MARK V. RAY

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PROFESSIONAL SUMMARY

Over 18 years of Information Technology experience with expertise in I.T. Business Analysis/Business Intelligence and Application Programming and testing on the IBM Mainframe platform and Client/Server platform and Business/Technical Requirements Gathering. In addition, possess extensive experience in CMS (Center for Medicaid and Medicare Services) systems with emphasis on Healthcare Claims processing and adjudication on MMIS (Medicaid Management Information Systems) with exposure to the future MITA (Medicaid Information Technology Architecture) as outlined by CMS. Experience with ICD 9 to ICD 10 and EDI 4010 to EDI 5010 conversions. Also possess experience with the design of healthcare based mobile apps and wireframes, ETL (Extract Transform and Load) processes which include data mapping and pre/post converted data validation, requirements gathering and analysis, process improvement, Microsoft SharePoint, **TQM**, and **ISO 9000** as well as excellent documentation, presentation, interpersonal, and project management skills. Also possess 9 years of Industrial Engineering experience with expertise in the Aerospace manufacturing environment of Military Cargo Airplanes with emphasis on process layouts and manufacturing improvements using **Six Sigma** Techniques**.**

EDUCATION

MMIS Certification – Jefferson City, Missouri – S2Tech
Certified Medicaid Management Information Systems Professional   2009

CHUBB PROFESSIONAL RESOURCES, Herndon, Virginia
Certified Mainframe Computer Programmer   1995
Course work in all areas of Mainframe programming languages from development to production. Extensive knowledge of requirements analysis, process improvement techniques and methodologies, and various aspects of software testing and integration.

UNIVERSITY OF TENNESSEE, Knoxville, Tennessee
Bachelor of Science in Industrial Engineering   1986

EXPERIENCE

Anthem Blue Cross Blue Shield, Atlanta, GA   Sept 2015 – December 2015
 Sr. Business Systems Analyst
(Short term project to support The Reimagine Mobile App December Grand Release)

Business Systems Analyst in support of the design of the Anthem Mobile App (Reimagine project). This is an Agile environment

- Identify and develop user stories in JIRA/Confluence for requirements on the new release of the Mobile App
- Review current state and future state wireframes with developers to ensure we are designing the correct Mobile App pages.
- Work with developers to identify fields of data that will be sent from the Aggregation Layer API to the User Interface
- Work on functionality dealing with mobile app registration, page labels, Forgot Username and Password, Provider Finder, and Pharmacy Finder.
- Ensure future state process maps, system diagrams, and business rules are documented for the mobile app

- Ensure user stories (with Test Scenarios)are documented and establish traceability, according to the approach defined by the Mobile App team
- Provide facilitation and resolution support through Scrum Grooming sessions.

Anthem Blue Cross Blue Shield, Virginia Beach, VA   Oct 2014 – June 2015

Migration Architect/Sr. Technical Business Analyst (Remote/Telecommute)

Migration Architect in support of the Claims Workgroup and Pharmacy workgroup on the California Medicaid Migration project from a Legacy system to FACETS

- Identify and gather all current state documentation in preparation for Claims and Pharmacy workgroup's Requirements documentation
- Ensure current state process maps and system diagrams, complete with inputs and outputs, are documented in preparation for Claims and Pharmacy workgroup's Requirements documentation.
- Ensure future state process maps and system diagrams are documented, to include inputs and outputs, in support of the documented Requirements
- Ensure comprehensive Requirements (with Test Scenarios)are documented and establish traceability, according to the approach defined by the Migration Program
- Provide facilitation and resolution support through Requirements Approval.
- Provide Quality Assurance oversight to ensure teams establish traceability across all Requirements.
- Collaborate with Project Manager, Business Lead/SMEs and IT Lead/SMEs to understand and resolve any gaps in fulfilling Migration Requirement needs.
- Escalate as appropriate, lingering and/or critical barriers to the timely completion of Requirements, to include Test Case documentation

Magellan Health Services, St. Louis, MO   May 2014 – Sept 2014

Sr. Technical Business/Data Analyst
- Sr. Technical Business Information Analyst in support of Business Intelligence Data Analysis for Behavioral Health and National Provider Profiling
- Performed SQL development and testing for data analysis of claims data residing in the Data Warehouse. The tool was Rapid SQL with an Oracle and Cognos interface.
- Provided data mapping documentation, business rules, and transformation rules to the development team for software design.
- Performed various claims data analysis for multiple level of care codes for data extracts to be used in SAS calculations
- Work with Development team to clarify requirements for Informatica ETL processes
- Attend multi functional team meetings to discuss requirements and address any problems with the business groups or development teams.
- Work with business groups to define and implement new processes in the Provider Profiling analysis.

