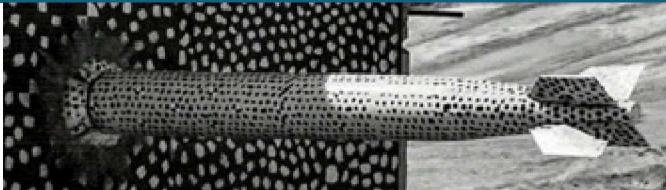


Software Product Lines for Immersive Training



Presented By

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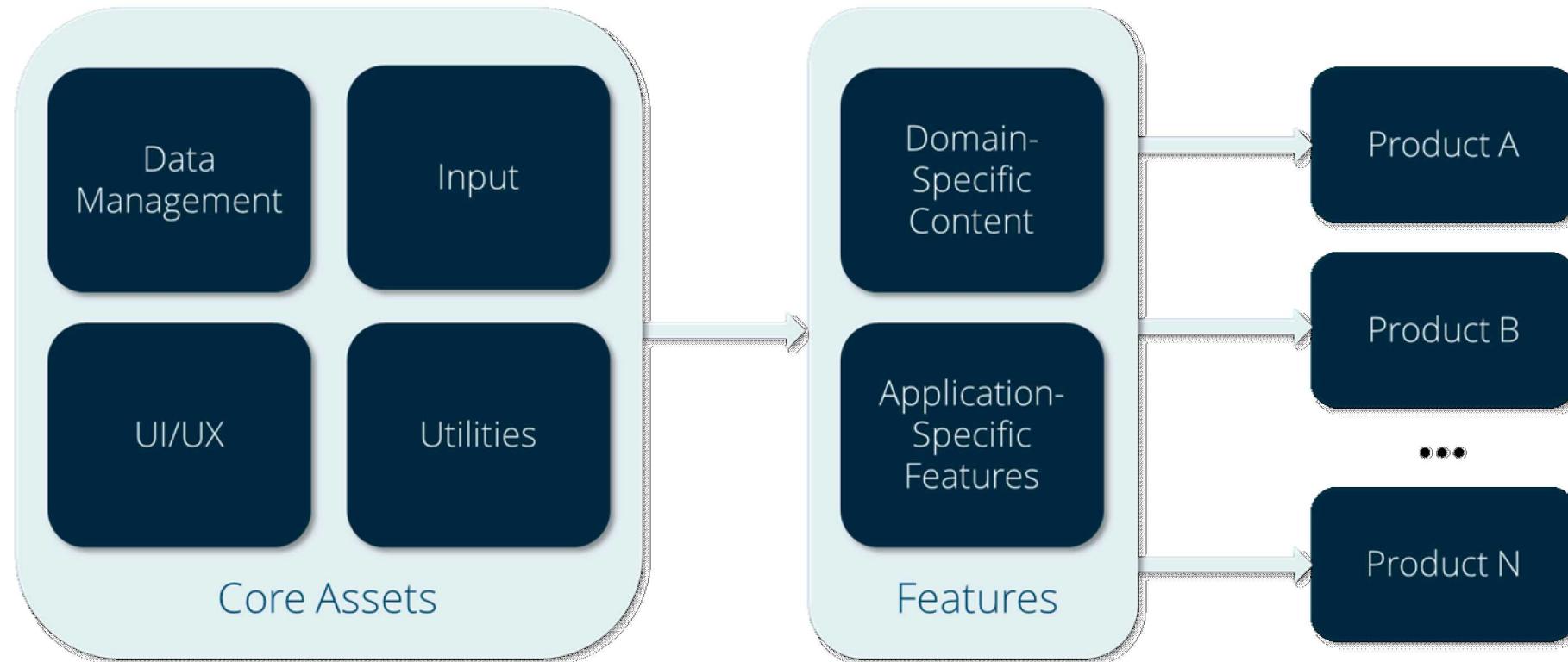


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What are Software Product Lines?

As defined by Carnegie Mellon University's Software Engineering Institute (SEI):

A software product line is a set of software-intensive systems that share a common, managed set of features satisfying the specific needs of a particular market segment or mission and that are developed from a common set of core assets in a prescribed way.



What are the general benefits?



From the SEI:

- Improved productivity
- Increased quality
- Decreased cost
- Decreased labor needs
- Decreased time to market
- Ability to move into new markets in months, not years

Additionally:

- Common look and feel
- Easier to maintain all products
- Easier to pick up for new and temporary team members



How do software product lines help XR at Sandia?

