THE SYSTEMS ANALYST: A POST MORTEM?

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ABSTRACT

Until recently, the roles of programmer, programmer-analyst, systems analyst, and database administrator were the primary titles sought by information systems professionals. The responsibilities of these roles were well defined. There is evidence that there are serious changes in the titles and roles in the information systems profession. Recently, new roles have emerged but the most compelling changes have been in the roles that culminated in the title of systems analyst. Does such a role still exist? If not, what is the new role replacing it? It is important to answer these questions to be better able to advise students in an information systems program and to better package the curriculum content. The authors propose to survey and interview local industry and academic institutions to determine what current roles are being served by information systems professional and what skills and talents are required for these roles. This research will answer the question "Is the Systems Analyst role still alive?"

THE SYSTEMS ANALYST

"Systems analysis is the study of complete business systems, or parts of business systems and the application of the information gained from that study to the design, documentation, and implementation of new and/or improved systems. The person who performs this systems analysis, design, and implementation activity is known as the *Systems Analyst."* This quote is from one the earliest information systems texts, *Computerized Business Systems*, by Forkner & McLeod, John Wiley & Sons, 1973. Contrast this description with the following: "Systems Analyst, facilitators of the development of information systems and computer applications" from *Systems Analysis and Design Methods, 5th Edition*, by Whitten, Bentley, Dittman, McGraw-Hill, Irwin, 2001. On the surface there is little difference in the two descriptions. However, as recently as ten years ago, two jobs characterized the industry – systems analyst and programmer. Systems analysts decided what sort of technology particular situations needed while programmers provided the computer with appropriate instructions to carry out specific tasks. The subsequent growth of information technology (IT) has led to a diversification of roles. This has caused some confusion, particularly where two jobs have had similar sounding names, such as systems designer and systems analyst, or when two employers have given the same job different names. The industry is growing very quickly and new job titles appear frequently. This paper researches the system analyst position in detail and will delineate the roles and responsibilities and attendant skills and knowledge of the systems analyst then and now resulting in an elucidation of the differences between the above two definitions.

IS THE SYSTEMS ANALYST ROLE MORIBUND?

One test of the vigor of the systems analyst role is that of demand. What is the current job market and what are the future employment prospects for the systems analyst? How do these compare with past? A recent study by Smolkina (2001) indicates that employment of systems analyst is projected to rank in the top twenty in the number of new jobs and is expected to increase over one hundred per cent over the next twenty years. In that study it was revealed that employment in computer and data processing services grew by more than 900,000 jobs from 1988 to 1998. In 1998, there were about 1.6 million wage and salary jobs, and an additional 216,000 self-employed workers, making it one of the largest industries in the economy. Since the late 1980s, employment has grown most rapidly in the computer programming services and prepackaged software segments of the industry. From 1988 to 1998, about 245,000 jobs were created in programming services and another 166,000 in prepackaged software. The study further revealed that the computer and data processing services industry has grown dramatically in recent years and employment is expected to grow about 117 percent by the year 2008, making this the fastest growing industry in the U.S. economy. The majority of workers in computer and data processing services are managers, professional specialists, such as computer systems analysts, engineers, and scientists; and technicians, such as computer programmers. Together, these occupational groups accounted for 70 percent of the jobs in the industry, reflecting the emphasis on high-level

skills and creativity. These statistics (taken from the *Other Resources* shown at the end of this paper) imply that the job title "Systems Analyst" is indeed alive and in fact is thriving (at least in name). The next section will attempt to define the skills and knowledge, and the educational and experience requirements associated with the systems analyst job title.

SYSTEMS ANALYST'S ROLES AND RESPONSIBILITIES

The Forkner & McCloud (1973) text listed the responsibilities of the systems analyst as:

1. Define and analyze the problem
2. Organize for the study
3. Gather and analyze data
4. Determine requirements
5. Develop and test alternate solutions
6. Select the best solution
7. Design program test
8. Train employees
9. Cut-over to new system
10. Improve the system

In this text two other roles in information systems were identified: programmer and operator. The responsibilities of these two were quite distinct from that of a systems analyst.

