



DATABASE DESIGN

Julie Allen 2024



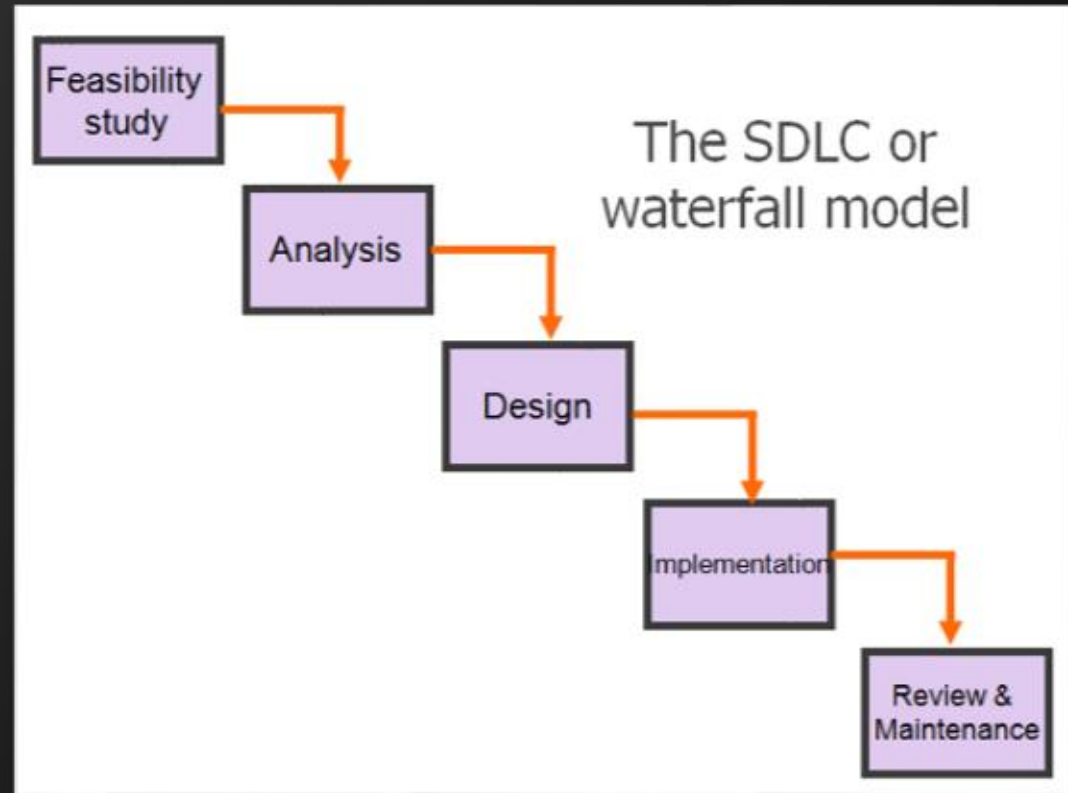
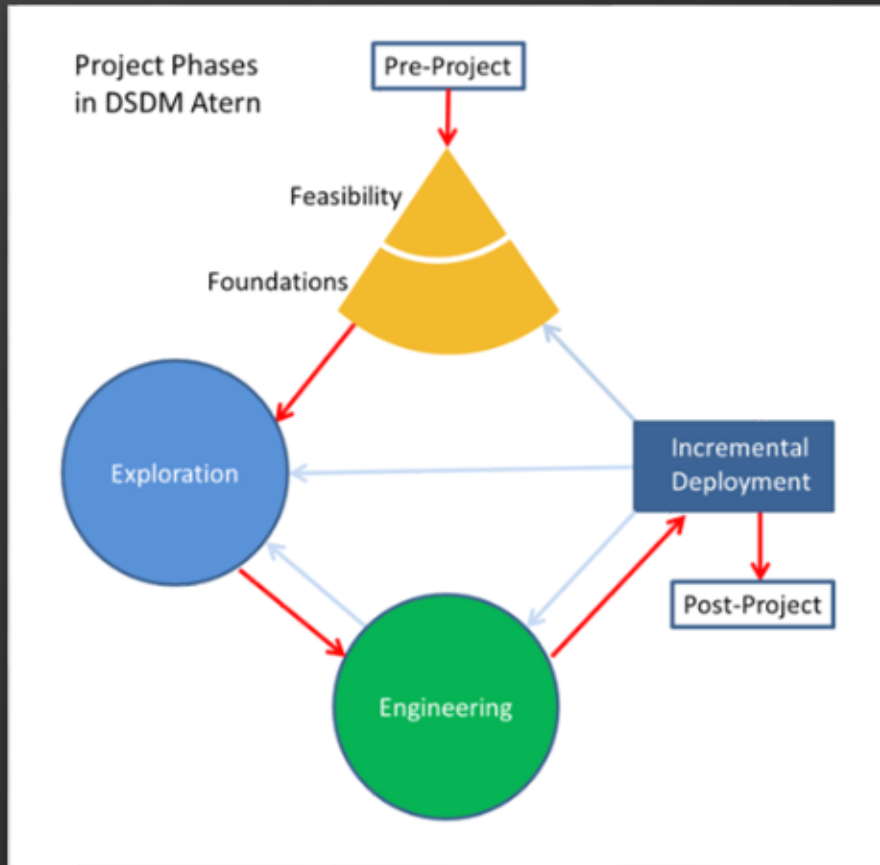
IMPLEMENTATION, OPERATION AND MAINTENANCE