Medical Transportation Management, Lake St. Louis, MO   January 2014 – May 2014

Sr. Technical Business Analyst

- Sr. Technical Business Information Analyst in support of the Ambulance transportation management
- Performed EDI X12 mapping of the 837P and 834 EDI transactions. The tool used was Liason Delta mapping software.
- Performed various claims data analysis and provided solutions for EDI claims that were rejected using 997 and 999 error reports
- Work with Development team to clarify requirements.
- Attend multi functional team meetings to discuss requirements and address any problems with the business groups or development teams.
- Work with business groups to define and implement new edits in the adjudication process.

New Hampshire DHHS, Concord, NH   September 2012 – July 2013

Sr. Technical Business Analyst

- Sr. Technical Business Information Analyst in support of the New Hampshire Medicaid (MMIS) conversion project in an Agile Environment
- Performed EDI X12 testing on the 837P and 837D for the 5010 conversion. The testing tool was Edifecs Ramp Management
- Performed E2E (End to End) testing for Provider Enrollment, Claim Adjudication, and Member eligibility.
- Performed Parallel testing between the old legacy system and the new web based enterprise system to assure that claims are adjudicated correctly.
- Performed various claims data analysis
- Work with Development team to clarify user stories/requirements
- Attended Daily Scrum Meeting to discuss sprint goals and progress
- Attend multi functional team meetings to discuss user stories/requirements and address any problems with the business groups or development teams.
- Determined if changes needed to be made to Business Process Management plans to improve overall testing strategies and work around plans.
- Work with business groups to define and implement new edits in the adjudication process.

CVS/Caremark, Dallas, TX   August 2011 – July 2012

Sr. Technical Business Analyst/Project Management

- Sr. Technical Business Information Analyst in support of the Aetna pharmacy conversion project
- Environment is Mainframe and .NET technologies for RxClaim system
- Perform business and technical requirements development and management for pharmacy claims adjudication system functionality, and data subsystems pertaining to Aetna's Pharmacy conversion to RxClaim system .
- Created Business Requirements and Functional Requirements Documentation.
- Work with Development team to clarify requirements before development begins
- Attend multi functional team meetings to discuss requirements and address any problems with the business groups or development teams.
- Worked within the JAD methodology.
- Resolved issues with Medical Drug Rebates and calculations

- Work with business groups to define and implement new edits in the adjudication process.

CIGNA Government Services, Nashville, TN   October 2010 – August 2011

Sr. Technical Business Analyst
- Sr. Technical Business Information Analyst in support of the Business Excellence team for a variety of projects that are associated with Medicare and CMS
- Environment is Mainframe and dot.net technologies
- Performed business and technical requirements development and management for system, functionality, and data subsystems pertaining to the implementation of a new web portal for Durable Medical Equipment (DME) for the MyCGS DME Web Portal.
- Worked with the development team and business users to customize the screens for the web portal and insure all the necessary information and links to other information were on the screen.
- Worked with the requirements to create the screens for member and provider registration on the web portal.
- Worked on the requirements to create log in screens on the web portal
- Designed test cases and ensured that the test cases fully document and test all aspects of the required subsystem functionality specifically relating to the DME Web Portal.
- Acts as the liaison between the business customer and project team for requirements definition and UAT planning for the web portal
- Determined if changes needed to be made to Business Process Management plans to improve overall testing strategies and work around plans.
- Work with cross functional groups to evaluate processes being used in the Business Management and made recommendations for improvement
- Developed process and procedures for the "Work at Home" initiative.
- Developed requirements and test cases for various claims processing/editing enhancements
- Manage Solution Scope and Requirements
- Worked with CMS personnel to discuss requirements for the web portal
- Participate in management of trading partners to gather requirements on all processes and procedures in the operation of processing medicare claims and equipment.
- Adhere to all HIPAA rules and regulations regarding the protection of personal health information