The Whitten, et al (2001) text describes the systems analyst as a problem solver incorporating the following steps:

1. Identify the problem
2. Analyze and understand the problem
3. Identify solution requirements and expectations
4. Identify alternative solutions and decide a course of action
5. Design and implement the best solution
6. Evaluate the results
7. Reiterate if appropriate

In this text three other groups of information workers were identified, systems designer, systems builder, information technology vendors and consultants. The distinction between these groups is imprecise.

However, both of these lists agree with the Smolkina study which summarizes the role of the systems analyst as follows: Systems analysts are involved in analyzing and solving business, scientific, or engineering data processing problems and design new flows of information. Systems analysts tie together hardware and software to give an organization the maximum benefit from its investment in machines, personnel, and business processes. To do this, they may design entirely new systems or add a single new software application to harness more of the computer's power. They use data modeling, structured analysis, information engineering, and other methods. Systems analysts prepare charts for programmers to follow for proper coding of machines and also perform cost-benefit analyses for management to evaluate the system. They ensure that the system performs to its specifications and test it thoroughly.

As indicated in the previous section, the rapid growth of IT has impacted the roles of an IT professional from basically two job titles, systems analyst and programmer to a multiplicity of titles with inconsistencies and replication. A search for jobs with "Systems Analyst" was performed at America's Job Bank (http://www.jobsearch.org/). This site allows you to search for jobs listed at all 50 of the state government job service organizations. An initial search resulted in 2,517 matches. Many of these turned out to be duplicate listings. All jobs were listed with the agencies during the months of May and June 2001.

The search was narrowed to include all states in the region of Metropolitan State College of Denver, and a sample was taken from other parts of the country. The WEST region included Arizona, California, Colorado, Idaho, Montana, Oregon, Nevada, Utah, Washington, and Wyoming. The MIDWEST region consisted of Illinois. The SOUTH region consisted of Texas. SOUTHEAST included Florida and Georgia, and NORTHEAST consisted of Massachusetts. After elimination of obvious duplicates of job listings, 904 positions were included in this study.

An extremely wide variety of job titles including the words “Systems Analyst” was found. One hundred and seventy different titles were found for Systems Analyst positions. By far, the most common titles listed were:

- Systems Analyst
- Business Systems Analyst
- Senior Systems Analyst
- Computer Systems Analyst
- Systems Analyst/Developer/Programmer

Additional common titles included:

- Information Systems Analyst
- SAP Systems Analyst
- Telecommunication/Network Systems Analyst
- AS400 Systems Analyst
- Database/Oracle Systems Analyst
- Financial Systems Analyst

Thus, rather than clarifying the roles, these descriptions and titles make the systems analyst role even more vague. We can further compound the confusion by defining the system analyst as one who solves information systems problems. Perhaps the next section will provide some clarification of the roles by describing what the systems analyst needs to know.

WHAT DOES IT TAKE TO BECOME A SUCCESSFUL SYSTEMS ANALYST?

Continuing with the comparison of the old and the new, Forkner and McCleod (1973) list the following categories of requisite skills for a systems analyst:

1. Communication ability
2. Logical ability
3. Creativity
4. Technical Competence
5. General business knowledge

Whitten, et al, (2001) list the following:

1. Working knowledge of information technology
2. Computer programming experience and expertise
3. General business knowledge
4. Problem solving skills
5. Interpersonal communication skills
6. Flexibility and adaptability
7. Good character and strong ethics
8. System analysis and design skills

The Senior Thesis by Anna Smolkina (2001) provides a description of the systems analyst and a prescription for success:

> Computer systems analysts must enjoy precise, detailed work. An ability to organize and work methodically is important. Analytical and problem-solving abilities are needed, as well as creativity. Good oral and written communication skills are required. Continual upgrading is needed in order to remain competitive."