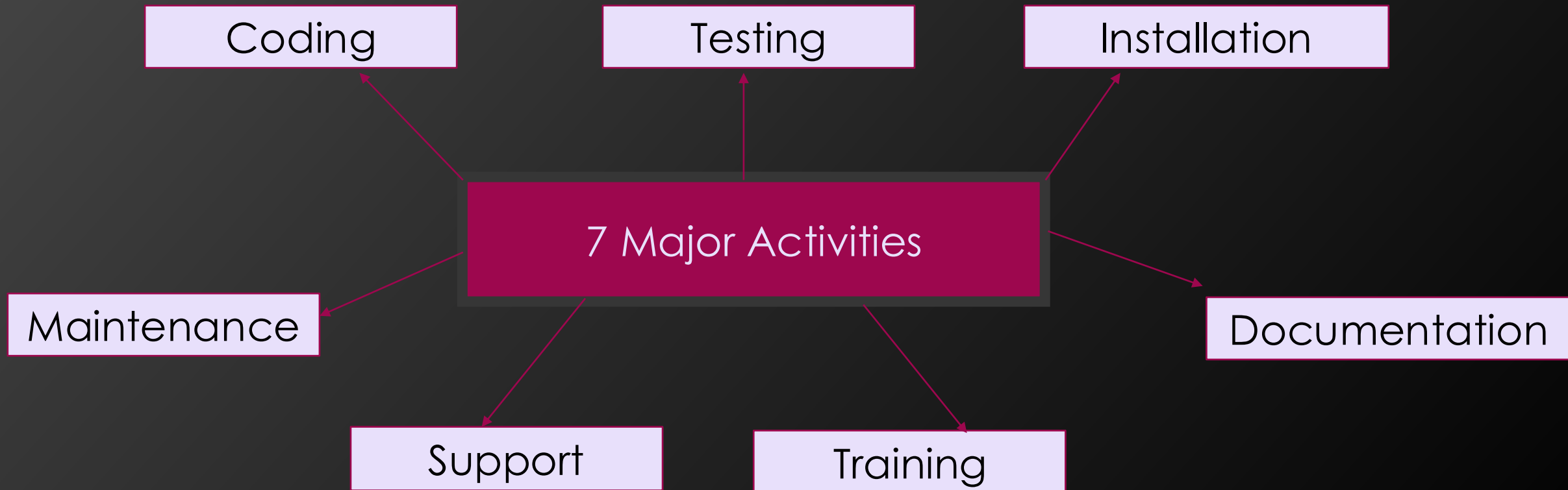
TODAY'S AGENDA:

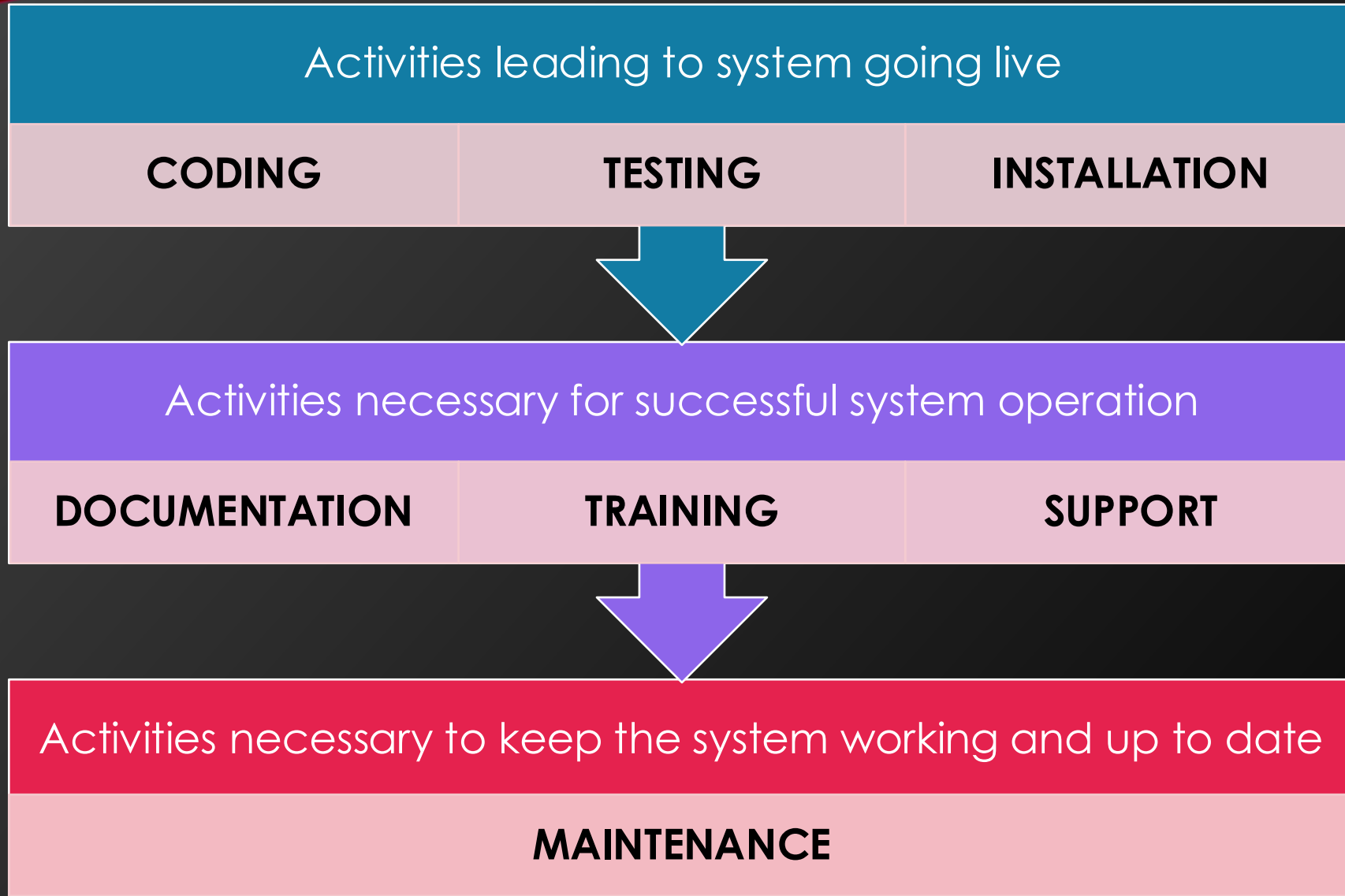
- Identify the seven phases of implementation
- Describe installation strategies
- Explain why systems implementation sometimes fails
- Describe factors that influence cost of maintaining an information system
- Identify types of maintenance

