Minnesota Dual-Training Pipeline
Competency Model for Information Technology
Occupation: Application Developer

Employer-Specific Requirements
- Application programming interface development
- New product, applications, and protocol creation
- Application functionality innovation
- Identify malfunctions via writing unit and UI tests
- User need and experience determination
- Programming languages
- New technologies awareness
- Customer training and application overviews
- Technical problem solving
- Project reporting and technical documentation

Occupation-Specific Competencies
- Computer language proficient
- Internet architecture
- Troubleshooting for app development
- Program design and implementation
- State-of-the-art tools and technology
- Server-side design strategies

Industry-Sector Technical Competencies
- Principles of information technology
- Databases and applications
- Networks and languages
- Software development and management
- User and customer support
- Compliance
- Risk management, security and information Assurance

Industry-Wide Technical Competencies
- Business fundamentals
- Teamwork
- Innovative thinking
- Planning and organizing
- Problem solving and decision making
- Working with tools and technology

Workplace Competencies
- Reading
- Writing
- Mathematics
- Science
- Communication
- Critical and analytic thinking
- Fundamental IT user skills

Personal Effectiveness Competencies
- Interpersonal skills and teamwork
- Integrity
- Professionalism
- Initiative
- Dependability and reliability
- Adaptability and flexibility
- Lifelong learning

Based on: Information Technology Competency Model Employment and Training Administration, United States Department of Labor, September 2012.

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

Industry-Sector Technical Competencies

- **Computer language proficient** — Understand how to code to produce a functional program.
- **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.
- **Program design and implementation** — Know how to follow a specific methodology for program design and implementation.
- **Troubleshooting for App Development** — Be able to evaluate an alternative to an ongoing challenge and create potential solutions.
- **Internet architecture** — Understand varying frameworks of a computer network.
- **Server-side design strategies** — Know how to use responsive design and server-side components.
- **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.
- **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.

Occupation-Specific Competencies

- **Application programming interface development** — Understand a software intermediary that enables applications to exchange data and functionality easily and securely.
- **New product, applications, and protocol creation** — Have knowledge of multiple operation platforms.
- **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.
- **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.
- **Programming languages** — Know how to be a versatile developer and quickly adapt to industry trends as it relates to programming languages for development.
- **New technologies awareness** — Remain up to date with terminology, concepts, and best practices.
• **Customer training and application overviews** – Know how to enable the customer to use the application well and in order to see the big picture and readily solve problems.

• **Technical problem solving** – Be able to have superior analytical skills to expedite solutions.

• **Project reporting and technical documentation** – Know how to create and maintain ongoing documentation.
## Application Developer Occupational Training Plan

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<th>Related Instruction Competencies</th>
<th>List Course/Training Name and Title</th>
<th>Description of Courses and/or Training Program</th>
<th>List Responsible Provider: Company, College, Trainer, or other</th>
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