Data Analysis in Excel

Learning Objectives

Analyze a data set using native Excel tools

Apply Excel tools and formulas to transform and structure data

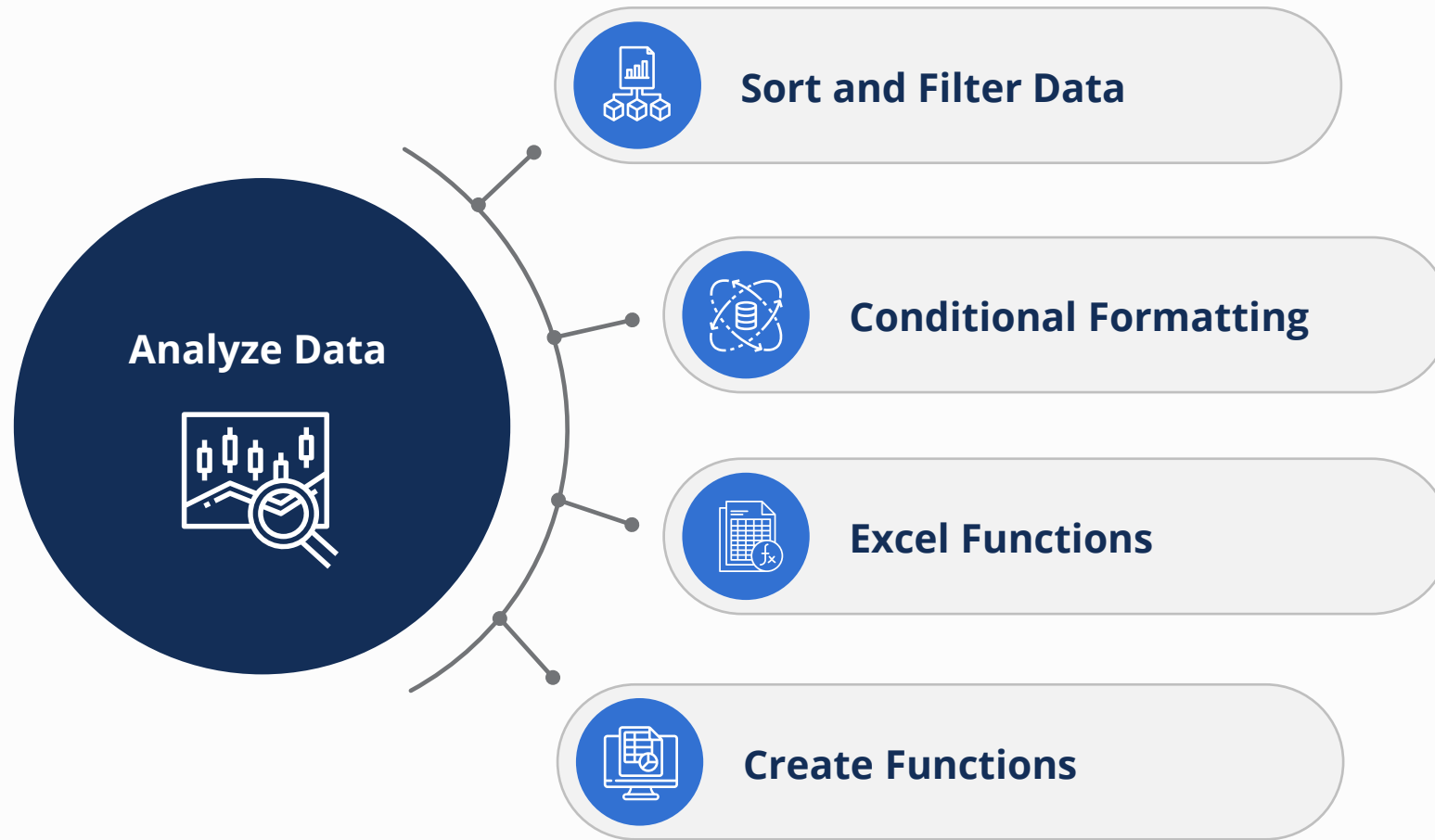**Create** pivot tables to slice and dice data
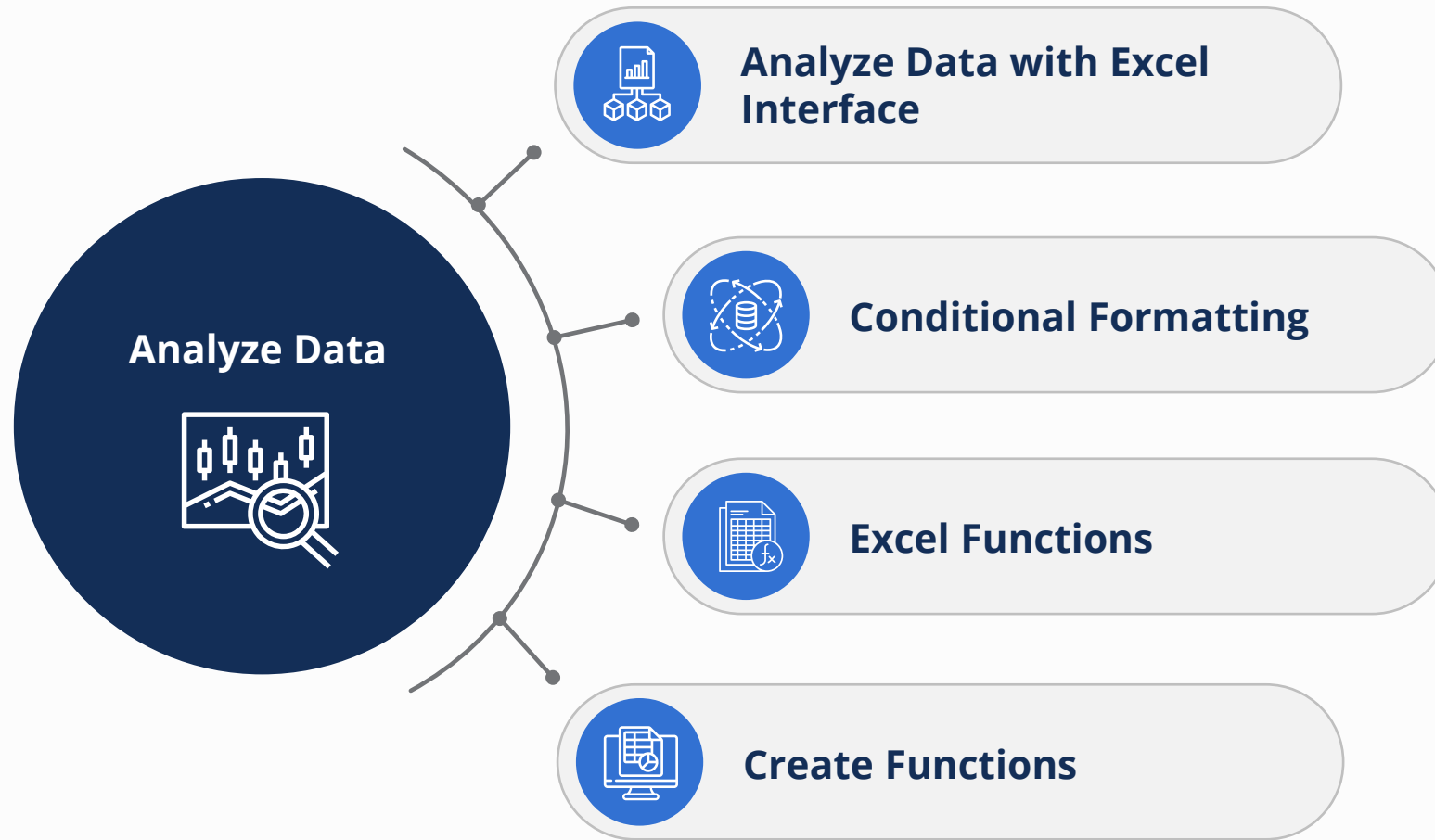
Visualize data with pivot charts and Excel charts