Molina Healthcare Corporation, Augusta, ME   Sept 2009 –Sept 2010

Sr. Business Information Analyst/Project Management – Telecommute position
- Sr. Business Information Analyst in support of the ETL and Data conversion team for The Maine Medicaid Management Information System (MMIS)
- Environment is QNXT, SQL Server
- Worked directly with the State of Maine's Medicaid personnel and their subcontractors to complete a total data conversion and ETL (Extract, Transform, and Load) from the State of Maine's database system to Unisys's database system for data in the claims, member, provider, prior authorization, and eligibility subsystems. These ETL processes consisted of various data mappings and final validation to insure the pre-converted data matches the post-converted data and that all transformation business rules were followed.
- Worked on implementation of the PUBS subsystem where we create, test, and run multiple interfaces to exchange data to the State of Maine Medicaid partners, other State run Agencies, and all other trading partners not associated with the State.
- Worked on requirements for data records residing in the Data Warehouse
- Developed requirements for enhancements to the claim processing and adjudication process and claim

payment process

- Performed business and technical requirements development and management for system, functionality, and data subsystems for all projects assigned to me
- Assisted in the development of crosswalks between provider id and NPI (National Provider ID)
- Worked with other company personnel to review and implement RFP and DSD requirements from the State of Maine.
- Performed research for EDI 4010 to EDI 5010 conversions to identify additional required and optional fields on EDI X12 transactions. Used WPC (Washington Publishing Company) Companion and Installation guides as the source for information
- Worked with developers to identify programs and fields that will need field length and definition changes for the ICD-9 to ICD 10 conversion and became familiar with the new ICD-10 format.
- Performed Transformation Rules Analysis for data residing on the State of Maine's database
- Worked with State personnel to perform data mapping from the State's file formats to Unisys file formats.
- Participated in Local and Standard Procedure code conversions and claims conversions
- Designed test cases and ensured that the test cases fully document and test all aspects of the required subsystem functionality specifically claims adjudication and Maine Partners data exchange
- Updated all system documentation to reflect changes to all MMIS subsytems
- Collected data for numerous assignments using SQL queries.
- Provided timely status and project updates to project management and others as required.
- Coordinated and conducted meetings with State Medicaid staff, programmers, and project managers to discuss and develop technical and business solutions for all tasks where problems and disagreements arise.
- Provide task estimates, develop task schedules, and meet defined task schedules
- Provided project management and direction for all work assigned to me.
- Adhere to all HIPAA rules and regulations regarding the protection of personal health information.

Infocrossing Healthcare Services, Jefferson City, MO   April 2008- August 2009
  Sr. Business Information Analyst/Project Manager
- Sr. Business Information Analyst in support of The Missouri Medicaid Management Information System (MMIS)
- Environment was a COBOL, CICS, DB2, VSAM
- Worked directly with the State of Missouri's Medicaid staff to discuss system requirements based on State Task Requests (STRs). These STRs covered Claims Adjudication, Providers, Recipients, Managed Care Organizations (MCOs), Prior Authorization, Claim Payment cycles, Third Party Liability (TPL), Pharmacy, Management and Administrative Reporting (MAR), Surveillance and Utilization Review (SUR), and other MMIS subsystems. I was responsible for the project management of each STR thru its System Development Life Cycle (SDLC) that was assigned to me.
- Worked with developers on a conversion ETL project where I provided data mapping and validation to insure the data was converted and followed all transformation business rules from a VSAM file structure to a DB2 database
- Developed all Business Requirements Documents for STRs that were assigned to me.
- Assisted in the development of crosswalks between provider id and NPI (National Provider ID)
- Worked with the developers to developed, test, and run multiple interfaces to exchange data to the State of Missouri Medicaid partners, other State run Agencies, and all other trading partners not associated with the State.
- Served as a liaison to the Programming team to discuss all requirements and analyses for STRs and provided documentation for the Technical team as needed so they could develop a Functional Design and begin the process of programming and unit testing all necessary requirements requested by business users.
- Designed test cases and ensured that the test cases fully document and test all aspects of the required subsystem functionality;

- Changed and updated data and report outputs that resided on Filenet P8 platform COLD on Demand (Computer Output to Laser Disc) system and other imaging systems.
- Worked with developers on X12 EDI transactions to for 4010 changes using WPC (Washington Publishing company) Companion and Installation guides to ensure HIPAA compliance.
- Updated all system documentation to reflect changes to all MMIS subsytems
- Collected data for numerous assignments using SQL queries.
- Used Clear Quest to track problem tickets.
- Resolved issues with Medical Drug Rebates
- Resolved issues with Share of Cost and Spenddown
- Provided timely status and project updates to project management and others as required.
- Coordinated and conducted meetings with State Medicaid staff, programmers, and project managers to discuss and develop technical and business solutions for all STRs where problems and disagreements arise.
- Determined if changes needed to be made to Business Process Management plans to improve overall testing strategies and work around plans.
- Work with cross functional groups to evaluate processes being used in the Business Management and made recommendations for improvement
- Provide task estimates, develop task schedules, and meet defined task schedules
- Provided project management and direction for all work assigned to me.
- Adhere to all HIPAA rules and regulations regarding the protection of personal health information

