

# DACUM Research Chart for Information Technologist

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# DACUM Research Chart for Information Technologist

Duties		← Tasks →				
A	<b>Determine Client/User Needs</b>	A-1 Interview prospective users	A-2 Determine security needs	A-3 Determine limitations (e.g., space, power, user-specified)		A-4 Evaluate current hardware/software environment
		B-1 Analyze current systems	B-2 Determine system users	B-3 Determine system architecture (e.g., single, dual, cluster)		B-4 Determine operating system (Windows, Mac Linux, Unix)
B	<b>Design Systems</b>	B-10 Build system per requirements	B-11 Test system against requirements	B-12 Integrate system into existing environment	B-13 Perform integration tests	B-14 Perform regression tests
		C-1 Analyze current network	C-2 Determine network users	C-3 Determine network architecture (e.g., bandwidth, topology, security interfaces)		C-4 Determine network operating systems
C	<b>Design Network</b>	D-1 Select development methodology (e.g., Waterfall, RAD, XP)		D-2 Determine platform (e.g., DB, OS, web server, application server)		D-3 Design user interface
		D-9 Code software	D-10 Test software units	D-11 Integrate software with hardware	D-12 Test integrated units	D-13 Perform user beta test
D	<b>Develop Software</b>	E-1 Create user manual	E-2 Create final design document	E-3 Create user help documentation	E-4 Create system administrator documentation	E-5 Create software maintenance manual
		F-1 Determine trainees	F-2 Determine training location & schedule	F-3 Designate a trainer	F-4 Prepare training materials (e.g., handouts, disks, manuals)	
E	<b>Develop Documentation</b>	G-1 Obtain drivers & patches	G-2 Install drivers & patches	G-3 Install upgrades (e.g., hardware, software)	G-4 Recreate user-identified problems	G-5 Troubleshoot identified problems
		G-13 Tune system configuration	G-14 Perform daily system back-ups	G-15 Maintain system security	G-16 Add/delete system users	
F	<b>Provide Client Training and Support</b>	H-1 Analyze system usage		H-2 Review project progress	H-3 Adjust project schedule	H-4 Create project status report
		I-1 Monitor industry developments (e.g., periodicals, email, newsletters)		I-2 Evaluate new technologies	I-3 Maintain reference library	I-4 Complete on-line, industry related courses
G	<b>Maintain Hardware/Software/Network</b>	H-1 Analyze system usage		H-2 Review project progress	H-3 Adjust project schedule	H-4 Create project status report
		I-1 Monitor industry developments (e.g., periodicals, email, newsletters)		I-2 Evaluate new technologies	I-3 Maintain reference library	I-4 Complete on-line, industry related courses
H	<b>Perform Project Management</b>	I-1 Monitor industry developments (e.g., periodicals, email, newsletters)		I-2 Evaluate new technologies	I-3 Maintain reference library	I-4 Complete on-line, industry related courses
		I-1 Monitor industry developments (e.g., periodicals, email, newsletters)		I-2 Evaluate new technologies	I-3 Maintain reference library	I-4 Complete on-line, industry related courses
I	<b>Maintain Continuing Education</b>	I-1 Monitor industry developments (e.g., periodicals, email, newsletters)		I-2 Evaluate new technologies	I-3 Maintain reference library	I-4 Complete on-line, industry related courses

A-5 Determine project requirements	A-6 Estimate project cost & schedule	A-7 Prepare project proposal	A-8 Present project proposal			
B-5 Determine storage requirements	B-6 Determine memory requirements	B-7 Determine communication requirements (e.g., modem, LAN, cable)		B-8 Determine display requirements (e.g., size, quality, space)		B-9 Determine processor requirements (application, speed)
C-5 Determine equipment (e.g., hubs, routers, switches)		C-6 Determine TELCO requirements (e.g., phone, TI, ISDN)		C-7 Diagram proposed network	C-8 Develop network implementation plan	C-9 Implement network plan
D-4 Design database	D-5 Design business rules	D-6 Determine programming language (e.g., Java, C++, Perl)		D-7 Diagram software design (e.g., flowchart, UML)		D-8 Review software design with user
D-14 Perform acceptance test with user	D-15 Develop software implementation plan	D-16 Deploy software to users				
E-6 Create end user training manual	E-7 Provide source code	E-8 Create disaster recovery plan	E-9 Create operational contingency plan			
F-5 Prepare training lab & test data	F-6 Conduct training	F-7 Provide support procedures				
G-6 Determine solution(s)	G-7 Implement solution(s)	G-8 Test solution(s)	G-9 Perform regression tests	G-10 Update documentation (e.g., system, user, code)	G-11 Monitor system performance	G-12 Perform periodic diagnostic tests
H-6 Conduct periodic project review with user						
I-5 Complete industry related courses	I-6 Obtain industry certifications	I-7 Network with peers				

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## General Knowledge and Skills

Organization skills	Interviewing skills
General computer skills	Technical writing skills
Oral/written communication skills	Diagramming
Research skills	knowledge/skills
Troubleshooting skills	Math skills
Hardware knowledge	Database skills
Development tool knowledge	Programming languages
Configuration management skill/knowledge	Security knowledge
Computer programming skills	Internet knowledge
Logic skills	Teamwork skills
Business knowledge	System testing skills
Time management skills	Diagnostic skills
Operating systems knowledge	Networking knowledge
	Training skills

## Worker Behaviors

Self-motivated	Responsible
Patient	Detail-oriented
Inquisitive	Analytical
Perseverance	Team player
Organized	Flexible
Artistic	Diplomatic
Creative	Ethical
Tolerant	Stress-tolerant
Meticulous	Dependable
Interested	Sense of humor

## Tools, Equipment, Supplies and Materials

Computers	Reference materials
Editors	Routers
Interpreters	Hubs
Debuggers	Switches
Version control software	Cable
Build control software	Security diagnostic tools
Emulators	Basic office supplies
Network operating systems	Internet
Software diagnostic tools	Diagramming software
Cable tester	Word processing software
Network analyzer	Presentation software
Cable crimpers	Spreadsheet software
Beeper	Database software
Cell phones	E-mail/instant messaging
Printers	Project management software
Scanners	Calendar software
Copiers	Prototype systems
Telephone	Digital cameras
Basic computer tool kit	

## Future Trends and Concerns

Rapidly changing technology  
Shift from machine focus to network focus  
Shift from desktop application to internet application  
Expansion of computers to appliances  
Move to wireless network technology  
Computer security  
Need for continuous education

## Acronyms

XP	Extreme Programming
RAD	Rapid Application Development
DB	Database
UML	Unified Modeling Language
OS	Operating System
TELCO	Telephone Company
CIO	Chief Information Officer