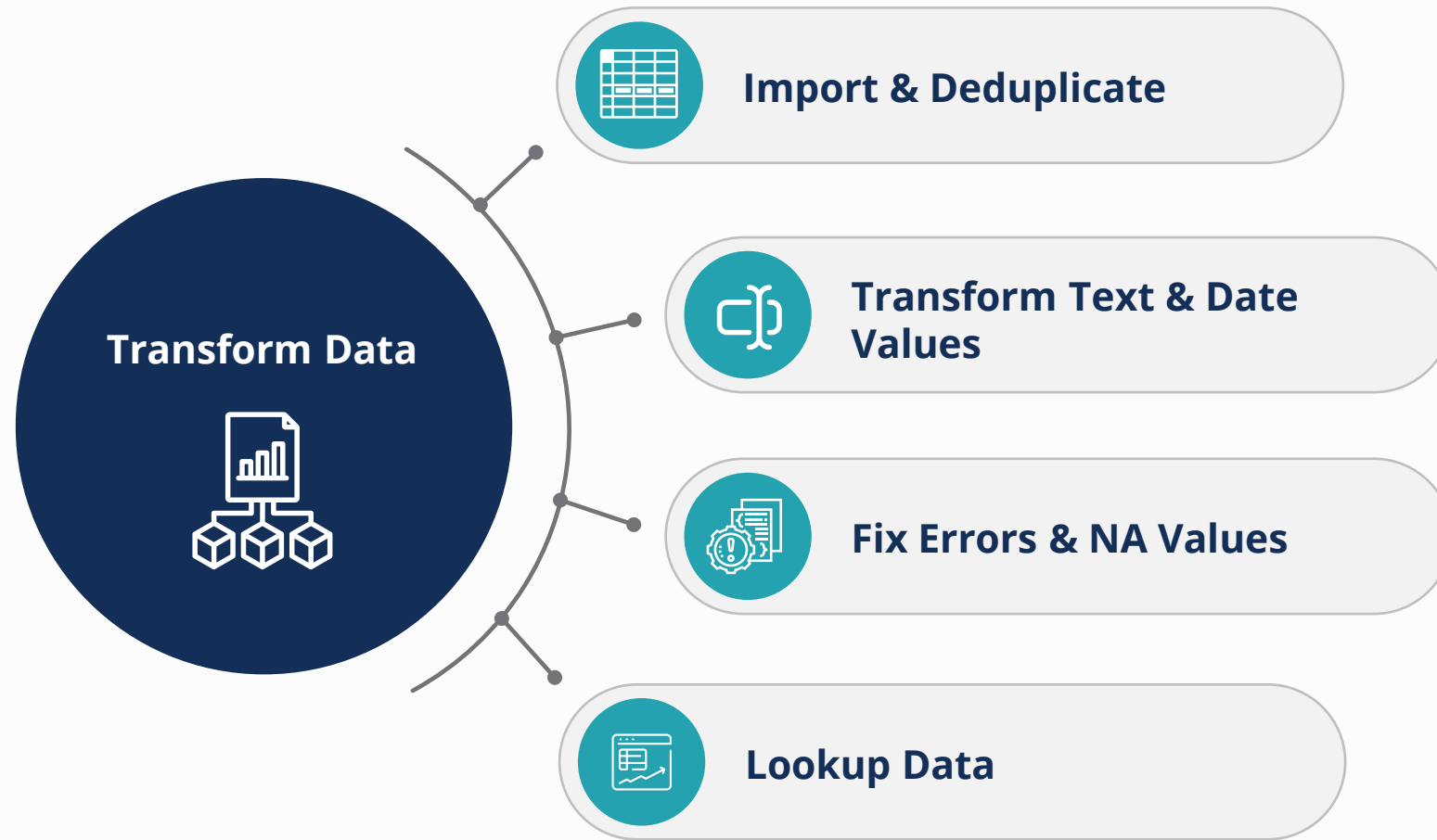**Explore** the landscape of data analysis and visualization

