800	31950	105522	129380

Essbase Spreadsheet Add-in

- Enhancement to spreadsheet
- Client-server
 - A bridge to your data

Three Reporting Methods

- Templates
- Limited Ad hoc functionality
- Full Ad hoc – you're in control!

Template Reporting

- Report created already
- Users refresh the report
- No ability to change report layout or members

The Beverage Company's Income Statement					
<i>Total Market and Product Breakdown</i>					
<i>Date Ending December 31, 1999</i>					
	Qtr1	Qtr2	Qtr3	Qtr4	Year
Sales	95,820.00	101,679.00	105,215.00	98,141.00	400,855.00
COGS	42,877.00	45,362.00	47,343.00	43,754.00	179,336.00
Margin	52,943.00	56,317.00	57,872.00	54,387.00	221,519.00
Marketing	15,839.00	16,716.00	17,522.00	16,160.00	66,237.00
Payroll	12,168.00	12,243.00	12,168.00	12,168.00	48,747.00
Misc	233.00	251.00	270.00	259.00	1,013.00
Total Expenses	28,240.00	29,210.00	29,960.00	28,587.00	115,997.00
Profit	24,703.00	27,107.00	27,912.00	25,800.00	105,522.00

Limited Ad Hoc Reporting

- More flexibility
- Report created already
- Users can change parts of report

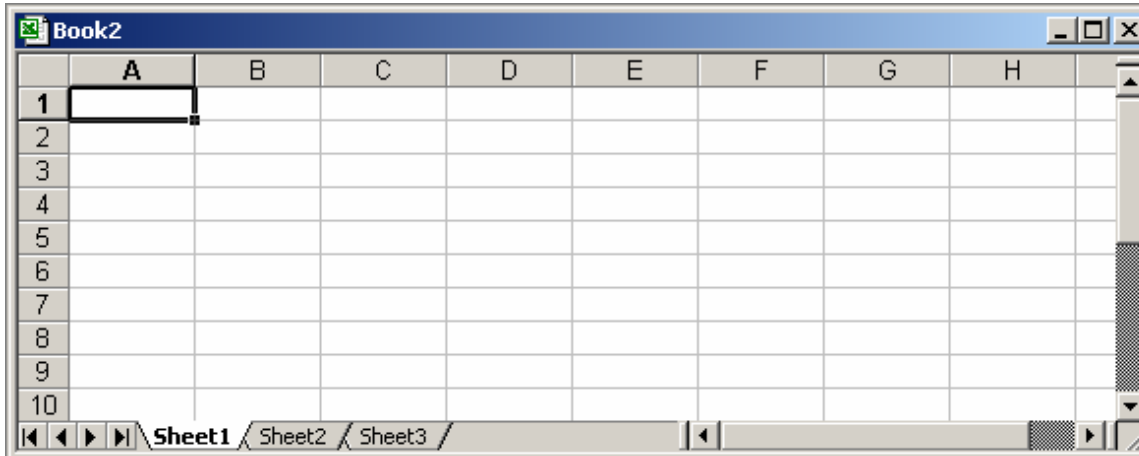
The Beverage Company
Marketing Analysis
Date Ending December 31, 1999

Colas
Payroll

		Jan		Feb		Mar
New York	\$	51.00	\$	51.00	\$	51.00
Massachusetts	\$	31.00	\$	31.00	\$	31.00
Florida	\$	54.00	\$	54.00	\$	54.00
Connecticut	\$	31.00	\$	31.00	\$	31.00
New Hampshire	\$	53.00	\$	53.00	\$	53.00
East	\$	220.00	\$	220.00	\$	220.00

Full Ad Hoc Reporting

- Most flexible
- Users can fully design the report
 - Users can change layout, detail, format
- Users *fully control* the report!
- Class focus



Quick Tour :

The Essbase Spreadsheet Client Add-In

- Zoom In / Zoom Out
- Keep Only / Remove Only
- Flashback (Undo)
- Formatting
- Pivoting
- Horizontal Zoom

Basic Retrieval Techniques



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Ad Hoc Retrieval Techniques

- The 5 Easy Moves
- Global Options
- Spreadsheet Options

The 5 Easy Moves

- Zoom In – drills down the hierarchy
- Zoom Out – drills up the hierarchy
- Keep Only / Remove Only
- Pivot – changes rows to columns/columns to rows or changes the nesting of rows/columns
- Horizontal Zoom – drills down the hierarchy across the report

Global Options – Controls Entire Session

- Mouse Actions
 - Excel or Essbase
- Display Messages
 - Feedback level

Spreadsheet Options - Control Each Spreadsheet Separately

■ Zoom Options

- Controls the detail level of the zoom in

■ Preserve Formulas

- Excel formulas are left intact during Essbase retrieval

■ Formatting Control

- Display aliases, adjust columns, control indentation, labels, suppression

Advanced Retrieval Techniques



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Advanced Retrieval Techniques