IMPLEMENTATION & MAINTENANCE AS PART OF THE LIFECYCLE



IMPLEMENTATION, OPERATION & MAINTENANCE





Activities leading to system going live

CODING



**Physical design
specification**



**Computer
code**

Complex systems can make this very intensive

Activities leading to system going live

TESTING

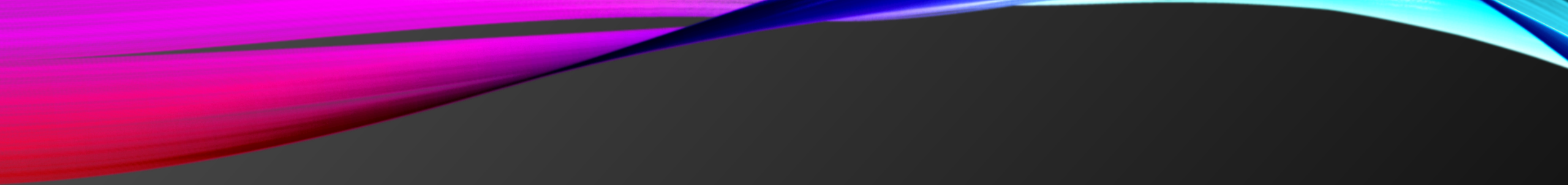


Test Cases prepared in advance

Carried out parallel to coding

Testing for: completeness, correctness, reliability, maintainability, usability, learnability, accessibility, etc.

Testing techniques: inspections, walkthroughs, unit/module, integration, system, acceptance



Activities leading to system going live

INSTALLATION



Current system
is replaced by
The new system

Converting:

Existing Data
Software
Documentation
Work Procedures

Users may
resist the
changes

APPROACHES TO INSTALLATION

DIRECT

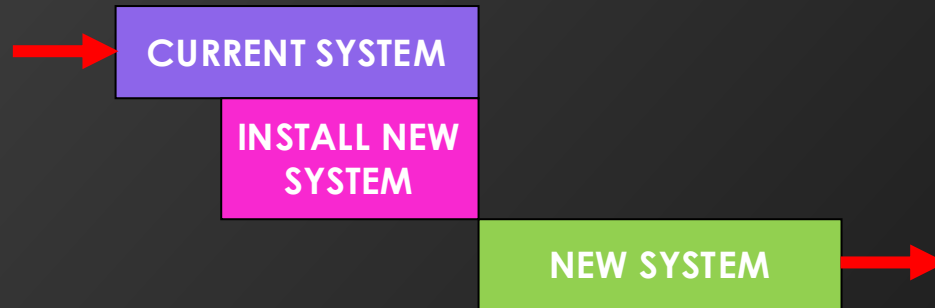
PARALLEL

SINGLE LOCATION

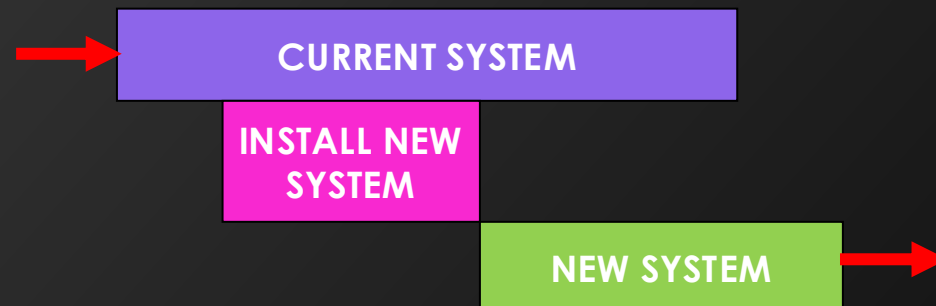
PHASED

APPROACHES TO INSTALLATION

Direct

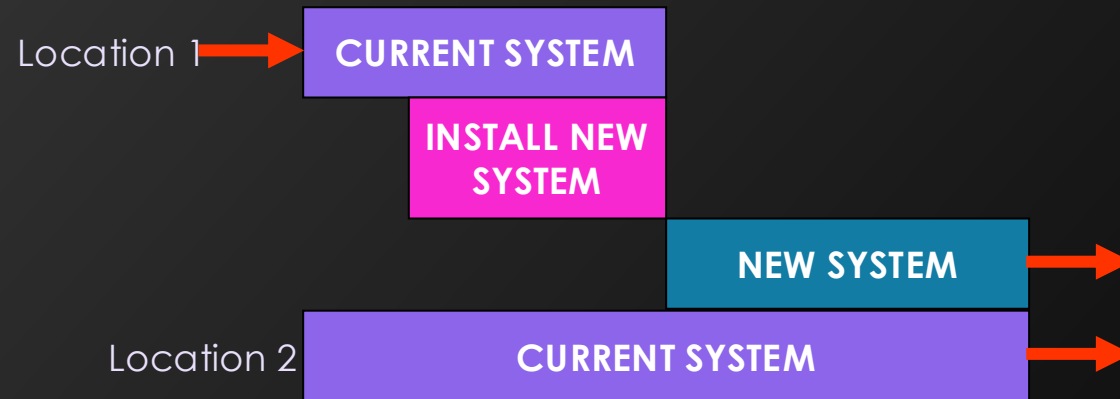


Parallel



APPROACHES TO INSTALLATION

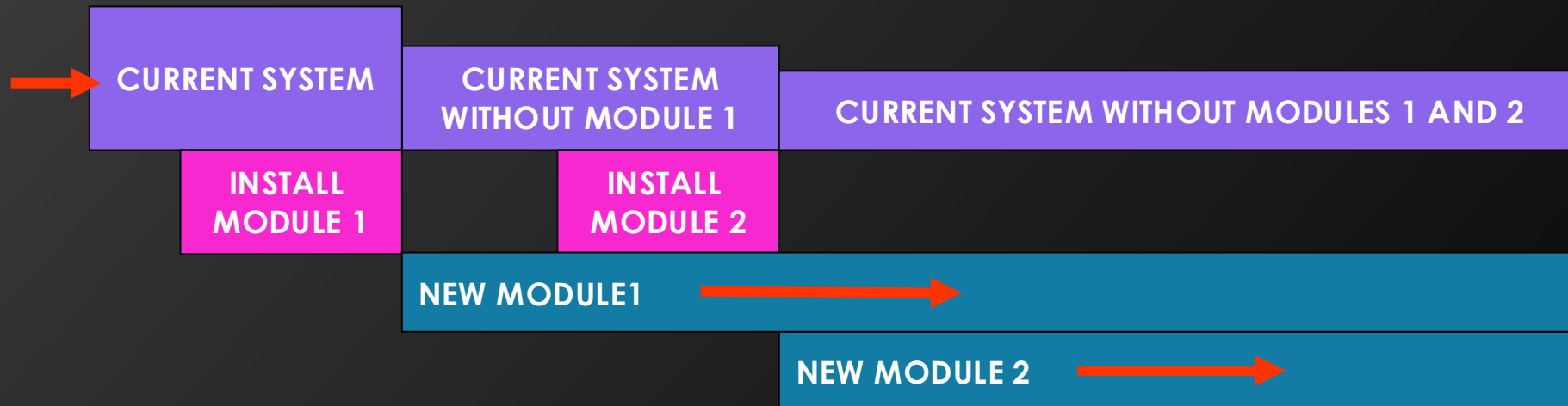
Single
location



Location could be geographic or by department, etc.