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Chapter Introduction – Analyze Data

Analyze Data
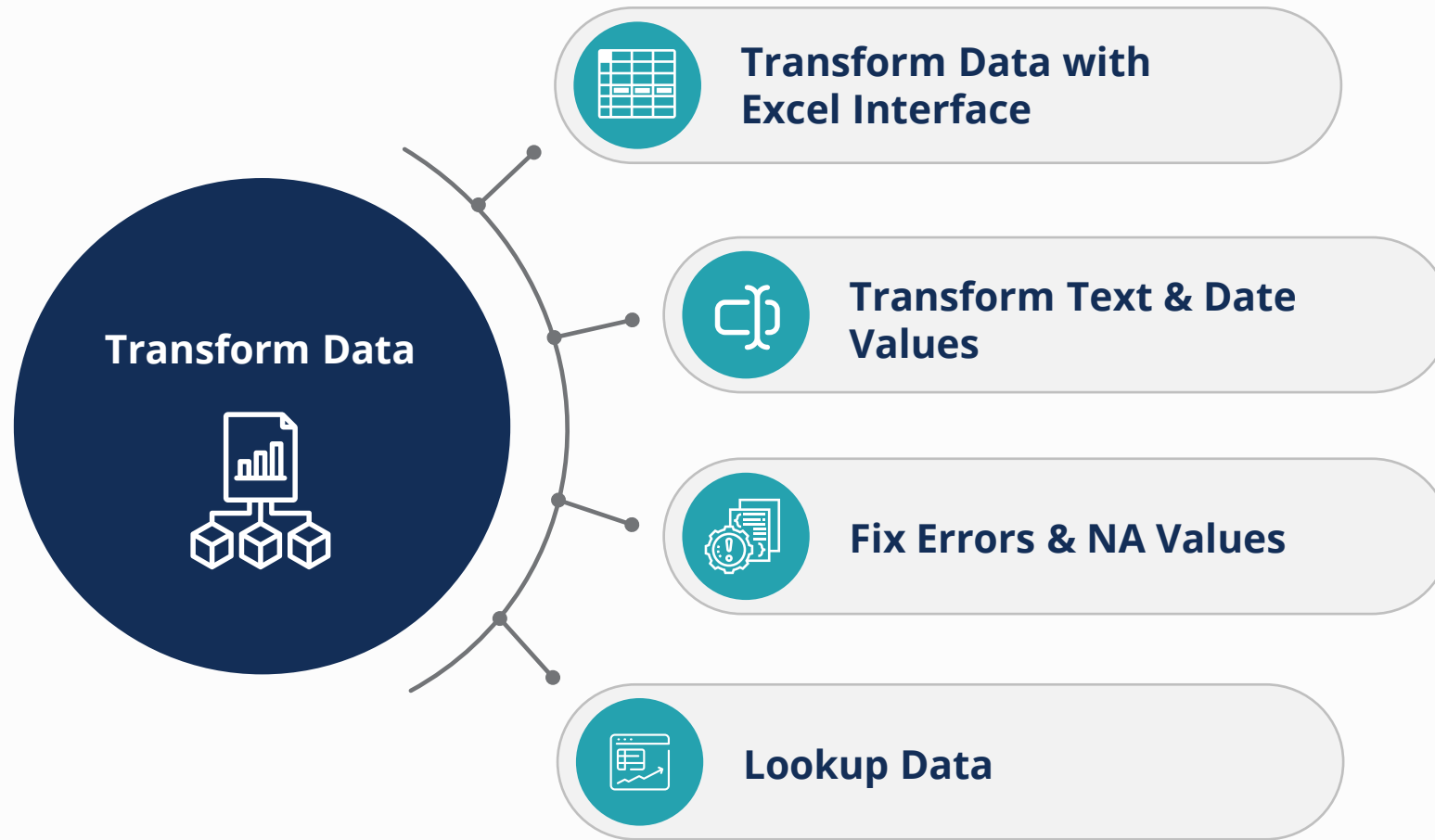
- Sort and Filter Data
- Conditional Formatting
- Excel Functions
- Create Functions

