Occupation-Specific Information - Computer System Analyst

https://www.onetonline.org/link/summary/15-1211.00

Job-Description

Analyze science, engineering, business, and other data processing problems to develop and implement solutions to complex applications problems, system administration issues, or network concerns. Perform systems management and integration functions, improve existing computer systems, and review computer system capabilities, workflow, and schedule limitations. May analyze or recommend commercially available software.

Sample of reported job titles: Applications Analyst, Business Systems Analyst, Computer Analyst, Computer Systems Analyst, Computer Systems Consultant, Information Systems Analyst (ISA), Information Technology Analyst (IT Analyst), System Analyst, Systems Analyst

Tasks

- Test, maintain, and monitor computer programs and systems, including coordinating the installation of computer programs and systems.
- Troubleshoot program and system malfunctions to restore normal functioning.
- Expand or modify system to serve new purposes or improve work flow.
- Use the computer in the analysis and solution of business problems, such as development of integrated production and inventory control and cost analysis systems.
- Consult with management to ensure agreement on system principles.
- Confer with clients regarding the nature of the information processing or computation needs a computer program is to address.
- Develop, document, and revise system design procedures, test procedures, and quality standards.
- Train staff and users to work with computer systems and programs.

- Coordinate and link the computer systems within an organization to increase compatibility so that information can be shared.
- Assess the usefulness of pre-developed application packages and adapt them to a user environment.
- Define the goals of the system and devise flow charts and diagrams describing logical operational steps of programs.
- Provide staff and users with assistance solving computer-related problems, such as malfunctions and program problems.
- Use object-oriented programming languages, as well as client and server applications development processes and multimedia and Internet technology.
- Review and analyze computer printouts and performance indicators to locate code problems, and correct errors by correcting codes.
- Supervise computer programmers or other systems analysts or serve as project leaders for particular systems projects.
- Read manuals, periodicals, and technical reports to learn how to develop programs that meet staff and user requirements.
- Determine computer software or hardware needed to set up or alter system.
- Analyze information processing or computation needs and plan and design computer systems, using techniques such as structured analysis, data modeling, and information engineering.
- Interview or survey workers, observe job performance, or perform the job to determine what information is processed and how it is processed.
- Specify inputs accessed by the system and plan the distribution and use of the results.
- Prepare cost-benefit and return-on-investment analyses to aid in decisions on system implementation.
- Recommend new equipment or software packages.

Technology Skills

- Access software — Access management software; Citrix cloud computing software

- Accounting software — Fund accounting software; Tax software
- Administration software — Cisco Systems CiscoWorks; Element management software
- Analytical or scientific software — IBM SPSS Statistics Hot technology ; Minitab Hot technology ; SAS statistical software; The MathWorks MATLAB Hot technology
- Application server software — Docker Hot technology ; Red Hat OpenShift Hot technology ; Red Hat WildFly Hot technology ; Spring Boot Hot technology
- Backup or archival software — System and data disaster recovery software; Veritas NetBackup
- Business intelligence and data analysis software — Apache Spark Hot technology ; MicroStrategy Hot technology ; Oracle Business Intelligence Enterprise Edition Hot technology ; Qlik Tech QlikView Hot technology
- Cloud-based data access and sharing software — Microsoft SharePoint Hot technology ; Slack
- Cloud-based management software — Amazon Web Services AWS CloudFormation Hot technology ; IBM WebSphere Hot technology ; Splunk Enterprise Hot technology
- Communications server software — IBM Domino
- Compiler and decompiler software — Time sharing option TSO software
- Computer aided design CAD software Hot technology — Dassault Systemes CATIA; Electronic design automation EDA software; OrCAD Capture; SpectraQuest
- Configuration management software — Chef; Perforce Helix software; Puppet Hot technology ; VMware Hot technology
- Content workflow software — Atlassian JIRA Hot technology
- Customer relationship management CRM software — Blackbaud The Raiser's Edge; Oracle Eloqua; Salesforce software Hot technology
- Data base management system software — Amazon DynamoDB Hot technology ; Apache Hive Hot technology ; Elasticsearch Hot technology ; MongoDB Hot technology
- Data base reporting software — Microsoft SQL Server Reporting Services SSRS; Oracle Business Intelligence Suite; SAP Crystal Reports Hot technology
- Data base user interface and query software — Amazon Elastic Compute Cloud EC2 Hot technology ; Blackboard software; Oracle JDBC Hot technology ; Transact-SQL Hot technology
- Data conversion software

