

DACUM Research Chart for Computer Programmer/Developer (entry level)

DACUM Panel

Rick Abrams
Division Manager/Systems and
Programming
Gates McDonald & Co.
Powell, OH

Gregory J. Bonk
IT Architect
Compuware Corporation
Columbus, OH

Peter Leonard
Senior Director
Covansys
Columbus, OH

Paul Majeed
Project Manager
Compuware Corporation
Columbus, OH

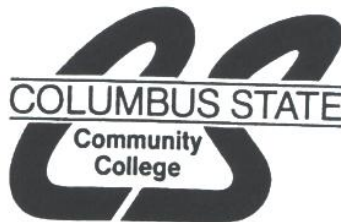
Kris T. Mason
Senior Consultant
Information Control Corp.
Columbus, OH

Dale McComb
IT Consultant
Kforce, Incorporated
Mount Vernon, OH

DACUM Facilitator

John Moser
Consultant
Columbus, OH

Produced for



550 E. Spring Street
Columbus, OH

Developed by



**CENTER ON EDUCATION
AND TRAINING FOR EMPLOYMENT**
COLLEGE OF EDUCATION
THE OHIO STATE UNIVERSITY
1900 Kenny Road • Columbus, Ohio 43210-1090

April 22-23, 2002

DACUM Research Chart for Computer Programmer/Developer

Duties		Tasks				
A	Determine Application Requirements	A-1 Review business documentation	A-2 Interview subject matter experts	A-3 Analyze functional and technical requirements	A-4 Identify constraints and risks	A-5 Develop use cases
		B-1 Document business rules	B-2 Draw data/object model	B-3 Draw ER diagrams	B-4 Draw data flow diagrams	B-5 Confirm system infrastructure design
B	Design Application Solution	B-12 Document error handlers	B-13 Design security matrix	B-14 Develop disaster/recovery plan	B-15 Prepare deployment plan	
		C-1 Develop test strategy	C-2 Develop test plan	C-3 Develop test data	C-4 Write test scripts (e.g., unit, regression, system, integration, acceptance, volume, performance)	
C	Design Applications Tests					
D	Construct Application Solution	D-1 Review development standards	D-2 Design detailed modules	D-3 Write pseudocode	D-4 Write code	D-5 Document code
		E-1 Execute test plan/scripts (e.g., system, user, regression, performance)		E-2 Automate test scripts	E-3 Document test results	E-4 Track testing issues
E	Test Application Solution					
F	Deploy Application Solution	F-1 Pack code	F-2 Prepare control code (e.g., JCL, shell scripts, OCL)	F-3 Move code	F-4 Load production data	F-5 Load deployment-specific settings
		G-1 Review project plan, charter and documentation	G-2 Participate in meetings (e.g., status, design, deployment)	G-3 Collaborate with team members	G-4 Provide work estimates (e.g., time, work duration)	G-5 Report project time
G	Support Project Administration					
H	Pursue Career Growth	H-1 Manage career goals	H-2 Participate in continuing education classes	H-3 Obtain professional certifications	H-4 Participate in professional organizations	H-5 Network with colleagues

A-6 Develop requirements traceability matrix						
B-6 Draw systems flow diagrams	B-7 Draw state transition diagrams	B-8 Specify data validation	B-9 Design report/file layouts	B-10 Design user interface (e.g., GUI, Command Line, 3270, remote)		B-11 Develop program packaging
C-5 Document expected results	C-6 Map test scripts to requirements	C-7 Confirm test environment				
D-6 Review code for compliance (e.g., standards, accuracy, completeness, style)		D-7 Execute test plan/scripts (e.g., unit, integration)	D-8 Manage code			
E-5 Test deployment	E-6 Test disaster recovery plan					
F-6 Verify deployment	F-7 Deploy operating instructions (e.g., user, system, help desk operator)		F-8 Schedule jobs	F-9 Support end-user training	F-10 Provide post-application support	
G-6 Report individual project status	G-7 Report risks, concerns and issues	G-8 Manage development environment	G-9 Document lessons learned			
H-6 Identify business opportunities	H-7 Write technical articles	H-8 Read trade journals	H-9 Volunteer for special assignments			

General Knowledge and Skills

Keyboarding	Quality assurance
Interpersonal skills	Configuration management
Time management	Algorithms
Written and oral communication skills	Data structure
Computer skills	Design patterns
Analytical/problem solving skills	Design methodologies
Technical skills	Normalization
Logical thinking skills	Stress management
Organizational skills	Ability to evaluate alternatives
Programming style	Ability to prioritize
Software-life cycle	Apply previous solutions to new situations
Data base, object oriented, structured, web, client server programming	Relational data base
	Network environments
	Applicable industry

Worker Behaviors

Team player	Pro active
Positive	Thick-skinned
Task oriented	Responsible
Detail orientation	Dependable
Ethical	Reliable
Loyal	Flexible
Assertive	Self-motivated
Responsive	Cooperative
Respectful	Alert
Outgoing	Goal oriented
Persuasive	

Tools, Equipment, Supplies and Materials

Computer	Languages: HTML, XML,
Telephone	ASP, JSP, CTT, JAVA,
Configuration management tools: PVCS, Microsoft Visual Source Safe, Clear Case, Librarian & Panvalet (Mainframe only)	SQL, COBOL, CICS, Assembler, Visual Basic
Software: Microsoft Office, Visio, Project Windows, Unix/Linux	Software Development Kit (SDK): JDK, J2E, MFC, Cobol Instant Debugger Editor
IDE - Integrated Development Environment (Source Editor, Debugger, Animated)	Net
	Application server
	Web server
	D.B. server
	Modelina tool

Future Trends and Concerns

Rapid technology change
Unclear market direction
Continued growth of Web
Unstable new technology
Lack of qualified personnel
Adoption of new standards

Acronyms

GUI	Graphical User Interface
ER	Entity Relationship
JCL	Job Control Language
OCL	Operator Control Language
OO	Object Oriented