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Chapter Review – Analyze Data

Analyze Data

- Analyze Data with Excel Interface
- Conditional Formatting
- Excel Functions
- Create Functions

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Chapter Introduction – Transform Data

Transform Data

- Import & Deduplicate
- Transform Text & Date Values
- Fix Errors & NA Values
- Lookup Data

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Chapter Review – Transform Data

Transform Data

Transform Data with Excel Interface

Transform Text & Date Values

Fix Errors & NA Values

Lookup Data

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Chapter Introduction – Excel Tables

Manage & analyze related data | **Excel Tables**

Data preparation & transformation tool in Excel | **Power Query**

Provide the ability to connect to data on variety of subjects | **Linked Data Types**

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Chapter Review – Excel Tables

Excel tables are important to a modern data analysis

Power Query

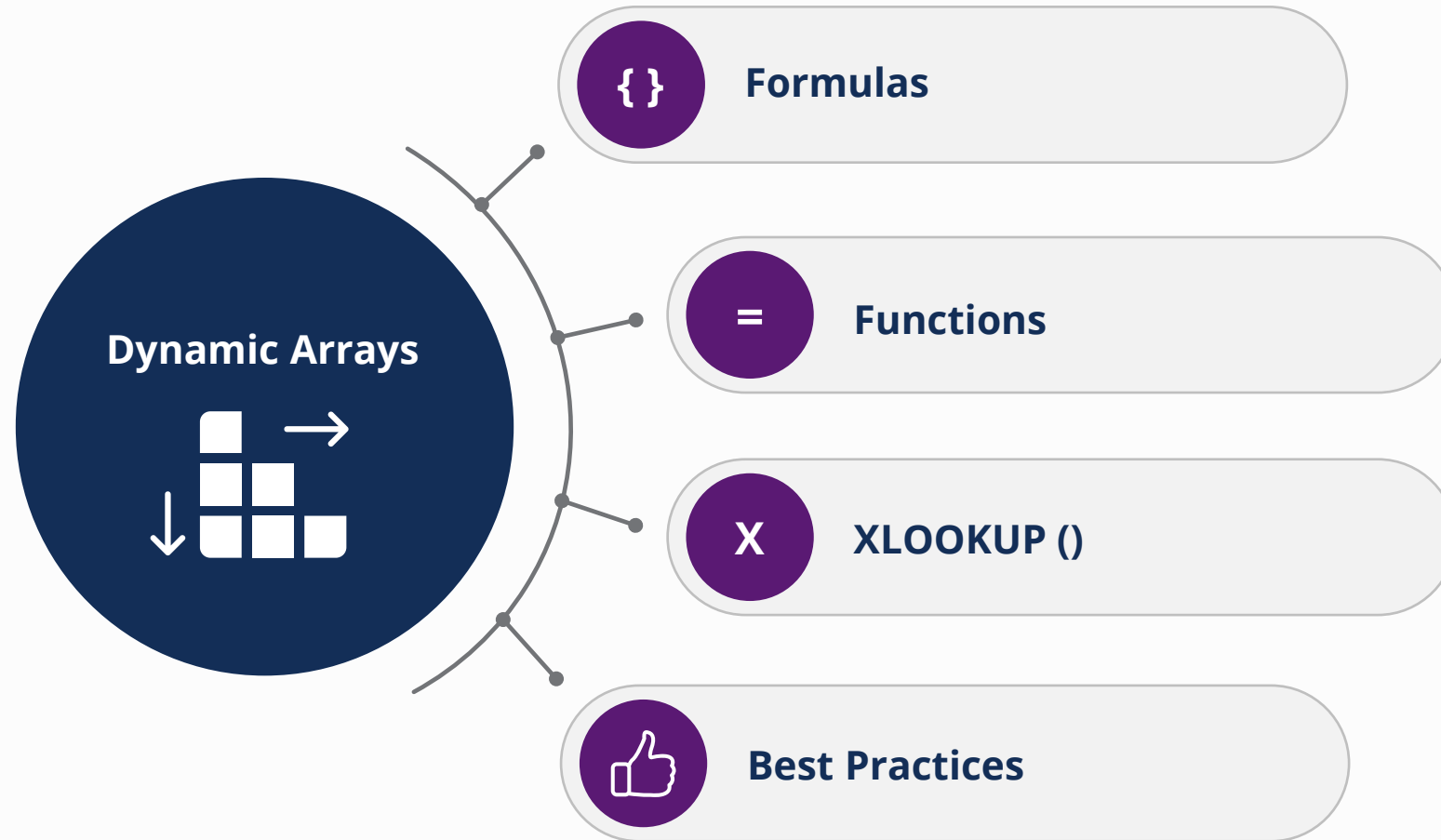**Linked Data Types**

Dynamic Arrays

Pivot Tables

Data Visualizations

StudentID	FirstName	LastName	GradeAverage	Faculty	Tuition	OfficeHoursParticipated	TutorialsAttended	ClassesSkipped
20123456	John	Park	B	Arts	44191	0	10	5
20123457	Alex	Great	B	Science	32245	4	10	10
20123458	Sebastian	Taylor	B	Business	42679	6	3	7
20123459	Michael	Bay	A	Math	46478	15	3	2
20123460	Scott	Foster	A	Engineering	36784	5	9	8
20123461	Amy	Winehouse	B	Arts	36537	10	6	3
20123462	Ralph	Wiggins	B	Business	40762	2	6	8
20123463	Homer	Simpson	C	Engineering	47669	4	8	7
20123464	Marge	Simpson	B	Math	39429	10	5	3
20123465	Peter	Gryffin	D	Arts	31956	7	9	7
20123466	Louise	King	D	Business	33227	6	2	7
20123467	Megan	Botts	A	Science	34751	25	5	1
20123468	Cyrus	Wong	A	Science	49298	20	0	0
20123469	Michelle	Chang	B	Business	35046	5	10	4
20123470	Zachary	Chua	A	Business	31210	10	8	0
20123471	Angus	Helmsworth	B	Business	47515	10	6	1
20123472	Aaron	McDowell	B	Business	43421	13	7	2
20123473	Carol	Kuo	B	Engineering	43063	7	0	4
20123474	Tim	James	B	Science	46775	9	3	4
20123475	Johnson	Curry	B	Engineering	40539	9	4	3
20123476	Paul	Reed	A	Business	41397	14	2	2
20123477	Josh	Hart	A	Engineering	46468	4	8	8
20123478	Justin	Kang	A	Engineering	35859	2	4	9
20123479	Kevin	Yoo	A	Arts	41048	8	9	1
20123480	Rosaline	Jun	A	Arts	44915	25	6	3
20123481	Jimin	Park	B	Engineering	34570	20	1	3
20123482	Joseph	Kim	A	Math	33376	12	5	6
20123483	Chris	Dang	F	Business	44737	3	8	8
20123484	Robbie	Tee	B	Engineering	49682	10	5	6
20123485	Shelly	Yoon	A	Math	33585	5	7	10
20123486	Namjoon	Yoongi	A	Arts	53585	7	8	2

