OVERVIEW

Year Up’s Job & Industry Training in Application Development & Support provides opportunities for participants to develop the essential career readiness and business skills needed to navigate a modern, professional work environment. In combination with the Essential Skills Training, participants will also build technical foundational capabilities and are expected to demonstrate the following competencies by the end of the training phase.

COMPUTER ARCHITECTURE & SYSTEMS FUNDAMENTALS:
• Computer Systems: Navigates computer systems with focus on operating systems (Windows, Linux and Mac), servers, and cloud infrastructure.

PROGRAMMING FUNDAMENTALS:
• Basic Program Writing: Writes and executes basic programs by employing concepts of a programming and scripting language such as Java, Python, C#, R or JavaScript.
• Programming Concepts Application: Utilizes different programming concepts to problem solving such as data types, variables, conditionals, methods, loops and data structures.
• Development Environment Navigation: Navigates and works with the common components of a software development environment, including IDE, frameworks, and libraries.
• Code Error Identification: Identifies software issues through code reviews and utilizes IDE tools to debug and resolve issues.

DATABASE FUNDAMENTALS:
• Databases:Navigates a basic relational database design including tables, keys, constraints, indexes and normalization.
• Basic Query Writing: Constructs and executes basic SQL commands to answer questions with a database.

QUALITY ASSURANCE & SOFTWARE TESTING:
• Software Test Writing & Execution: Utilizes software testing concepts and techniques, including development of unit tests, to validate code.

SOFTWARE DEVELOPMENT FUNDAMENTALS:
• Version Control System Navigation: Utilizes basic features of a version control system (e.g. Git, CVS, Subversion, etc.), including command line & GUI tools.
• Software Solution Communication: Articulates software solutions to business problems, using design tools such as decision trees, flow charts or pseudocode.
• Software Release Navigation: Navigates the terminology and architecture of common software release management infrastructure and processes.
• Software Methodology Application: Utilizes basic concepts, tools and processes of common SDLC methodologies such as Agile/Scrum or Waterfall required to work within a software development team.
• Problem Analysis: Navigates a multilayer & ambiguous problem by clarifying the problem statement and objectives, breaking it down into discrete components, identifying assumptions, setting strategies/resources for validating, and building clarity, understanding audience, applying root cause analysis, and developing a set of possible solutions.

APPLICATION DEVELOPMENT:
• Intermediate Program Writing: Writes and executes intermediate programs using programming and scripting languages such as Java, Python, C#, R, or JavaScript.
• User Interface Design: Interprets a software design that includes user interface design.
• Object-Oriented Programming: Interprets a software design that includes data structures, basic algorithms and patterns, object-oriented programming concepts, and APIs.
To best serve our partners and today’s in-demand jobs, Year Up has designed its Job & Industry Training to enable entry and succession across a variety of role pathways. These role pathways reflect the most common entry-level roles that Year Up participants are prepared for and that graduates obtain upon program completion.

### ROLE PATHWAYS

<table>
<thead>
<tr>
<th>ROLE PATHWAYS</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>UI/UX DESIGN &amp; DEVELOPMENT</strong></td>
<td>These roles work with software engineering teams to gather requirements for building desktop, web or mobile user interfaces, use design tools and practices to build user interfaces to specifications and assist in the development, testing and release of user interface code.</td>
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<tr>
<td><strong>SERVER/CLOUD DEVELOPMENT</strong></td>
<td>These roles gather requirements for building server or cloud applications, make incremental changes to server or cloud systems, debug issues, make fixes and maintain server or cloud infrastructure and applications.</td>
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<tr>
<td><strong>MOBILE APP DEVELOPMENT</strong></td>
<td>These roles work in agile teams to update &amp; edit mobile applications, use programming languages to incrementally build new mobile applications, and assist in associated processes such as requirements gathering, design, testing and mobile app release.</td>
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<tr>
<td><strong>DEVOPS/AUTOMATION</strong></td>
<td>These roles work with software engineering teams to assist in the automation of software build, testing, deployment, configuration and monitoring processes to improve efficiency and reduce the complexity and length of the software development life cycle.</td>
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<tr>
<td><strong>PRODUCTION SUPPORT</strong></td>
<td>These roles assist with identifying &amp; resolving issues with software systems in production and communicate findings/resolution with end users and software teams; build or utilize tools to monitor production systems and automate production support processes.</td>
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<tr>
<td><strong>SOFTWARE PROJECT MANAGEMENT</strong></td>
<td>These roles work in agile teams to assist in the management of software development processes using methodologies like Scrum.</td>
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<tr>
<td><strong>APPLICATION DEVELOPMENT</strong></td>
<td>These roles work in agile teams to update and edit software systems, use programming languages to incrementally build new software, and assist in associated processes.</td>
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<tr>
<td><strong>WEB DEVELOPMENT</strong></td>
<td>These roles work in agile teams to update and edit web pages and services, use programming languages to incrementally build new websites or web servers, and assist in associated processes.</td>
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### CREDENTIALING OPPORTUNITIES

*Details vary by location*

- Participants’ completion of Year Up’s Job & Industry Training may prepare them to sit for common industry-recognized certifications prior to or during the work-based experience phase of the program.
- While enrolled in the Year Up program, participants may also be eligible to receive college credits or transferrable credit recommendations.

### EXAMPLE TEAMS SUPPORT

- Web Development
- UI/UX Design & Development
- DevOps

### EXAMPLE PARTNER COMPANIES

- Bank of America
- BNY Mellon
- AT&T
- Microsoft
- American Express
- Wells Fargo