Software product lines are ideal for:

- Small teams with limited budget
- Multiple teams working with the same technical stack
- Supporting a variety of devices
- Architecting for quality attributes that are important for Sandia:
 - Security
 - Performance
 - Modifiability
 - Maintainability





Safety-Focused Training for Engineers

- New hires can learn what they didn't learn in school
- Training is streamlined with the goal to reduce time to competency
- Cost effective, readily available solution
- Augmenting existing training curriculum to reduce time in hands-on training





Dashboard

Average questions correct: 7.5

Average correct: 3.5

Date application run: 2023-06-28

Times run: 3

Date

Date	Times run
6/28	1
6/29	1
6/30	1

Training Feedback

Question

This is an example question for this step.

1.1

1.2

2.1

2.2

3.1

3.2

3.3

Selected Answer

✗ Answer A

You did not select the correct answer for this question. See the correct answer to the right.

Correct Answer

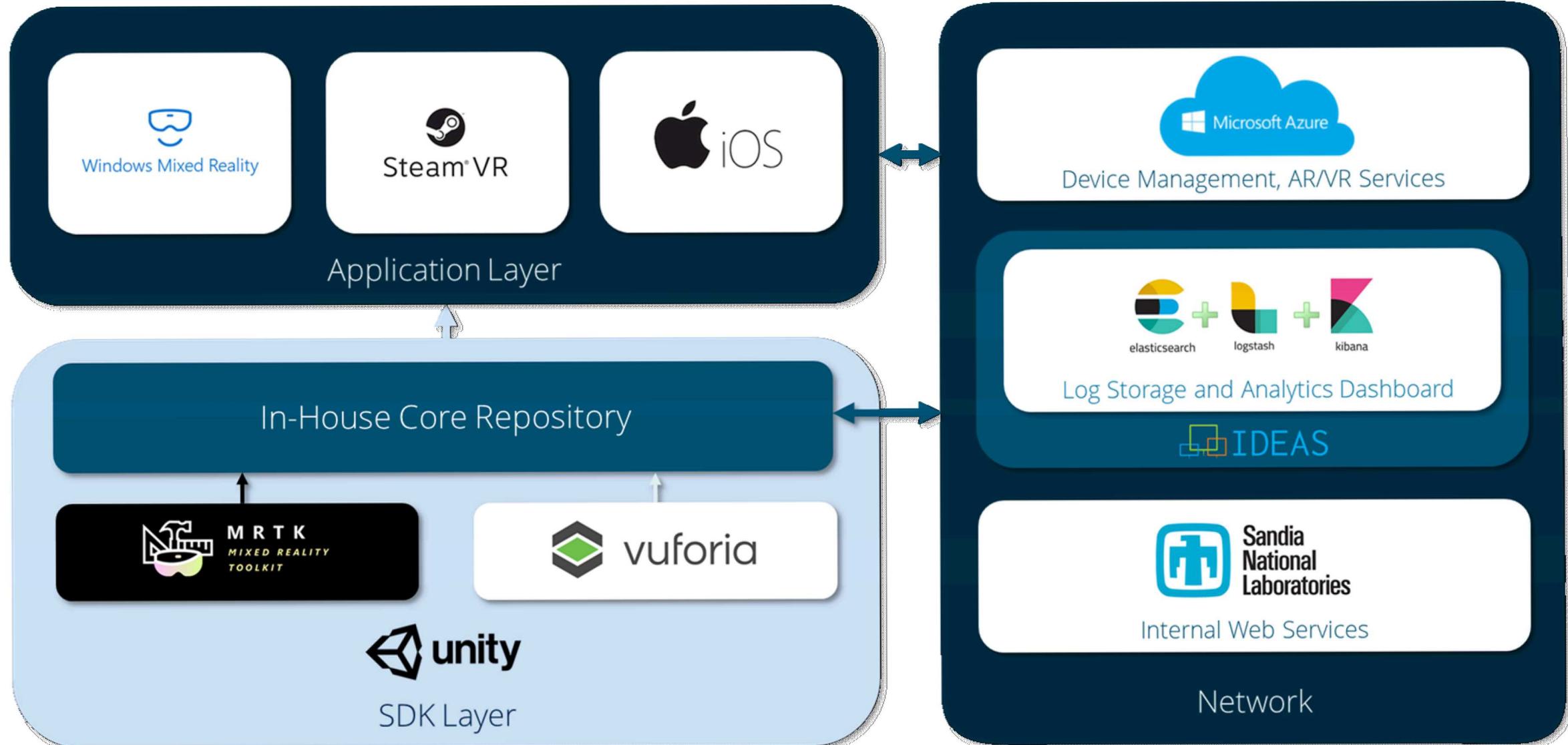
Answer D

5 / 12 Trophies

0 / 0 Ribbons

2 / 4 Stars

Target Technical Stack





Core Repository

Cross-Device Portability

- Device-Specific Input
- Graphics Optimizations

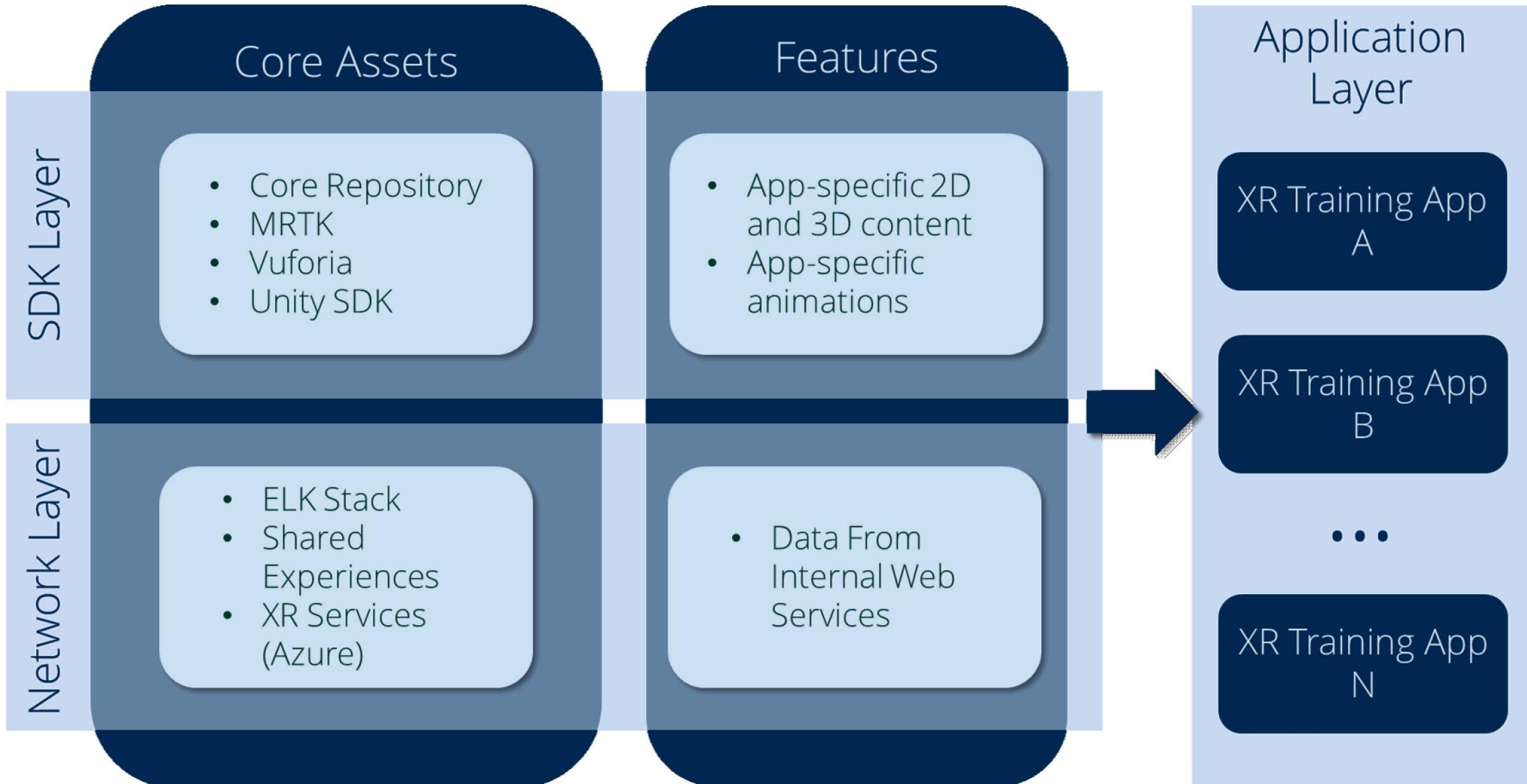
Training Components

- Virtual Guide
- Step, Question, and Answer Management
- Scoring Mechanism
- Session Metrics

General Reusable Components

- Data Management
- Scene Management
- Logging
- User Interface (UI)
 - Design
 - Management
 - Animations
 - Custom UI Elements

Putting it all together...



Questions?