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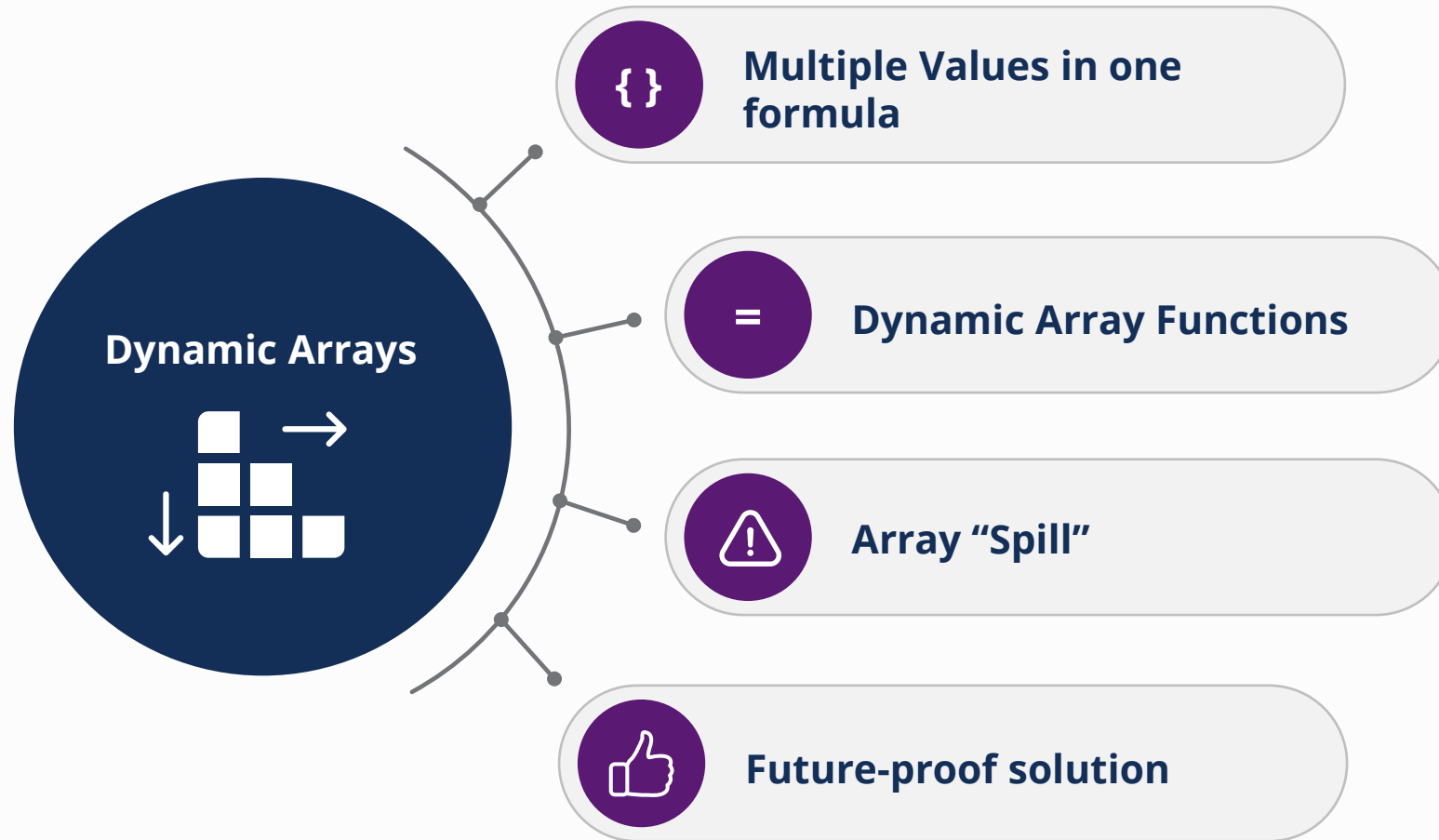
Chapter Introduction – Dynamic Arrays

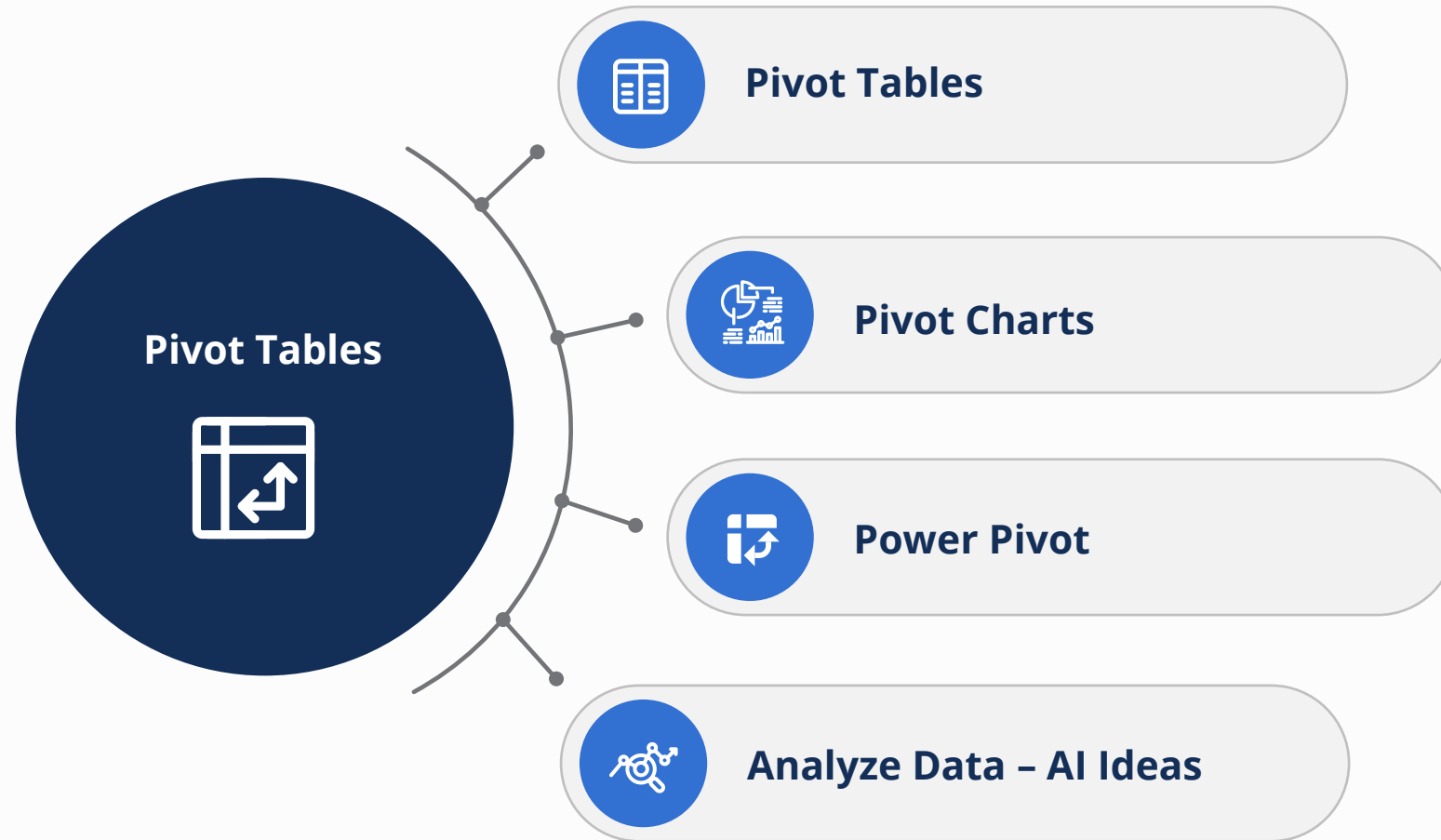Dynamic array formulas allow us to reference multiple values of data at once.