H.I.P-USA/Cross-USA, *Eveleth, Minnesota*   June 2006- Mar 2008
Assistant Lead Sr. Programmer Analyst / Sr. Business Analyst
- Served as a Sr. Programmer Analyst/ Sr. Business Analyst in support of the Claims Processing and Adjudication team for Health Insurance Plan of New York.
- As a member of the Claims team, I developed and changed Cobol programs in a COBOL/CICS/VSAM environment to process, create, and edit, diagnosis codes, procedure codes, HIPAA codes, claim types, provider types, and other codes as well as claim item pricing and duplication to determine if claims were to be paid/denied/pended for review and processed. These health care claims covered over 500,000 recipients in the New York City area
- Translated requirements into highly specified project briefs.
- Develop process performance metrics
- Conducted unit, system, acceptance, and regression testing for all changes made to claims processing Cobol programs and CICS on line processing including all map definitions.
- Designed test cases and ensured that the test cases fully document and test all aspects of the required subsystem functionality;
- Provide task estimates, develop task schedules, and meet defined task schedules.
- Responsible for moving changed Cobol programs from a test environment to a production environment using Endeavor, Librarian, or similar Change Management Software.
- Document existing and proposed business processes utilizing process modeling
- Provided timely status and project updates to project management and others as required.
- Maintained VSAM file structures using IDCAMS to include setting of Primary/Alternate file keys for KSDS file structures.
- Worked with Electronic Health Records (EHR) for city employees using HL7 standards
- Worked with programs associated with Recipient, Provider, Prior Authorizations and Medicare subsystems
- Coordinated and conducted Cobol Programs deployment and installation tests and validation with other Development and Production programmers.
- Created flow charts using Visio or Microsoft Word Utilities
- Used Expeditor to test and debug file/syntax errors in individual Cobol/CICS Programs.

- Adhere to all HIPAA rules and regulations regarding the protection of personal health information

Lowe's Corporation, Wilkesboro, NC   July 2004 –   Mar 2006
Sr. Programmer/ Business Analyst
- Serve as a Sr. Programmer/Business Analyst in support of the Corporate HR Payroll Maintenance Team
- Duties include working requests from users to fix problems with the system. The programming environment is COBOL/CICS/DB2/SQL/PeopleSoft
- Served as the main liaison for my Programming team to HR End users so that all requirements could be analyzed and documented for the Technical team which could begin programming and testing all necessary requirements requested by users
- Coordinated meetings with users to discuss requirements for work requests.
- Coordinated meetings/discussions with different Human Resources departments to ascertain and document current Human Resource Processes, deployment and installation requirements for the Payroll system.
- Document existing and proposed business processes utilizing process modeling
- Coordinated and conducted Cobol Program scope definitions, testing and validation processes, code walkthroughs, and moving programs into a production environment using Endeavor
- Conducted unit, system, acceptance, and regression testing for all changes made to payroll processing Cobol programs.
- Responsible for making JCL changes to production jobs where file/program requirements changed.
- Made data analysis and performed data mining using Teredata SQL Assistant and QMF.
- Performed other queries using SQL to view data with users and to copy sample data for meetings.
- Used SQL stored procedures from Teredata SQL assistant to retrieve data.
- Performed Data Warehousing Analysis for old data to be stored on a separate server for queries and reporting.
Documentation, Technical Writing, and Presentation Responsibilities:
   Responsible for creating Documentation to explain the process flow of my assigned areas of Payroll batch jobs. This included creating Viso Flow charts as well as utilizing company standard templates. Also created requirements documentation to use as system requirements were discussed and requested by business end users.   Made and supported various presentations to users using Microsoft Power Point and Visio flowcharts to present and discuss technical requirements for the Payroll system