- Data mining software — Google Analytics Hot technology
- Desktop communications software — Remote control software; Skype; Stac Software ReachOut; Symantec pcAnywhere
- Desktop publishing software — Microsoft Publisher
- Development environment software — Apache Ant Hot technology ; Apache Kafka Hot technology ; Common business oriented language COBOL Hot technology ; Go Hot technology
- Document management software — Adobe Systems Adobe Acrobat Hot technology
- Electronic mail software — IBM Notes Hot technology ; Microsoft Exchange Hot technology ; Microsoft Outlook Hot technology
- Enterprise application integration software — Atlassian Bamboo Hot technology ; Extensible markup language XML Hot technology ; Microsoft SQL Server Integration Services SSIS Hot technology ; Oracle Fusion Middleware Hot technology
- Enterprise resource planning ERP software Hot technology — Microsoft Dynamics GP Hot technology ; NetSuite ERP Hot technology ; Oracle Hyperion Hot technology ; Oracle JD Edwards EnterpriseOne Hot technology
- Enterprise system management software — IBM Power Systems software
- Expert system software — Ansible software Hot technology
- File versioning software — Apache Subversion; Git Hot technology ; Version control software
- Financial analysis software — Cost estimating software; Delphi Technology; Oracle E-Business Suite Financials
- Geographic information system — ESRI ArcGIS software Hot technology ; Geographic information system GIS software Hot technology
- Graphical user interface development software — Salesforce Visualforce Hot technology
- Graphics or photo imaging software — Adobe Systems Adobe Fireworks; Adobe Systems Adobe Illustrator Hot technology ; Adobe Systems Adobe Photoshop Hot technology
- Helpdesk or call center software — Help desk software
- Human resources software — ADP Workforce Now Hot technology ; Human resource management software HRMS; Oracle Taleo Hot technology

- Industrial control software — Supervisory control and data acquisition SCADA software Hot technology
- Information retrieval or search software — LexisNexis
- Instant messaging software — Blink
- Internet directory services software — Active directory software
- Internet protocol IP multimedia subsystem software — Voice over internet protocol VoIP system software Hot technology
- Medical software — Epic Systems Hot technology ; Healthcare common procedure coding system HCPCS Hot technology ; Medical condition coding software Hot technology ; MEDITECH software Hot technology
- Metadata management software — CA Erwin Data Modeler; Informatica Corporation PowerCenter; Oracle Master Data Management MDM Suite; SAP Master Data Management MDM
- Network conferencing software — Slido interaction software
- Related occupations
- Network monitoring software — Nagios Hot technology ; Network intrusion prevention systems NIPS; Snort; Wireshark Hot technology
- Network security or virtual private network VPN management software — Virtual private networking VPN software Hot technology
- Object or component oriented development software — Advanced business application programming ABAP Hot technology ; Apache Groovy Hot technology ; Objective C Hot technology ; Scala Hot technology
- Object oriented data base management software — Hibernate ORM; Microsoft Visual FoxPro; PostgreSQL Hot technology
- Office suite software — Microsoft Office Hot technology
- Operating system software — Microsoft Windows Server Hot technology ; Oracle Solaris Hot technology ; Red Hat Enterprise Linux Hot technology ; UNIX Shell Hot technology
- Pattern design software — Diagramming software; Omni Group OmniGraffle
- Portal server software — Apache HTTP Server Hot technology

- Presentation software — Microsoft PowerPoint Hot technology
- Process mapping and design software — Flow chart software; Microsoft Visio Hot technology
- Program testing software — Functional testing software; Hewlett Packard LoadRunner; JUnit Hot technology ; Selenium Hot technology
- Project management software — Confluence Hot technology ; Microsoft Project Hot technology ; Microsoft Teams; Oracle Primavera Enterprise Project Portfolio Management Hot technology
- Requirements analysis and system architecture software — AcmeStudio; Popkin System Architect; Requirements management software; Unified modeling language UML Hot technology
- Sales and marketing software — Marketo Marketing Automation Hot technology
- Spreadsheet software — Microsoft Excel Hot technology
- Storage networking software — Amazon Simple Storage Service S3 Hot technology
- Transaction security and virus protection software — McAfee; NortonLifeLock cybersecurity software; Virus scanning software
- Transaction server software — Customer information control system CICS; Microsoft Internet Information Services (IIS); Sun Microsystems Sun ONE; Web server software
- Video conferencing software — Cisco Webex
- Video creation and editing software — YouTube Hot technology
- Web page creation and editing software — Adobe Systems Adobe Dreamweaver
- Web platform development software — Backbone.js Hot technology ; Microsoft ASP.NET Core MVC Hot technology ; React Hot technology ; Spring Framework Hot technology
- Word processing software — 3M Post-it App; Google Docs Hot technology ; Microsoft Word Hot technology

Work Activities

- Working with Computers — Using computers and computer systems (including hardware and software) to program, write software, set up functions, enter data, or process information.