Dynamic Arrays

- **{ }** Formulas
- **=** Functions
- **X** XLOOKUP ()
- 👍 Best Practices

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Chapter Review – Dynamic Arrays

Dynamic Arrays

{ } **Multiple Values in one formula**

= **Dynamic Array Functions**
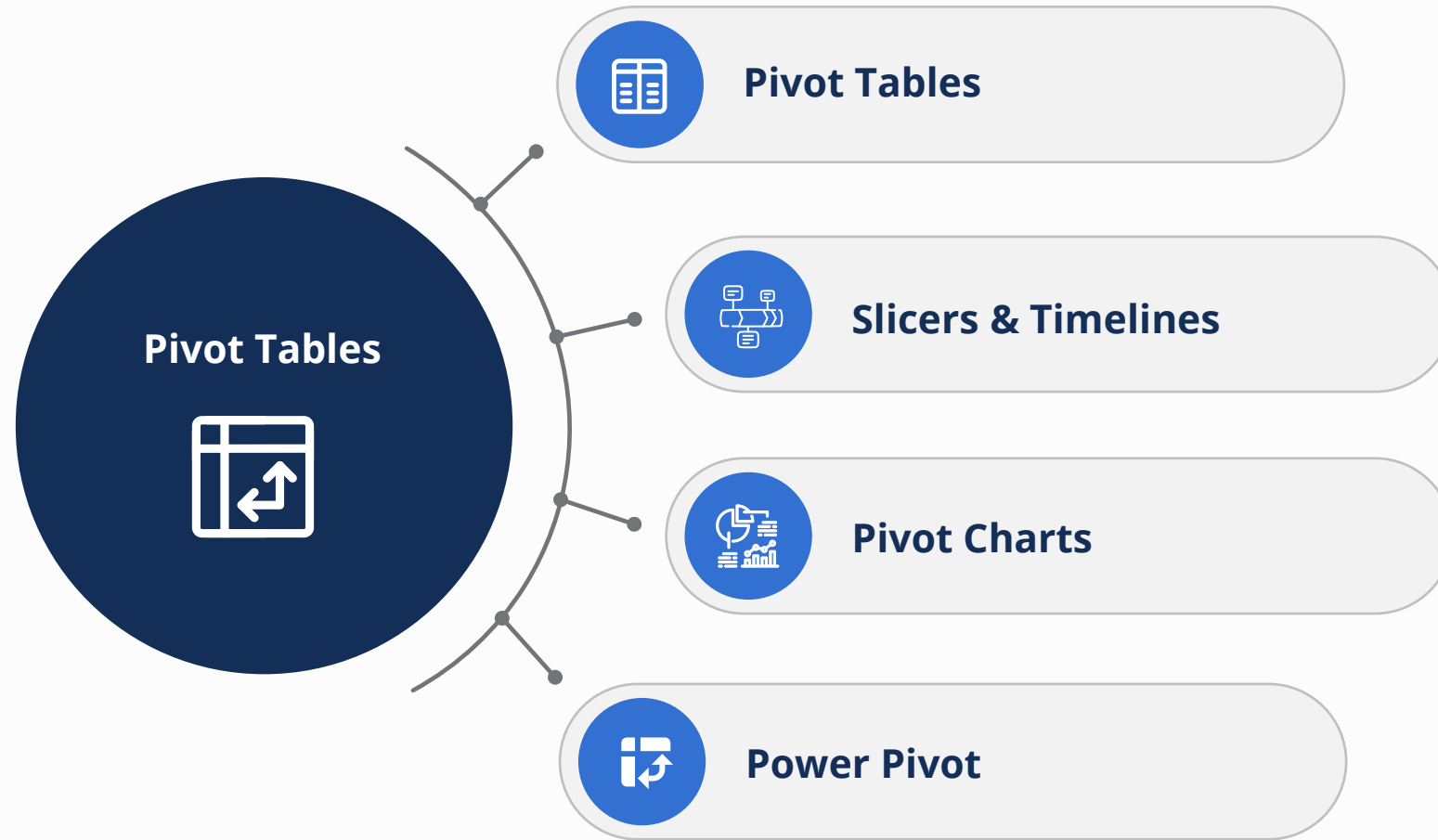
⚠ **Array "Spill"**