Smolkina goes on to describe the essential background for a systems analyst:

Knowledge:

- Computers and Electronics - Knowledge of electric circuit boards, processors, chips, and computer hardware and software, including applications and programming.
- English Language - Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
- Mathematics - Knowledge of numbers, their operations, and interrelationships including arithmetic, algebra, geometry, calculus, statistics, and their applications.
- Customer and Personal Service - Knowledge of principles and processes for providing customer and personal services including needs assessment techniques, quality service standards, alternative delivery systems, and customer satisfaction evaluation techniques.
- Communications and Media - Knowledge of media production, communication, and dissemination techniques and methods including alternative ways to inform and entertain via written, oral, and visual media.
- Telecommunications - Knowledge of transmission, broadcasting, switching, control, and operation of telecommunications systems.

Skills:

- Programming - Writing computer programs for various purposes.
- Reading Comprehension - Understanding written sentences and paragraphs in work related documents.
- Troubleshooting - Determining what is causing an operating error and deciding what to do about it.
- Testing - Conducting tests to determine whether equipment, software, or procedures are operating as expected.
- Operations Analysis - Analyzing needs and product requirements to create a design.
- Problem Identification - Identifying the nature of problems.

Abilities:

- Written Comprehension - The ability to read and understand information and ideas presented in writing.
- Mathematical Reasoning - The ability to understand and organize a problem and then to select a mathematical method or formula to solve the problem.
- Written Expression - The ability to communicate information and ideas in writing so others will understand.
- Oral Comprehension - The ability to listen to and understand information and ideas presented through spoken words and sentences.
- Deductive Reasoning - The ability to apply general rules to specific problems to come up with logical answers. It involves deciding if an answer makes sense.

There is clearly a simple mapping between any of these lists, past and present, and it is equally clear that the requirements are overwhelming. Terms like problem solving and creativity are equivocal. Programming, analysis, and design skills are virtually limitless. Which programming language? Which methodology? Which development tools?
Although this tack proves interesting, some other tactic is needed for academicians and trainers to best prepare students for the role of systems analyst. The next section will attempt to accomplish this through a detailed investigation of job advertisements for systems analysts.

WHAT DO EMPLOYERS WANT?

A more detailed search at America's Job Bank (http://www.jobsearch.org/) for specialized titles for the position of systems analyst reveals an even more disconcerting tale of the employers' expectations for the systems analyst position. A few examples include (the Appendix shows a complete list of the various job titles which include *systems analyst*):

- Computer Systems Hardware Analyst
- Systems Test Analyst
- Human Resource Information System Analyst
- Navy Computer Systems Analyst
- Investment Systems Analyst
- Lottery Systems Analyst
- Guidance and Navigation Systems Analyst
- Security Systems Analyst
- Senior Actuarial Systems Analyst
- Radar Systems Analyst

Job descriptions/requirements for the 904 jobs were examined. Two hundred thirty-nine (26%) of the positions listed either no requirements or only a list of generic skills such as:

- strong technical skills
- strong problem solving skills
- strong writing skills
- strong communication skills
- project management skills
- teamwork skills
- leadership
- familiarity with the SDLC
- troubleshooting skills

Another 80 (9%) of the positions listed highly specialized skills with industry specific software, such as in missile defense, health care applications, etc.

Of the remaining 585 positions, technical skills required/requested were noted and tallied.

Even within a specific title, the requirements were very diverse. For example, one position for "Business System Analyst" required only experience with MS Office and E-mail (and a nursing degree!). The next position listed with the same title required C, C++, Java, Visual BASIC, COBOL, Oracle, SQL Server, relational database design experience, Unix, Windows NT, TCP/IP, several internet/intranet development tools, SAP, and five years experience as a Systems Analyst. A further list of another 13 technical skills was listed as preferred.

Experience with part or all of the Microsoft Suite was the most frequently required skill (n = 123, or 21%).

Table 1 summarizes the program language skills required for systems analysts listed in the job bank.

