DATA
TEAM MEMBERS

Pragmatic Institute®

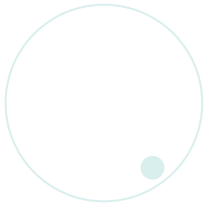# DATA **TEAM MEMBERS**

Data Scientist

Key Responsibilities

- Cleans and organizes big data
- Solves business tasks using machine learning and data mining techniques

Languages

- Coding: R, Python, Scala
- Database: SQL
- Computing: Hadoop/Spark

Expertise

- Distributed computing (user)
- Predictive modeling
- Math and statistics
- Machine learning
- Storytelling and visualization
- Capable of working with big data

Database Administrator

Key Responsibilities

- Ensures that databases are available to all relevant users
- Data security
- System performance

Languages

- Database: SQL
- Other: Java, Python
- Distributed computing tools

Expertise

- Backup and recovery
- Database systems
- Distributed computing
- Data security
- Enterprise resource planning

Data Analyst

Key Responsibilities

- Collects and processes data
- Conducts basic statistical analyses
- Presents and explains results
- Supports more advanced/senior technical staff

Languages

- Statistical: R/SAS/Stata/Matlab
- Office tools

Expertise

- Spreadsheet manipulation and analysis
- Data visualization
- Basic math and statistics

Business Analyst

Key Responsibilities

- Serves as intermediary between business and technical teams
- Links data insights to actionable business decisions
- Uses storytelling techniques to communicate data science results to organization

Languages

- Office tools
- Tableau/Splunk

Expertise

- Knowledge of Office suite to present data science findings to management
- Knowledge of visualization tools to illustrate business problems or solutions
- Storytelling and data-driven communication
- Basic data modeling

Data and Analytics Manager

Key Responsibilities

- Manages data science team
- Prioritizes and manages data science projects
- Identifies and supports opportunities to use these skills throughout an organization

Languages

- Depends on level of technical or non-technical involvement

Expertise

- Leadership
- Project management
- Interpersonal communication
- Understanding of roles and responsibilities of teams