APPROACHES TO INSTALLATION

Phased



Coding, Testing and Installation

DELIVERABLES



Code

Test plan and test data

Results of testing

User guides

Training plan

System documentation

Installation & conversion plan

SUCCESSFUL SYSTEMS NEED



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graph TD; A[SUCCESSFUL SYSTEMS NEED] --> B[Documentation]; A --> C[Training]; A --> D[Support];
```

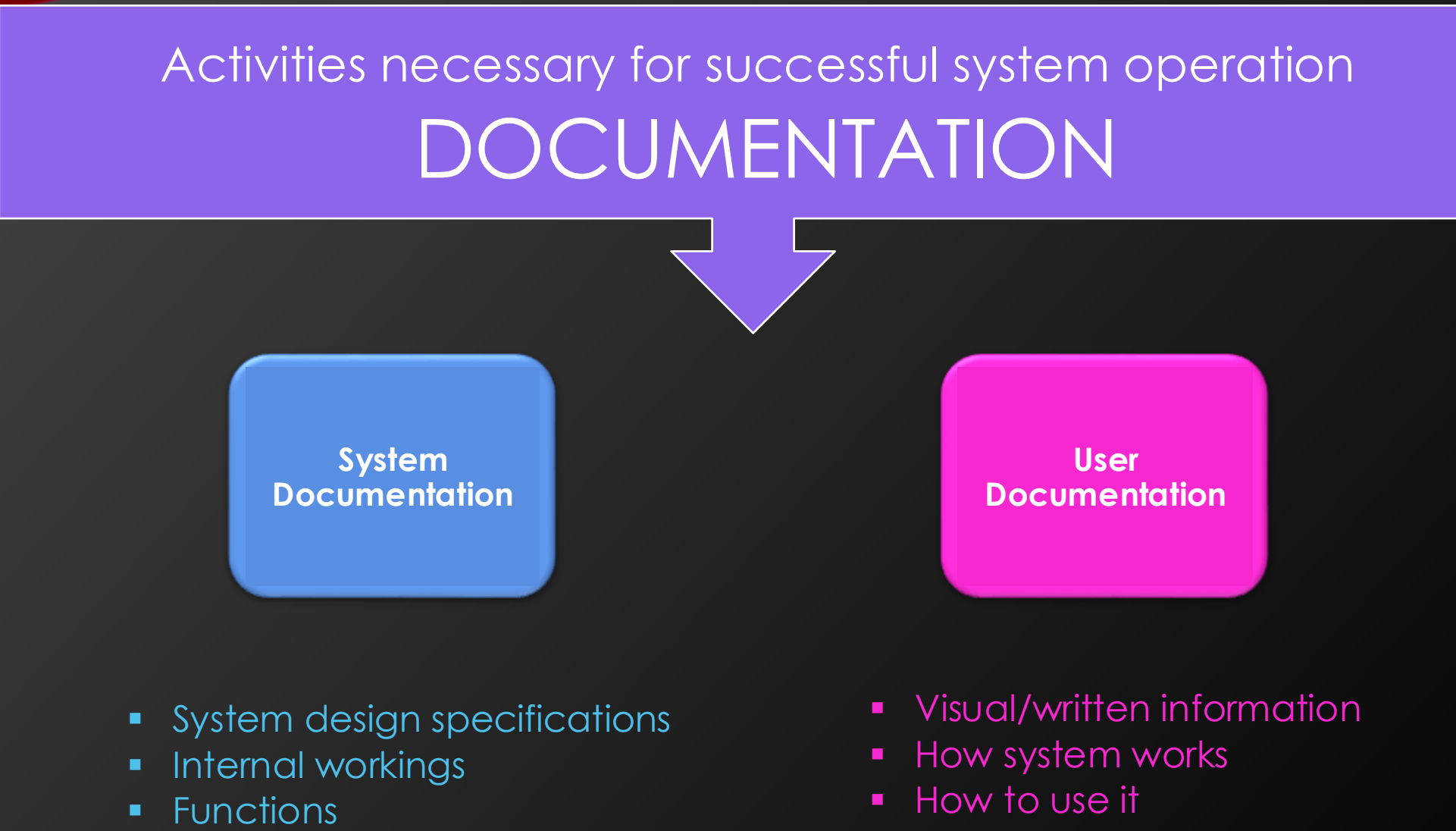
Documentation

Training

Support

Activities necessary for successful system operation

DOCUMENTATION



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graph TD; A[Activities necessary for successful system operation  
DOCUMENTATION] --> B[System Documentation]; A --> C[User Documentation]; B --- D[▪ System design specifications  
▪ Internal workings  
▪ Functions]; C --- E[▪ Visual/written information  
▪ How system works  
▪ How to use it]
```

**System
Documentation**

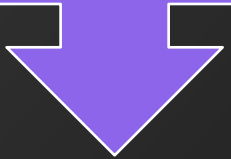
- System design specifications
- Internal workings
- Functions

**User
Documentation**

- Visual/written information
- How system works
- How to use it

Activities necessary for successful system operation

TRAINING & SUPPORTING USERS



Users need the opportunity to ...

Use safely

Ask questions

Gain
assistance

Or they will ...