New York State Department of Taxation and Finance, Albany, NY   Dec. 2003 – July.2004
Sr. Business Analyst
- Served as a Sr. Business Analyst in support of the Corporate and Individual Taxation Process
- Served as a member of the Business Rules Analysis Team where I developed the computational equations and criteria for computing corporate and individual taxes which are to be coded into the new COBOL programs for the new system. The state of New York is developing an entire new system called the e-MPIRE system (GUI front end with the mainframe processing in the background).
- Met with State Taxation personnel to ascertain system and process requirements and discuss feasibility of changes as well as timetables to implement changes into production
- Coordinated discussions with Audit, Work Flow, Returns Processing, and Administrative teams to ascertain and document current process, deployment, and installation requirements for the Taxation system.
- Coordinated and conducted Cobol Programs deployment and installation tests and validation with other Development and Production programmers.
- Made data analysis and performed data mining using SQL and SPUFI.
- Created flow charts using Visio or Microsoft Word Utilities
- Made and supported various presentations to the users and attended face to face meetings as assigned to discuss requirements.
Documentation, Technical Writing, and Presentation Responsibilities:
   Created requirements documentation to use as system requirements and business rules were discussed and requested by business end users and other taxation teams. Also was responsible for

createing flow charts using Visio or Microsoft Word Utilities to show the flow of the business rules on a New York Tax form.

ACS State Healthcare, Ridgeland, Mississippi   July 2000- Sept. 2003
Sr. Programmer Analyst / Sr. Business Analyst
- Served as a Sr. Programmer Analyst/ Sr. Business Analyst in support of the Claims Processing and Adjudication team for the Medicaid Management Information System (MMIS) of the State of Mississippi.
- As a member of the Claims team, I developed and changed Cobol programs in a COBOL/CICS/VSAM/DB2 environment to process, create, and edit, diagnosis codes, procedure codes, HIPAA codes, claim types, provider types, and other codes as well as claim item pricing and duplication to determine if claims were to be paid/denied/pended for review and processed. Also worked with the claim payment process. These Medicaid claims covered over 500,000 Medicaid recipients.
- Worked on various ETL projects to convert data from EDS formats to ACS formats and performed data validation processes to verify that all transformation rules were followed.
- Translated requirements into highly specified project briefs.
- Responsible for testing and running multiple interfaces to exchange data to the State of Mississippi Medicaid partners, other State run Agencies, and all other trading partners not associated with the State.
- Develop process performance metrics
- Conducted unit, system, acceptance, and regression testing for all changes made to claims processing Cobol programs.
- Designed test cases and ensured that the test cases fully document and test all aspects of the required subsystem functionality;
- Provide task estimates, develop task schedules, and meet defined task schedules.
- Responsible for moving changed Cobol programs from a test environment to a production environment using Endeavor, Librarian, or similar Change Management Software.
- Met with State Medicaid personnel to ascertain system and process requirements and discuss feasibility of changes as well as timetables to implement changes into production.
- Document existing and proposed business processes utilizing process modeling
- Write Requests for Proposals, (RFPs).
- Responsible for making JCL changes to production jobs where file/program requirements changed.
- Coordinated discussions with Development, Production, and Administrative teams to ascertain and document current process, deployment, and installation requirements for the MMIS system.
- Worked closely with developers and a variety of end users to ensure technical compatibility and user satisfaction.
- Provided timely status and project updates to project management and others as required.
- Created and implemented FTP deployment procedures for reporting systems to produce Medicaid reports used by application developers as well as management, administrative personnel, and State Medicaid personnel to determine process integrity and accuracy.
- Managed changes to file layouts and data elements to create new data elements, increase, decrease, or eliminate data lengths of existing data elements and data types as Cobol program requirements changed. Ensured that files/data changes being passed from processing programs were reflected in file/data changes in the receiving programs.
- Maintained VSAM file structures using IDCAMS to include setting of Primary/Alternate file keys for KSDS file structures.
- Worked with programs associated with Recipient, Provider, MARS, and SURS subsystems
- Coordinated and conducted Cobol Programs deployment and installation tests and validation with other Development and Production programmers.
- Project lead for the implementation and deployment of Claim check software incorporated into the MMIS system.
- Negotiated various project concerns with outside vendors and suppliers.
- Made data analysis using Business Objects.
- Created flow charts using Visio or Microsoft Word Utilities

- Used Smartest and Expeditor to test and debug file/syntax errors in individual Cobol Programs.
- Created and implemented the Model Office System for Quality Assurance testing and Validation.
- Created various tracking documents and process documentation for all projects to be brought under Claims processing control using a database created in Microsoft Access
- Attended HIPAA training sessions in regards to Medicaid coverage and IT office procedures
- Adhere to all HIPAA rules and regulations regarding the protection of personal health information
- Provided 24/7 on-call support to monitor/fix problems encountered with the nightly batch cycles
- Performed other queries using SQL to view data with users and to copy sample data for meetings.
- Used SQL stored procedures in the forms of Cobol copy books to use as embedded SQL calls within cobol programs.
- Performed Data Warehousing Analysis for old data to be stored on a separate servers for queries and reporting.