- Getting Information — Observing, receiving, and otherwise obtaining information from all relevant sources.
- Processing Information — Compiling, coding, categorizing, calculating, tabulating, auditing, or verifying information or data.
- Communicating with Supervisors, Peers, or Subordinates — Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.
- Analyzing Data or Information — Identifying the underlying principles, reasons, or facts of information by breaking down information or data into separate parts.
- Making Decisions and Solving Problems — Analyzing information and evaluating results to choose the best solution and solve problems.
- Updating and Using Relevant Knowledge — Keeping up-to-date technically and applying new knowledge to your job.
- Thinking Creatively — Developing, designing, or creating new applications, ideas, relationships, systems, or products, including artistic contributions.
- Identifying Objects, Actions, and Events — Identifying information by categorizing, estimating, recognizing differences or similarities, and detecting changes in circumstances or events.
- Organizing, Planning, and Prioritizing Work — Developing specific goals and plans to prioritize, organize, and accomplish your work.
- Interpreting the Meaning of Information for Others — Translating or explaining what information means and how it can be used.
- Establishing and Maintaining Interpersonal Relationships — Developing constructive and cooperative working relationships with others, and maintaining them over time.
- Monitoring Processes, Materials, or Surroundings — Monitoring and reviewing information from materials, events, or the environment, to detect or assess problems.
- Providing Consultation and Advice to Others — Providing guidance and expert advice to management or other groups on technical, systems-, or process-related topics.
- Coordinating the Work and Activities of Others — Getting members of a group to work together to accomplish tasks.

- Judging the Qualities of Objects, Services, or People — Assessing the value, importance, or quality of things or people.
- Developing Objectives and Strategies — Establishing long-range objectives and specifying the strategies and actions to achieve them.
- Developing and Building Teams — Encouraging and building mutual trust, respect, and cooperation among team members.
- Documenting/Recording Information — Entering, transcribing, recording, storing, or maintaining information in written or electronic/magnetic form.
- Training and Teaching Others — Identifying the educational needs of others, developing formal educational or training programs or classes, and teaching or instructing others.
- Coaching and Developing Others — Identifying the developmental needs of others and coaching, mentoring, or otherwise helping others to improve their knowledge or skills.

Detailed Work Activities

- Coordinate software or hardware installation.
- Monitor computer system performance to ensure proper operation.
- Test software performance.
- Troubleshoot issues with computer applications or systems.
- Modify software programs to improve performance.
- Apply information technology to solve business or other applied problems.
- Write computer programming code.
- Collaborate with others to determine design specifications or details.
- Analyze data to identify or resolve operational problems.
- Manage information technology projects or system activities.
- Supervise information technology personnel.
- Configure computer networks.
- Develop testing routines or procedures.

- Document design or development procedures.
- Train others in computer interface or software use.
- Develop diagrams or flow charts of system operation.
- Evaluate utility of software or hardware technologies.
- Provide technical support for software maintenance or use.
- Read documents to gather technical information.
- Analyze project data to determine specifications or requirements.
- Design integrated computer systems.
- Identify information technology project resource requirements.
- Collect data about customer needs.
- Estimate time or monetary resources needed to complete projects.
- Provide recommendations to others about computer hardware.

Work Context

- Electronic Mail — 100% responded "Every day."
- Telephone — 89% responded "Every day."
- Indoors, Environmentally Controlled — 94% responded "Every day."
- Work With Work Group or Team — 62% responded "Extremely important."
- Importance of Being Exact or Accurate — 60% responded "Extremely important."
- Spend Time Sitting — 50% responded "Continually or almost continually."
- Face-to-Face Discussions — 77% responded "Every day."
- Contact With Others — 56% responded "Constant contact with others."
- Importance of Repeating Same Tasks — 66% responded "Extremely important."
- Structured versus Unstructured Work — 72% responded "Some freedom."
- Coordinate or Lead Others — 41% responded "Extremely important."
- Time Pressure — 38% responded "Once a week or more but not every day."
- Spend Time Using Your Hands to Handle, Control, or Feel Objects, Tools, or Controls — 64% responded "Continually or almost continually."

- Impact of Decisions on Co-workers or Company Results — 38% responded "Very important results."
- Spend Time Making Repetitive Motions — 39% responded "Continually or almost continually."
- Duration of Typical Work Week — 50% responded "More than 40 hours."
- Freedom to Make Decisions — 47% responded "Some freedom."
- Responsibility for Outcomes and Results — 41% responded "Very high responsibility."
- Deal With External Customers — 32% responded "Extremely important."
- Frequency of Decision Making — 35% responded "Every day."
- Level of Competition — 62% responded "Moderately competitive."
- Sounds, Noise Levels Are Distracting or Uncomfortable — 24% responded "Every day."