Table 1. Programming Languages **(N = 585)**

LANGUAGE	n	%
Visual BASIC	**67**	**11%**
C/C++	**63**	**11%**
COBOL	**60**	**10%**
Java	**54**	**9%**
Programming Language [1]	**39**	**7%**
CICS	**23**	**4%**
RPG	**16**	**3%**
SAS	**13**	**2%**
Fortran	**10**	**2%**
Assembler Language	**5**	**1%**
Natural	**4**	**1%**
[1]Programming experience required, but no specific language given.		

Visual BASIC (n = 67, or 11%), C/C++ (n = 63, or 11%), COBOL (n = 60, or 10%), and Java for (n = 54, or 9%) were the most frequently required languages. Other languages included CICS (n = 23, or 4%), RPG (n = 16, or 3%), SAS (n = 13, or 2%), FORTRAN (n = 10, or 2%), Assembler (n = 5, or 1 %), and Natural (n = 4, or 1%). An additional (n = 39, or 7%) of the positions required experience in a programming language, with no preference for a particular language given.

Table 2 summarizes the database skills required for systems analysts listed in the job bank.

Table 2. Database Skills [1] (N = 585)

SKILL	n	%
Oracle	**122**	**21%**
SQL (generic)	**118**	**20%**
Database [2]	**96**	**16%**
DB2	**36**	**6%**
SQL Server	**35**	**6%**
Powerbuilder	**14**	**2%**
Sysbase	**12**	**2%**
Data Mining/ Data Warehousing	**12**	**2%**
Informix	**6**	**1%**
Delphi	**5**	**1%**
Rbase	**1**	**0%**
[1]MS Access was included with MS Office skills. **[2]General Database design/modeling skills requested.**		

Oracle experience (n = 122, or 21%) was the most frequently required, followed by general SQL experience (n = 118, or 20%), DB2 (n = 36, or 6%), SQL–Server (n = 35, or 6%), Powerbuilder (n = 14, or 2%), Sysbase (n = 12, or 2%), Informix (n = 6, or 1%), and Delphi (n = 5, or 1%). Additionally, several positions (n = 96, or 16%) required general experience in relational database design or data modeling, and a few (n = 12, or 2%) required experience with data mining and/or data warehousing.

Table 3 summarizes the operating system skills required for systems analysts listed in the job bank.

Table 3. Operating System Skills (N = 585)

SKILL	n	%
UNIX/LINUX	99	17%
Win NT	83	14%
Win 95/98/2000	36	6%
AS400/OS400	30	6%
Mainframe [1]	25	4%
JCL	22	4%
Novel	19	3%
Sun Solaris	13	2%
DOS	4	1%
MAC OS	2	<1%
[1]General experience with mainframe OS requested.		

Unix/Linux (n = 99, or 17%) was the operating systems skill most frequently required, followed by Windows NT (n = 83, or 14%), Win 95/98/2000 (n = 36, or 6%), AS400/OS400 (n = 30, or 5%), JCL (n = 22, or 4%), Novell (n = 19, or 3%), Sun Solaris (n = 13, or 2%), and DOS (n = 4, or 1%). General mainframe experience (n = 25, or 4%) was required for some positions.

Table 4 summarizes other miscellaneous skills required for systems analysts listed in the job bank.

Table 4. Other Miscellaneous Skills (N = 585)

SKILL	n	%
MS Office	123	21%
Internet/Intranet Development [1]	103	18%
Networking / Telecom [2]	62	11%
SAP	52	9%
Accounting (payroll, etc)	44	8%
Peoplesoft	19	3%
Tech Support / Help Desk	18	3%
QA/testing	18	3%
Hardware (installation / maint)	14	2%
ERP	12	2%
Lotus Notes	10	2%
[1]Includes HTML, XML, Javascript, Vbscript, Perl, Cold Fusion, MS Frontpage, etc. [2]Networking certifications were frequently requested.		

Internet/Intranet development skills (including HTML, XML, Javascript, Vbscript, Perl, Cold Fusion, MS Frontpage) were required for numerous positions (n = 103, or 18%).