👍 **Future-proof solution**

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Chapter Introduction – Pivot Tables

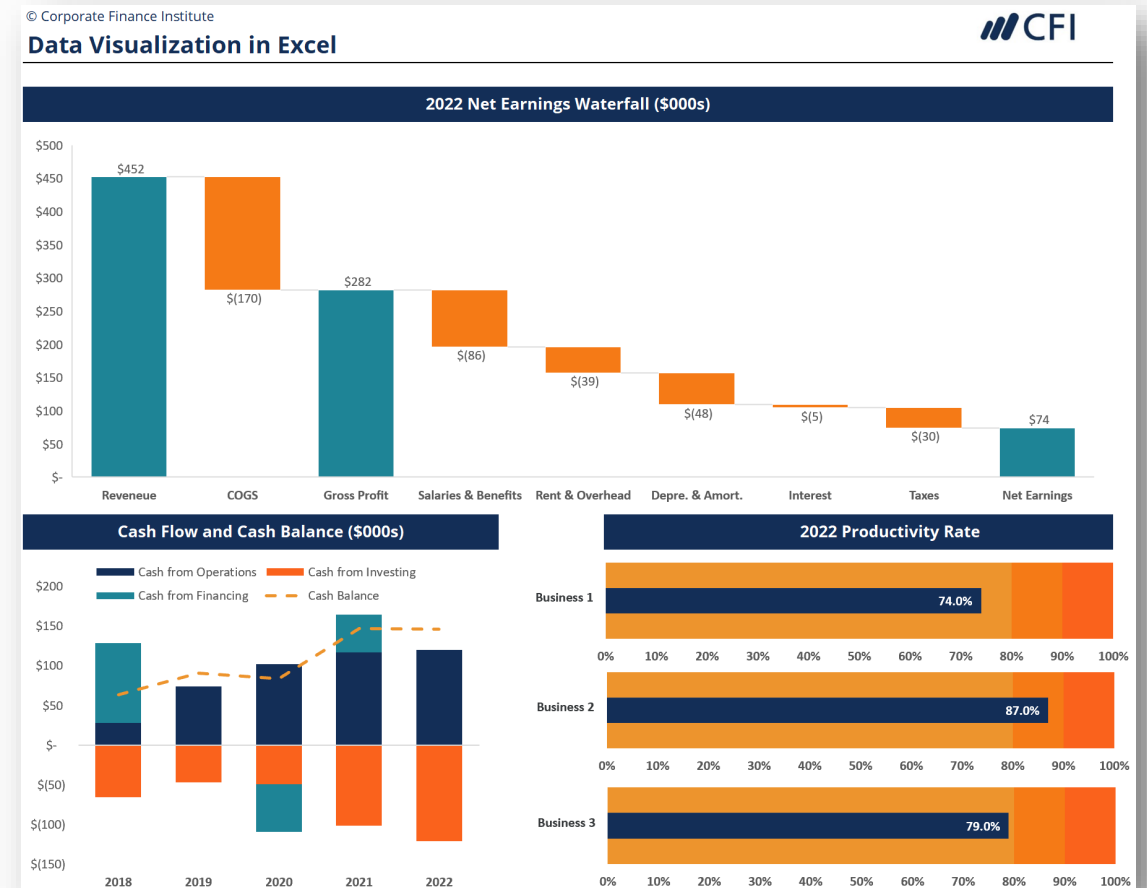Pivot tables can be used to summarize large data sets and quickly generate lots of different insights.
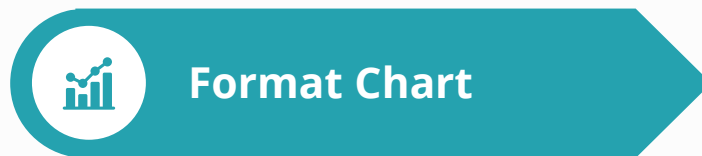
Pivot Tables

Pivot Tables

Pivot Charts

Power Pivot

Analyze Data – AI Ideas

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Chapter Review – Pivot Tables

Pivot Tables

- Pivot Tables
- Slicers & Timelines
- Pivot Charts
- Power Pivot

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Chapter Introduction – Visualize Data

Visualizing Data with Excel Charts:

Select Data

Select Chart

Format Chart

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Data Visualization in Excel

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2022 Net Earnings Waterfall ($000s)

Cash Flow and Cash Balance ($000s)

2022 Productivity Rate

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Chapter Review – Visualize Data

Select the Data to Visualize

Choose a Chart Type

Create a Chart

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