Misuse

Under use

Not use

Activities necessary to keep the system working and up to date

MAINTENANCE

Changes made to fix
or enhance the system

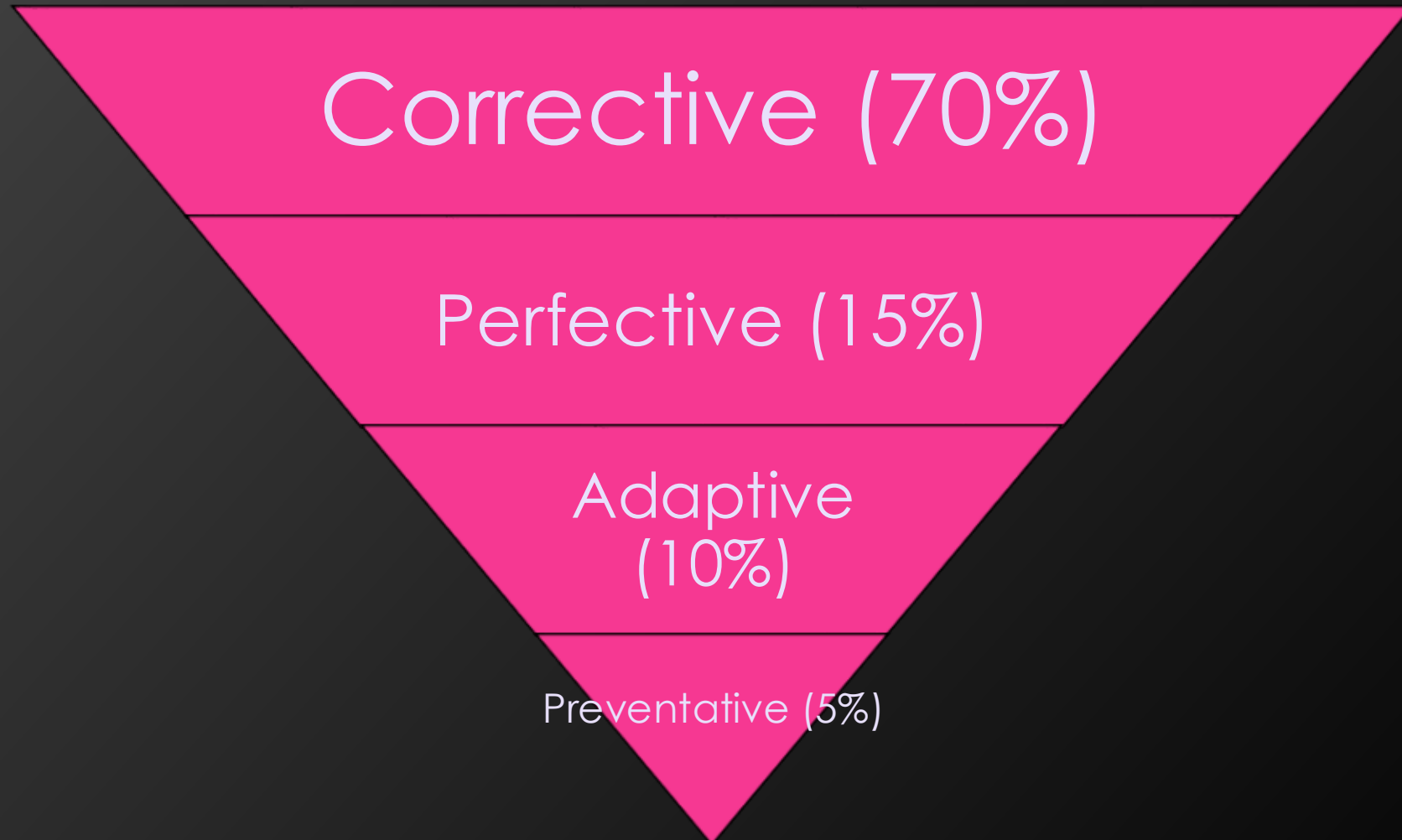
Can begin soon after
the new system is
installed

Helps support
changing business
needs

Largest expenditure for
many organisations

Maintenance is for the lifetime of the system...
Until considering to develop a new system