Telecommunications/Networking skills were required for (n = 62, or 11%) of positions. Many of these requested or required networking certifications.

SAP was required for (n = 52, or 9%) of the positions, and Quality Assurance/testing experience was required for (n = 18, or 3%).

Technical Support/Help Desk skills were required for (n = 18 – 3%), and general hardware maintenance/installation skills for (n = 14, or 2%) of jobs.

Experience with accounting (payroll, accounts receivable, etc.) was required for several positions (n = 44, or 8%), and the accounting package Peoplesoft was required for (n = 19, or 3%) of positions.

This detailed study of employers' specific requirements confounds rather than elucidates as to the meaning of the term systems analyst. The IT industry apparently has not addressed Michael Wood's (1979) imperative in his paper entitled "Systems Analyst Title Most Abused in Industry: **Redefinition Imperative.**"

SUMMARY AND CONCLUSION

It is clear that the systems analyst is still alive and well, but what is the manifestation of this title? The title is sweeping and the roles fluctuate, contrast, and diverge, varying as to area of the country, and history, maturity, type, and size of the organization being served. There is a common thread of problem solving, written and oral communication, basic computer skills and experience, and business knowledge. However this study is not sufficiently robust and detailed to suggest a course of action as to academic curriculum development and training. An in-depth study using the parameters indicated above is mandatory.

REFERENCES

Forkner, Irvine & McLeod, Jr., Raymond (1973) *Computerized Business Systems, An Introduction to Data Processing,* John Wiley and Sons, New York, NY.

Smolkina, Anna (2001), *Exploring a Systems Analyst Job,* Unpublished Senior Thesis, CIS Department, Metropolitan State College of Denver, Denver, CO.

Whitten, Jeffrey L., Bentley, Lonnie D., Dittman, Kevin C. (2001) *Systems Analysis and Design Methods, 5th Edition,* McGraw-Hill, Irwin, New York, NY

Wood, Michael *Systems Analyst Title: Most Abused in Industry: Redefinition Imperative.* Computer World, April 30, 1979, pp. 24-26.

OTHER RESOURCES

Government:

- Occupational Employment Statistics. Bureau of Labor Statistics. Occupational Employment Statistics. Internet: http://stats.bls.gove/
- U.S. Department of Labor. Bureau of Labor Statistics. Occupational Outlook Handbook. Internet: http://stats.bls.gove/
- "The Job Market in 2000: Slowing Down as the Year Ends." Monthly Labor Review. February 2001
- "Job Creation and the Emerging Home Computer Market." Monthly Labor Review. August 1999
- "Degrees to Dollars: Earnings of College Graduates in 1998." Occupational Outlook Quarterly. Winter 2000-2001

- "The Outlook for College Graduates, 1998-2008: A Balancing Act." Occupational Outlook Quarterly. Fall 2000

Organizations:

- Institute for the Certification of Computer Professionals
  Internet: www.iccp.org

- Institute of Electrical and Electronics Engineers
  Internet: www.ieee.org

- IEEE Computer Society
  Internet: www.computer.org

  Home of Computer Magazine and the student newsletter Looking Forward. Also lists scholarships for the technically-inclined.

- Association for Computer Machinery (ACM)
  Internet: www.info.acm.org

  The oldest professional association for computer professionals. In addition to membership Information and Special Interest Groups for many areas of specialty, the ACM site contains a career section which includes personalized help via e-mail from the author of the ACM's No-Nonsense Guide to Computing Careers.

- Internet Society
  Internet: www.isoc.org

- International Webmasters Association
  Internet: www.iwanet.org

- IThinkDelaware, the State's Information Technology Career Site
  Internet: www.ithinkdelaware.com/Career4U/index.asp

- Computerwork.com: Computer Jobs & Technical Employment in the US & Canada
  Internet: www.computerwork.com

  Job listings by region, resume help, job fairs, and links to the best on-line career sites for computer professionals.

