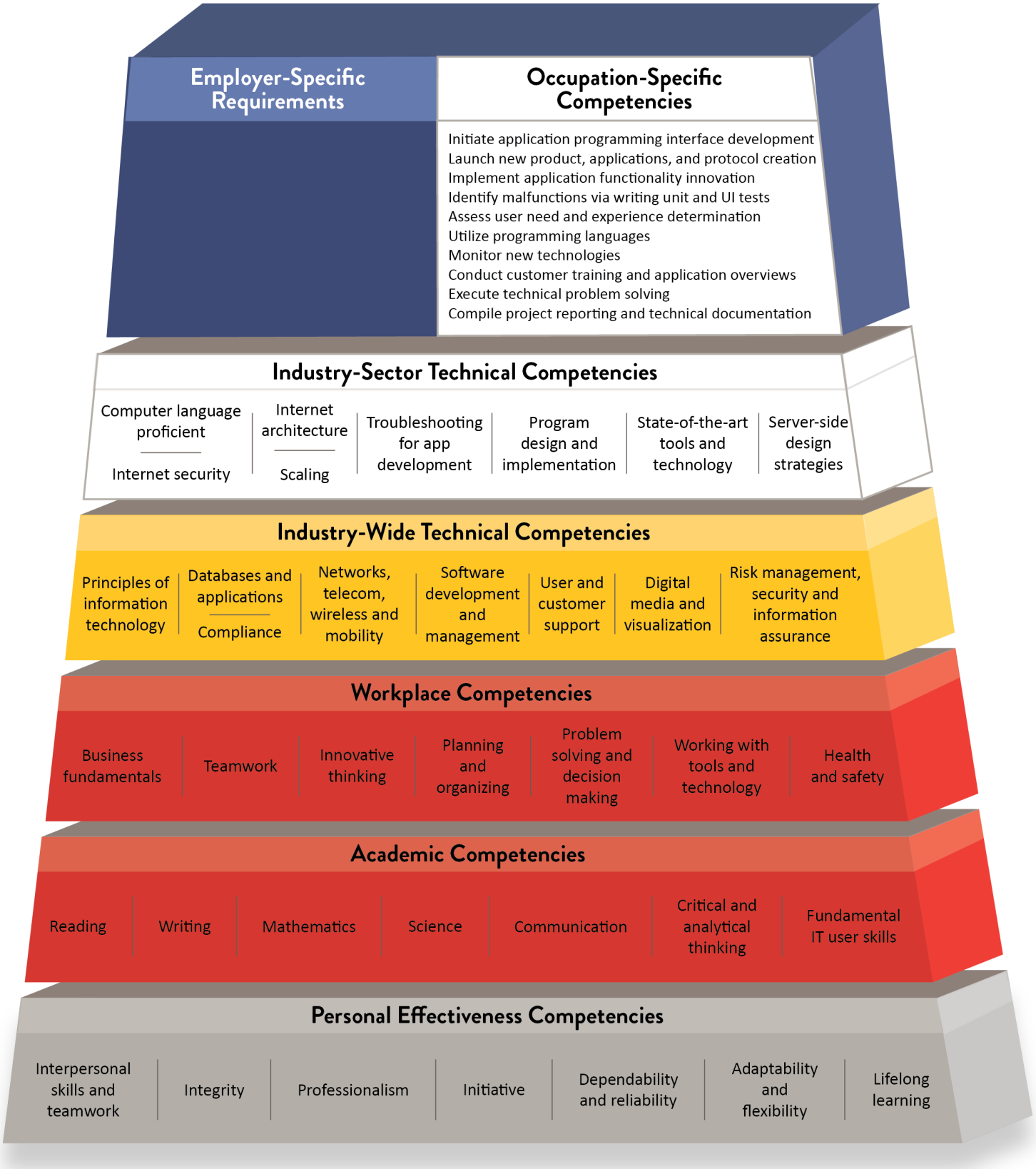
Minnesota Dual-Training Pipeline

Competency Model for Information Technology
Occupation: Application Developer



Based on: Information Technology Competency Model, Employment and Training Administration, United States Department of Labor, February 2025. For more detailed information about competency model creation and sources, visit dli.mn.gov/business/workforce/information-technology.

Competency Model for Application Developer

Application Developer – A professional who designs, creates, deploys, and updates computer applications for a particular device, the web, or a specific operating system. This person is an important part of a project management or technical team that is responsible for meeting user needs. Application developers work in almost every industry and are involved in performing routine updates to applications and then work to release them to end-users.

*Pipeline recommends the Industry-Sector Technical Competencies as formal training opportunities (provided through related instruction) and the Occupation-Specific Competencies as on-the-job (OJT) training opportunities.

Industry-Sector Technical Competencies

Related Instruction for dual training means the organized and systematic form of education resulting in the enhancement of skills and competencies related to the dual trainee's current or intended occupation.

- **Computer language proficient** – Understand how to code to produce a functional program.
- **Internet security** – Understand a range of security tactics for protecting activities and transactions conducted online over the internet. These are meant to safeguard users from threats, malicious software that can infect and damage systems.
- **Internet architecture** – Understand varying frameworks of a computer network.
- **Scaling** – Know how to do the initial planning for the ability of the application to manage an increasing number of customers, clients and/or users and successful ongoing maintenance.
- **Troubleshooting for App Development** – Be able to evaluate an alternative to an ongoing challenge and create potential solutions.
- **Program design and implementation** – Know how to follow a specific methodology for program design and implementation.
- **State-of-the-art tools and technology** – Know how to stay up to date on the most advanced IT tools and technology and have a passion for ongoing technical learning.
- **Server-side design strategies** – Know how to use responsive design and server-side components.

Occupation-Specific Competencies

On-the-Job Training is hands-on instruction completed at work to learn the core competencies necessary to succeed in an occupation. Common types of OJT include job shadowing, mentorship, cohort-based training, assignment-based project evaluation and discussion-based training.

- **Initiate application programming interface development** – Understand a software intermediary that enables applications to exchange data and functionality easily and securely.
- **Launch new product, applications, and protocol creation** – Have knowledge of multiple operation platforms.
- **Implement application functionality innovation** – Be able to have creativity and be open to team collaboration to meet customer needs.
- **Identify malfunctions via writing unit and UI tests** – Understand how to build application software by testing it for its functionality, usability, and consistency.
- **Assess user need and experience determination** – Know how to provide proactive communication with customers to keep them informed on project or incident progress, setting clear expectations for follow-up, and following through on those commitments.
- **Utilize programming languages** – Know how to be a versatile developer and quickly adapt to industry trends as it relates to programming languages for development.
- **Monitor new technologies** – Remain up to date with terminology, concepts, and best practices.
- **Conduct customer training and application overviews** – Know how to enable the customer to use the application well and to see the big picture and readily solve problems.
- **Execute technical problem solving** – Be able to have superior analytical skills to expedite solutions.
- **Compile project reporting and technical documentation** – Know how to create and maintain ongoing documentation.

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