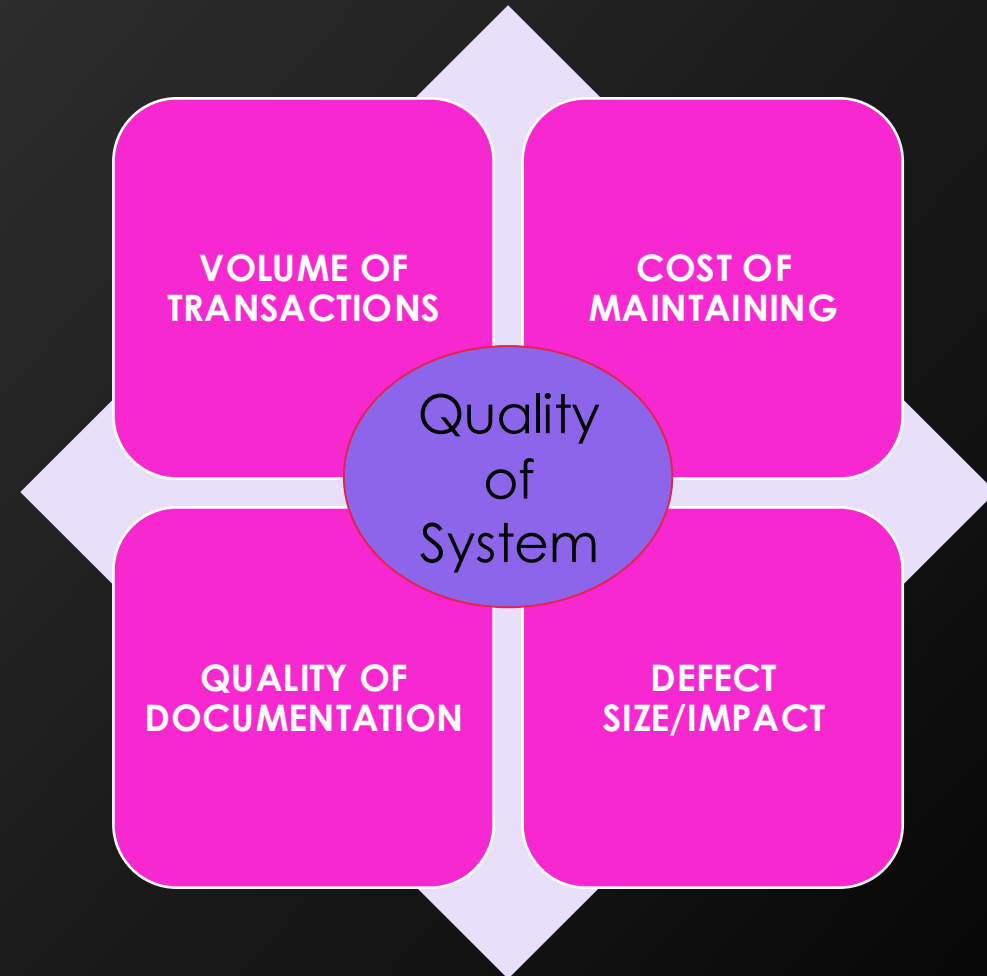
TYPES OF MAINTENANCE



FACTORS INFLUENCING MAINTENANCE

If the cost of maintenance starts to outweigh the cost of developing a new system, then maintenance must come to an end.

Whatever lifecycle we choose, and no matter how well we build a system, the evolution of technology and changing business needs will ensure developers will always have work to do!



PROJECT CLOSE DOWN

Successful guidance of the project through the chosen lifecycle

Evaluate the project and the development team

Post-project review with management and clients

Important lessons for future projects

RESOURCES

- Kendall and Kendall, Chapter 16- Quality Assurance and Implementation (from page 488). <https://www.dawsonera.com/readonline/9780273788515>
- Hoffer, George and Valacich, Part 5 Implementation and Maintenance (from page 479). <https://www.dawsonera.com/readonline/9780273788430>
- Valacich, George & Hoffer (2006). *Essentials of Systems Analysis and Design*. Prentice Hall
- Dennis, Wixom and Tegarden (2005). *Systems Analysis and Design with UML V2.0*. Wiley
- Yeates & Wakefield (2004). *Systems Analysis and Design*. Prentice Hall