- International Programmers Guild (IPG)

  Professional association for programmers with on-line discussion groups, job and resume boards, and a good collection of links for programmers.

- America's Career InfoNet. Employability Profile. Internet: www. acinet.org

Business News:

- "America's Jobs Are Changing." *BusinessWeek Online*. 24 January 2000

- "For High-Tech Industries, Finding Workers Will Get Harder." *BusinessWeek Online Daily Briefing*. 1 July 1999

- "Putting the Tight Job Market to Work for you." *BusinessWeek Online*. 7 June 2000

- "Career Outlook, 2001." *BusinessWeek Online*. 28 December 2000
- "Working Your Degree: Business Majors." *CNN Financial Network*. 2 October 2000
- "Working Your Degree: Computer Science." *CNN Financial Network*. 21 July 2000
- "Hot Jobs for College Grads." *CNN Financial Network*. 26 May 2000

APPENDIX: SYSTEMS ANALYST JOB TITLES

AIX SYSTEMS ANALYST
ANALYST BUSINESS SYSTEMS I
ANALYST IT CLIENT SYSTEMS III
ANALYST-PROGRAMMER/WEB/SYSTEMS
ANALYST-PROJECT/INFORMATION SYSTEMS/DATABASE
ANATOMIC PATHOLOGY SYSTEMS SUPPORT ANALYST
APPLICATIONS ANALYST, BUSINESS RESOURCE SYSTEMS
APPLICATIONS SYSTEMS ANALYST
APPLICATIONS SYSTEMS ANALYST/PROGRAMMER
AS/400 SYSTEMS ANALYST
ASSOCIATE BUSINESS SYSTEMS ANALYST
ASSOCIATE INFORMATION SYSTEMS ANALYST (SPECIALIST)
AUTOMATED SYSTEMS ANALYST I
BENEFIT SYSTEMS ANALYST
BUSINESS ANALYST LOAN ORIGINATION SYSTEMS
BUSINESS SYSTEMS ANALYST
BUSINESS SYSTEMS ANALYST - PASSPORT/SAP
BUSINESS SYSTEMS ANALYST - PRODUCTION SUPPORT
BUSINESS SYSTEMS ANALYST PROGRAMMER
BUSINESS SYSTEMS ANALYST SAP MM/WM
BUSINESS SYSTEMS ANALYST SENIOR
BUSINESS SYSTEMS REQUIREMENT ANALYST
BUSINESS_SYSTEMS_ANALYST_PRODUCTION_PLANNING_SAP
C/S SYSTEMS ANALYST
C++ SW SYSTEMS ANALYST/PROGRAMMER
CDMA SYSTEMS ANALYST
CLIENT SERVER SYSTEMS ANALYST
CLINICAL INFORMATION SYSTEMS ANALYST
CLINICAL SYSTEMS ANALYST
CLINICAL SYSTEMS ANALYST - PATIENT MANAGEMENT SYSTEMS
COMPUTER INFO SYSTEMS DATA ANALYST
COMPUTER INFO SYSTEMS IT ANALYST
COMPUTER SYSTEMS ANALYST UNIX & NT IVBN281WEST
DATA ARCHITECT/ SYSTEMS ANALYST- INFORMATION DESIGN
DATABASE SYSTEMS ANALYST
DEPARTMENTAL INFORMATION SYSTEMS ANALYST
E COMMERCE: ENERGY TRADING SYSTEMS ANALYST
EAI BUSINESS/SYSTEMS ANALYST
EDI SYSTEMS ANALYST/BUS. SYS. ANA. I
EDP SYSTEMS ANALYST III CONSULTANT
EFT/CVIT SYSTEMS ANALYST
EMBEDDED C/ REAL-TIME SYSTEMS ANALYST
EXCALIBUR SYSTEMS ANALYST