- Selection Retrieval
- Sample Data (Zoom In)
- Member Selection
- Styles
- Cascade
- Lock & Send
- Calculation
- Linked Objects
- Navigate without Data
- Free Form
- Asymmetric Retrieval
- Dynamic Time Series
- Substitution Variables
- Attribute Reporting
- Essbase Query Designer

Advanced Retrieval Techniques

■ Selection Retrieval

- Select a range of cells for Essbase to retrieve into
- Enables you to have more than one report per sheet

	A	B	C	D	E	F
1		Profit	East	Actual		
2		Qtr1	Qtr2	Qtr3	Qtr4	Year
3	Colas	7048	7872	8511	7037	30468
4	Root Beer	6721	7030	7005	7198	27954
5	Cream Soda	5929	6769	6698	6403	25799
6	Fruit Soda	5005	5436	5698	5162	21301
7	Diet Drinks	7017	7336	7532	6941	28826
8	Product	24703	27107	27912	25800	105522
9						
10						
11		Profit	West	Actual		
12		Qtr1	Qtr2	Qtr3	Qtr4	Year
13	Colas	1042	849	899	759	3549
14	Root Beer	2325	2423	2540	2439	9727
15	Cream Soda	2363	2739	2937	2692	10731
16	Fruit Soda	1407	1504	1563	1380	5854
17	Diet Drinks	2025	1975	2100	1987	8087
18	Product	7137	7515	7939	7270	29861

Advanced Retrieval Techniques

■ Sample Data (Zoom In) (V7.X Only)

The Sample Data (Zoom In) command allows you to zoom in on a sample of your data.

Sampling

Sampling Percentage:

	A	B	C	D	E	F
1		Measures	Product	Scenario		
2		Qtr1	Qtr2	Qtr3	Qtr4	Year
3	East	8702	6499	6346	5936	27483
4	West	7137	7515	7939	7270	29861
5	South	3077	3267	3515	3379	13238
6	Central	9109	9826	10112	9215	38262
7	Market	28025	27107	27912	25800	108844

Sampling

Sampling Percentage:

	A	B	C	D
1		Measures	Product	Scenario
2		Qtr1	Qtr4	Year
3	East	8702	5936	27483
4	West	7137	7270	29861
5	South	3077	3379	13238
6	Central	9109	9215	38262
7	Market	28025	25800	108844

Advanced Retrieval Techniques

■ Member Selection

- Allows you to create a custom member name list through
 - Children, descendants, user-defined attributes, pattern matching, generation, level
- Find feature
- Ability to save selection criteria for future use
- Place list horizontally or vertically in report

Advanced Retrieval Techniques

■ Styles

■ Visual cues based on member relationships

- Parent
- Child
- Shared
- Contain Formula
- Dynamic Calculations
- Attribute

■ Visual cues based on dimension

■ Visual cues based on security privileges

- Read Only
- Read/Write

Advanced Retrieval Techniques

■ Cascade

- Creates a series of reports from based on a single template
- You decide which dimension(s) to cascade on by selecting *zoom in* options
- Essbase will copy the formatting of the original template

Advanced Retrieval Techniques

■ Lock & Send

- Allows you to update the database provided you have write access
- Lock
 - Assures that only one person at a time can update the members in a spreadsheet
- Send
 - Writes back the new data value and unlocks the members
- Use styles to see what you are able to update

Advanced Retrieval Techniques

■ Calculation

- Certain calculations routines may be kicked off from the spreadsheet environment.
- Your security access has to be able to read/write to the database

Advanced Retrieval Techniques

■ Linked Objects

- Notes or files that are attached to a member combination
- Use styles to find linked objects

Advanced Retrieval Techniques

- Navigate without data
 - Essbase will only bring back member hierarchies, not data values
 - Speeds up the creation of large reports

Advanced Retrieval Techniques

■ Dynamic Time Series

- Dynamically calculates “to-date” members
- Not in regular hierarchy
 - Use member selection
 - Manually type in
- Specify the latest time period

	A	B	C	D	E	
1			Profit	Actual		
2						
3			Apr	May	Q-T-D(May)	
4	Colas	East	1011	1071	2082	
5		West	271	273	544	
6		South	376	407	783	
7		Central	784	820	1604	
8		Market	2442	2571	5013	
9						

Advanced Retrieval Techniques

■ Substitution Variables

- Pre-defined
- Can be used in reports
- Precede variable name with an ampersand

	A	B	C	D	E	F	G
1		&Currmonth	Sales	Actual			
2							
3		Colas	Root Beer	Cream Soda	Fruit Soda	Diet Drinks	Product
4	East	2066	2076	1605	1231	601	6978
5	West	2228	2788	2806	2751	2967	10573
6	South	1294	1796	1115	#Missing	1431	4205
7	Central	2632	2282	2631	2670	3378	10215
8	Market	8220	8942	8157	6652	8377	31971
9							