Data Engineer/Architect

Key Responsibilities

- Designs and implements data management systems to integrate, centralize, protect and maintain data sources
- Designs and maintains systems for data science staff to develop and put data science applications into production
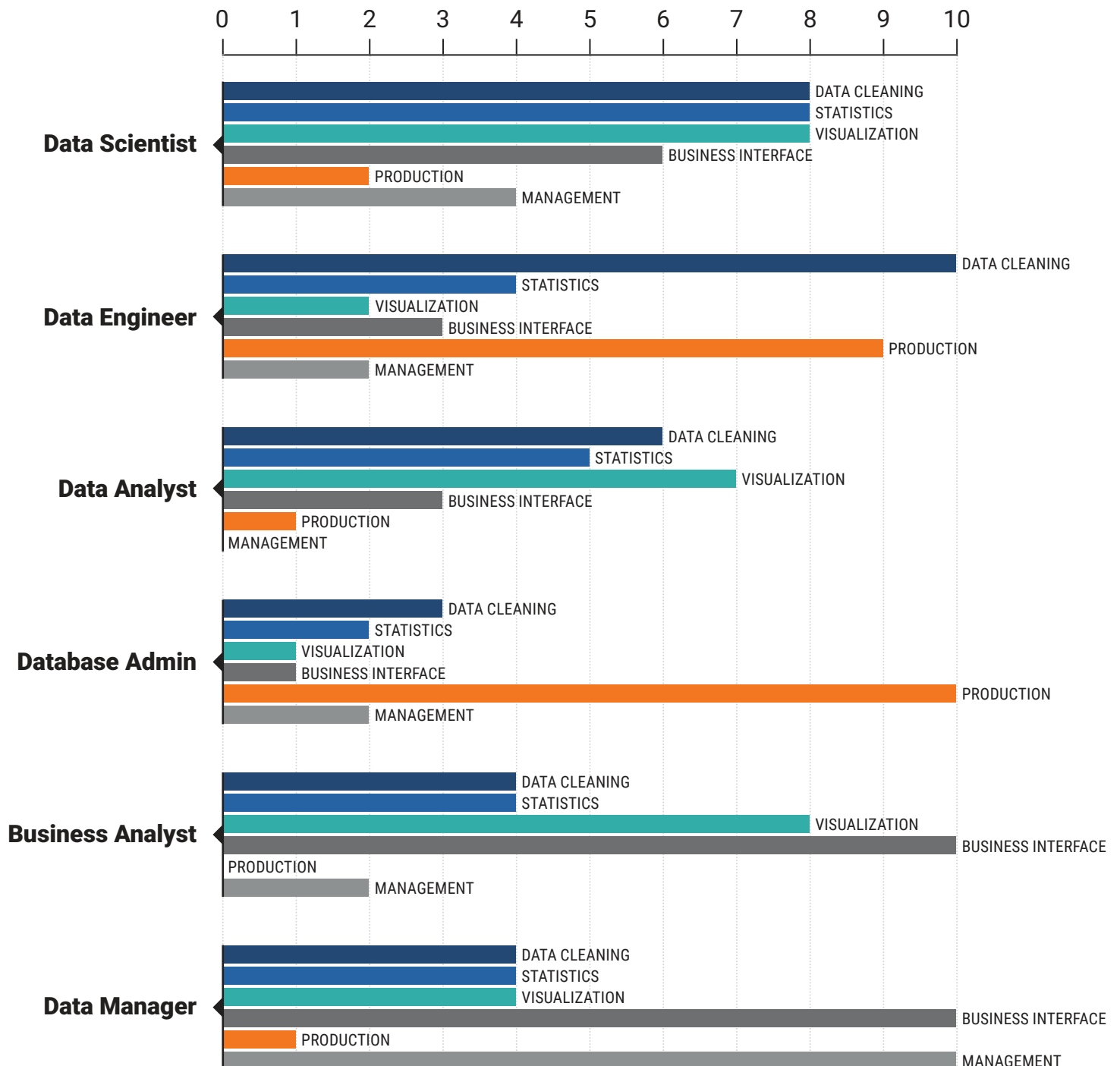
Languages

- Database: SQL/NoSQL
- Distributed Computing: Hive, Pig
- General purpose: Python, Java, Perl
- Statistical: Matlab/R/SPSS/SAS

Expertise:

- Data warehousing
- Database architecture
- ETL tools
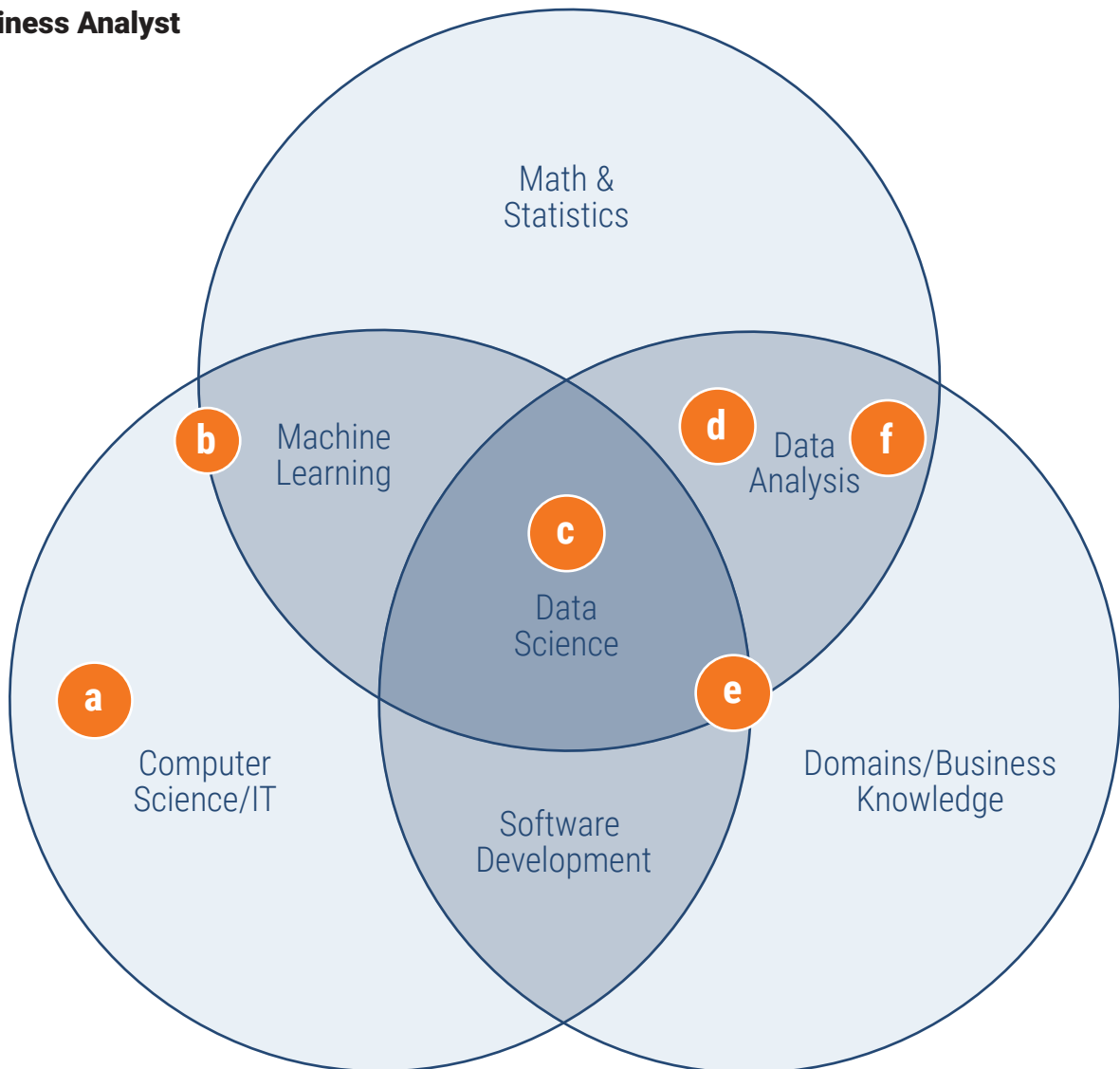- Business intelligence tools
- Kubernetes/cluster management tools

DATA **TITLES & SKILL SETS**

The titles below are assigned skill sets, each skill being charted on a scale of perceived importance where a 10 indicates the skill is seen in the industry as a vital job function, frequently performed by a knowledgeable person; a 0 indicates a skill that likely will never be performed and requires no training for the title holder. A person could perceivably hold several of these titles, particularly at a small organization.

0 1 2 3 4 5 6 7 8 9 10

Data Scientist
- DATA CLEANING
- STATISTICS
- VISUALIZATION
- BUSINESS INTERFACE
- PRODUCTION
- MANAGEMENT

Data Engineer
- DATA CLEANING
- STATISTICS
- VISUALIZATION
- BUSINESS INTERFACE
- PRODUCTION
- MANAGEMENT

Data Analyst
- DATA CLEANING
- STATISTICS
- VISUALIZATION
- BUSINESS INTERFACE
- PRODUCTION
- MANAGEMENT

Database Admin
- DATA CLEANING
- STATISTICS
- VISUALIZATION
- BUSINESS INTERFACE
- PRODUCTION
- MANAGEMENT

Business Analyst
- DATA CLEANING
- STATISTICS
- VISUALIZATION
- PRODUCTION
- MANAGEMENT
- BUSINESS INTERFACE

Data Manager
- DATA CLEANING
- STATISTICS
- VISUALIZATION
- PRODUCTION
- BUSINESS INTERFACE
- MANAGEMENT

DATA **TITLES & FIELDS**

a. **Database Administrator**

b. **Data Engineer**

c. **Data Scientist**

d. **Data Analyst**

e. **Data & Analytics Manager**

f. **Business Analyst**

Math &
Statistics

b Machine
Learning

d Data
Analysis **f**

c

Data
Science

a

Computer
Science/IT

Domains/Business
Knowledge

e

Software
Development

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