SAKS, Inc. Jackson, Mississippi   March 1995- July 2000
Programmer/Analyst
- Programmer Analyst in support of the Corporate Payroll processing team
- As a member of the Payroll team, coded programs in Cobol/CICS/VSAM/DB2/SQL/GEAC and Information Expert to process payroll for 150,000 employees in 30 states.
- Performed development in GEAC E-series payroll software to support all payroll functions
- Responsible for the planning, tracking, and updating of all software and programs required to support State quarterly unemployment tax reporting and Federal W-2 reporting
- Served as Lead for developing and maintaining programs that compute the Company's gross earnings on a weekly basis.
- Served as lead for developing and maintaining programs that produce the stock purchase options for employees enrolled in the Company stock program.
- Served as lead for developing and maintaining programs that compute the Work Opportunity Tax Credits provided by the Federal Government that gives the company tax breaks for training employees from low income backgrounds.
- Provide 24/7 on-call support for the nightly batch processes.
- Used Expeditor and Animator to test and debug file/syntax errors in individual programs.
- Provided Quality Assurance Testing and Validation for all new development assigned to my work modules
- Performed System Analysis, Requirement Analysis, Integration, and testing activities in preparation for System Acceptability testing for various projects
- Coordinated and developed documentation templates to be used in accordance with Company Procedures to document all process flows
- Made and supported various presentations and attended meetings as assigned
- Performed other queries using SQL to view data with users and to copy sample data for meetings.
- Performed Data Warehousing Analysis for old data to be stored on a separate server for queries and reporting.

Lockheed Aeronautical Systems Marietta, Ga.   1986 - 1994
Manufacturing Systems Engineer
- Worked with I/S Department to design end user screens for Engineers working in the Manufacturing area to track parts, problem tags, and work sequences
- Performed feasibility studies and evaluated system requirements
- Performed studies to improve production facilities and manufacturing equipment layouts
- Performed systems analysis to determine the most efficient sequence of work flow operations using Six Sigma techniques.
- Participated in all phases of the engineering and manufacturing process to solve any problems that arise with the assembly of the C-130 Military Cargo Aircraft

**ADDITIONAL
TECHNICAL SKILLS**

CERTIFIED TAX PREPARER FOR JACKSON HEWITT AND LIBERTY TAXES
TAX SOFTWARE: Profiler, Taxwise, Drake

HARDWARE: IBM 3090, 3270 43XX, PC and Compatibles

SOFTWARE: MVS/ESA, VW/COBOL 2, COBOL 2 Debugging, OS/JCL, Claim Check, GEAC, PeopleSoft (familiarity), DB2/SQL, SQL Server 2005, SQL Server Management Studio, Microsoft SharePoint, Filenet COLD (Computer Output to Laser Disc) , HL7 Standards, IBM DB2 Content Manager On Demand Version 1.0.3, **FileNet P8** Version 4.0 OMNI STATION, IN-SYNC, REXX, Business Objects, Teradata SQL Assistant, QMF, Smart Test, Visual Basic 6.0, Visual Studio, Information Expert (4GL), IBM Utilities, Panvalet, Change Control, Visio, TSO/ISPF/PDF, ROSCOE, VSAM, Microfocus COBOL 2 Workbench, CICS/ESA, Microfocus CICS, DB2/SQL, Eztrieve, Spufi, Sybase, IMS DL/I, Endeavor, Librarian, File-Aid, ZEKE/ZEBB, CA-7 Scheduler, EXTRA!, TOPR, NetScape, MS-DOS, Windows XP, Windows 2000, Windows 7, Windows 8, , Novell Groupwise, Microsoft Access, Word, Office, Project, Excel, Outlook,Exchange, Lotus123, Lotus CC:Mail, Internet, Animator, Expeditor, **Project Life Cycle Methodology**