Advanced Retrieval Techniques

■ Free Form

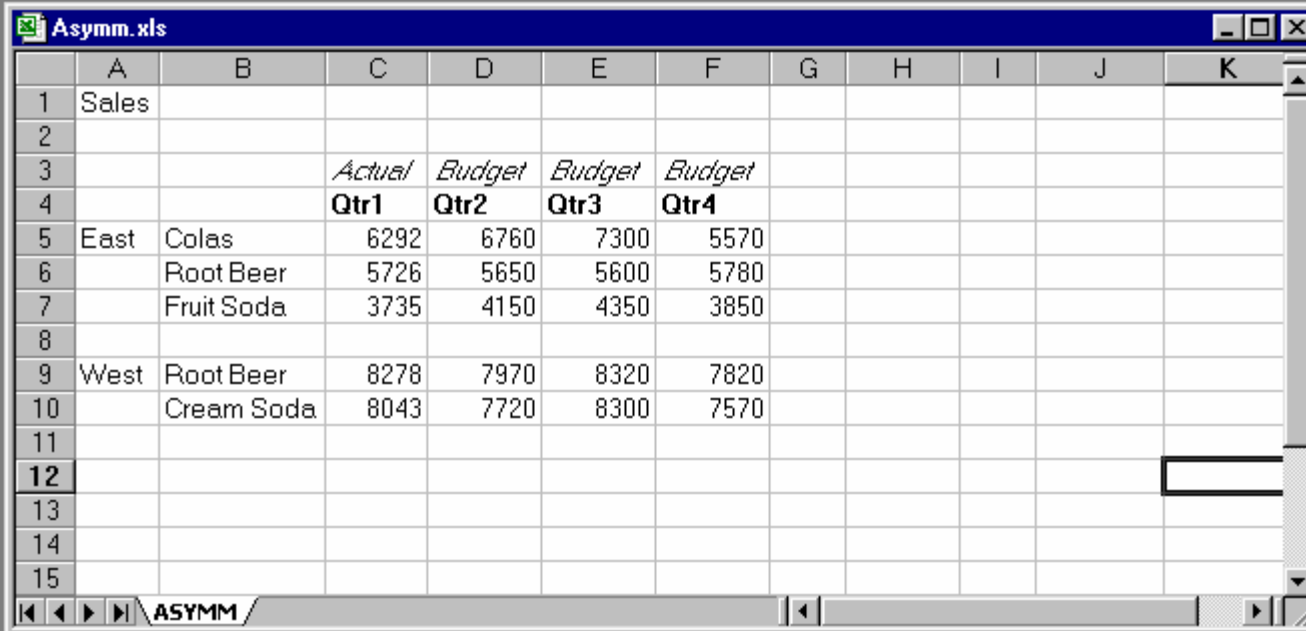
- Supplies member names for any dimension that is not specified in the retrieval.

■ To Activate Free Form

- Enable Free Form in the spreadsheet options mode tab
- Place a numeric character in the first data cell

Advanced Retrieval Techniques

■ Asymmetric



The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D	E	F	G	H	I	J	K
1	Sales										
2											
3			<i>Actual</i>	<i>Budget</i>	<i>Budget</i>	<i>Budget</i>					
4			Qtr1	Qtr2	Qtr3	Qtr4					
5	East	Colas	6292	6760	7300	5570					
6		Root Beer	5726	5650	5600	5780					
7		Fruit Soda	3735	4150	4350	3850					
8											
9	West	Root Beer	8278	7970	8320	7820					
10		Cream Soda	8043	7720	8300	7570					
11											
12											
13											
14											
15											

The Essbase Query Designer

- Provides the user with more information in a new navigational panel.
- Defines layout, detailed members, uses attributes and attribute calculations.
- Additional features
 - Ranking
 - Data filtering
 - Boolean selections
 - Sorting
- Automatically “record” a report script.

Using the Spreadsheet Client with the Essbase Report Writer

- Create a report script with the data query designer
- Copy the script into a worksheet
- Enable template retrieve
- Retrieve the report

Essbase Troubleshooting



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Essbase Troubleshooting

- Out of place
- Pivot has no effect
- Nonsensical report
- Unmatched member name
- Can not pivot last row
- Formulas disappear
- Suppress missing is grayed out
- Formula preservation is grayed out



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Executive Reporting - Template Retrievals

- Take advantage of Excel's functionality
 - Charts, formatting, formulas
- Use corporate reporting standards
- Add descriptive text
- Insert rows and columns
- Hide rows and columns
- Populate list boxes with member names
- Dynamic charts
- Create one workbook containing various reports

User Projects Design Discussion



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MTG Application Analysis Checklist

- Users
- Objectives
- Metrics
- Output
- Input
- Transformations & Calculations

Automating Spreadsheet Operations



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Automation Basics

- Essbase menu macros
- Extended Macro Toolkit
- Essbase Visual Basic API

Using Macro Recording To Speed Development

- Automating Retrievals
- Automating Member Selection With List Boxes
- Useful Excel Functions