FIX PROTOCOL SYSTEMS ANALYST
GEOGRAPHIC INFORMATION SYSTEMS ANALYST/DEVELOPER (SES #33)
GIS EDP SYSTEMS ANALYST CONSULTANT
GUIDANCE AND NAVIGATION SYSTEMS ANALYSTS
HRIS LEAD SYSTEMS ANALYST
HUMAN RESOURCE INFORMATION SYSTEMS ANALYST
INFORMATION SYSTEMS OPERATOR-ANALYST
INFORMATION SYSTEMS PERFORMANCE ANALYST
INTERNET SYSTEMS ANALYST
INVESTMENT SYSTEMS ANALYST
IT SYSTEMS ANALYST - MQ SERIES, DESIGN IN STRUCTUR
JDE ONEWORLD FINANCIAL SYSTEMS ANALYST
JR. INFO SYSTEMS ANALYST - NAVY ADP SUPPLY ADPWEST
LAWSON SYSTEMS ADMINISTRATOR/PROGRAMMER ANALYST
LEAD BUSINESS SYSTEMS ANALYST
LEAD NETWORK SYSTEMS ANALYST. SW LICENSING
LEAD SYSTEMS ANALYST
LEAD WEB APPLICATION DEVELOPMENT SYSTEMS ANALYST
LOTTERY SYSTEMS ANALYST I
MAINFRAME SYSTEMS ANALYST
MAINFRAME SYSTEMS ANALYST - JAVA
MGR, SYSTEMS ANALYST SERVICES
MIDDLEWARE SYSTEMS ANALYST
MULTI-MEDIA SYSTEMS ANALYST (INSTRUCTIONAL DESIGNER)
NAVY COMPUTER SYSTEMS ANALYST UNIX NT SYBASE
OO SYSTEMS ANALYST
OPERATIONAL SYSTEMS SUPPORT ANALYST
ORACLE BUSINESS SYSTEMS ANALYST
ORACLE FINANCIALS SR. BUSINESS SYSTEMS ANALYST
ORACLE INTEGRATION SYSTEMS ANALYST
PARTS_INVENTORY_SYSTEMS_ANALYST
PAYROLL SYSTEMS ANALYST
PAYROLL SYSTEMS CONVERSION ANALYST
PEOPLESOFT SYSTEMS ANALYST
PHARMACEUTICAL SYSTEMS ANALYST
POWER SYSTEMS ANALYST/ENGINEER MID LEVEL TO SR. LEVEL
PRODUCT EVALUATION BUSINESS SYSTEMS ANALYST
PROGAMMER SYSTEMS ANALYST-PLANNING AND SECURITY, SCRIPTING
PROGRAMMER/SYSTEMS ANALYST
PROJECT ANALYST/INFORMATION SYSTEMS
QA/SYSTEMS ANALYST, DERIVATIVES
RADAR SYSTEMS ANALYST (ARC01571-PA)
RBMXB 872.SYSTEMS ANALYST OIL PIPELINE
RETAIL SYSTEMS ANALYST
RF_SYSTEMS_ANALYST

SAP FINANCIAL SYSTEMS ANALYST SENIOR
SAP SYSTEMS ANALYST
SAP_SR_BUSINESS_SYSTEMS_ANALYST
SAS BUSINESS SYSTEMS ANALYST
SAS, JCL, PL/1, UNIX SYSTEMS ANALYST
SAS/UNIX PL1 SYSTEMS ANALYST
SECURITY SYSTEMS ANALYST/TECHNICIAN
SENIOR ANALYST - INFORMATION SYSTEMS
SENIOR BUSINESS SYSTEMS ANALYST
SENIOR CONSULTANT BUSINESS SYSTEMS ANALYST DESIGN
SENIOR INFORMATICA SYSTEMS ANALYST
SENIOR PROGRAMMER ANALYST - MERCHANDISE AND RETAIL SYSTEMS
SENIOR PROGRAMMER ANALYST POWERBUILDERAPPLICATION SYSTEMS
SENIOR SYSTEMS & NETWORK ANALYST
SENIOR SYSTEMS ANALYST
SENIOR SYSTEMS ANALYST - TRANSPORTATION SYSTEMS
SENIOR SYSTEMS ANALYST WAREHOUSE SYSTEMS
SENIOR SYSTEMS SECURITY ANALYST
SIEBEL SYSTEMS ANALYST/DEVELOPER
SR ACTUARIAL SYSTEMS ANALYST
SR ANALYST - INFO SYSTEMS
SR IT SYSTEMS ANALYST
SR PROGRAMMER ANALYST - FULFILLMENT AND LOGISTICS SYSTEMS
SR. AIX SYSTEMS ANALYST
SR. BUSINESS SYSTEMS ANALYST IMPORT & EXPORT
SR. OO/WEB SYSTEMS ANALYST - CONSULTANT
SR. PROGRAMMER ANALYST DATA WAREHOUSE SYSTEMS
SR. SOFTWARE SYSTEMS ANALYST - PDY0020
SR. SYSTEMS ANALYST COOLGEN
SR. SYSTEMS ANALYST DIST/MFG ERP
SR. SYSTEMS ANALYST PEOPLESOFT FINANCIALS
SR. SYSTEMS DATA ANALYST
SR. SYSTEMS INTERFACE ANALYST - SALES
SR. TECHNICAL BUSINESS SYSTEMS ANALYST (TESTING)
SR. TELECOMMUNICATION SYSTEMS ANALYST
SR_PROGRAMMER_ANALYST_CORPORATE_SYSTEMS_REPORTIN
STAFF BUSINESS SYSTEMS ANALYST
STAFFING SYSTEMS ANALYST
SYSTEMS ANALYST
SYSTEMS ANALYST - AP/PO/GL
SYSTEMS ANALYST - COGNOS, IMPROMPTU, POWERPLAY
SYSTEMS ANALYST - FINANCE AND HR SYSTEMS
SYSTEMS ANALYST - NEW ORDER MANAGEMENT
SYSTEMS ANALYST - PROJECTS
SYSTEMS ANALYST / IMPLEMENTATION ENGINEER I

SYSTEMS ANALYST I
SYSTEMS ANALYST I-CLINICAL
SYSTEMS ANALYST II
SYSTEMS ANALYST III
SYSTEMS ANALYST III
SYSTEMS ANALYST IV
SYSTEMS ANALYST PIMS
SYSTEMS ANALYST V
SYSTEMS ANALYST WITH LINC
SYSTEMS ANALYST WITH TELEPHONY EXPERIENCE
SYSTEMS ANALYST, CCI
SYSTEMS ANALYST, CRIMINAL JUSTICE BACKGROUND
SYSTEMS ANALYST, SYSTEMS ANALYSIS
SYSTEMS ANALYST/ DESIGNER/ ARCHITECT
SYSTEMS ANALYST/CONFIGURATOR (FI/CO)
SYSTEMS ANALYST/PROJECT MANAGER, IT
SYSTEMS ANALYST/TECHNICAL LEAD
SYSTEMS ANALYSTS, SENIOR (QCT)
SYSTEMS ENGINEER PROGRAMMER/ANALYST
SYSTEMS ENGINEER/ANALYST
SYSTEMS ENGINEERING ANALYST II
SYSTEMS FINANCIAL BUSINESS ANALYST
SYSTEMS IVR ANALYST
SYSTEMS PERFORMANCE ANALYST
SYSTEMS PROGRAMMER/ANALYSTS TEST TEAM
SYSTEMS REQUIREMENTS ANALYST
SYSTEMS SECURITY ANALYST
SYSTEMS SOFTWARE ANALYST
SYSTEMS SUPPORT ANALYST
SYSTEMS TEST ANALYST
SYSTEMS/PROG. ANALYST NOTES
SYSTEMS_ANALYST_DEVELOPER
SYSTEMS_ANALYST_IBM_MVS_MAINFRAME_BRN_0426013454
TANDEM SYSTEMS ANALYST
WAREHOUSE MANAGEMENT SYSTEMS ANALYST
WEB SYSTEMS ANALYST
WIRELESS SYSTEMS ENGINEER / ANALYST