Larry Klug – Technology Leader

9805 Batesville Drive, Raleigh, NC 27617 • (919) 280-5550 • larry@larryklug.com

As a passionate team leader and application development expert, I aim to guide teams through all aspects of the software development and engineering process.

Professional Experience

Principal Engineer
Mosquito Victory, LLC – Clinton, NY (Working Remote)
August 2023 – Present

As the primary technical resource, I have been given carte blanche to completely overhaul the software platform used to operate an independent mosquito control business.

Notable Projects:
- Upgraded the PHP version from v5.6 to v7.4 (prod) and v8.3 (dev).
- Switched to a mobile first design/development approach.
- Introduced Bootstrap to replace legacy XHTML page layout.
- Introduced Twig templates to replace PHP template framework.
- Added pre-season and post-season marketing campaign automation.
- Switched telephony providers from Bandwidth to Twilio.
- Added back-office employee email sharing workflows using HelpScout.
- Added inbound customer email processing using MailGun.
- Added OpenAI features to detect customer cancellations, re-schedules or re-spray requests.
- Added weather API integrations to report local wind speed using WeatherUnderground and OpenWeather.
- Added address verification API to validate customer addresses using yAddress.
- Created customer communications center to manage all in/outbound interactions via email, text message, telephone and voicemail with assignments based on employee follow-up skills.
- Added processing of customer phone calls and voice messages using RingCentral.
- Adjusted system to utilize accrual-based accounting methodology.
- Added photo capture of check payments to accounting workflow.
- Vastly simplified customer contract signature workflows and user experience.

    Stack: PHP, Java, MySql/MariaDB

Senior Partner
Captrest, LLC – Clinton, NY (Working Remote)
October 2017 – August 2023

Returned to leadership role in the software consulting company that took over operations of the business I founded in 2008. Business focus primarily leverages a multi-tenant service business operations platform for use in a wide variety of home service businesses and franchise organizations.

Notable Projects:
- **Maintenance and Enhancements to a Franchise Mosquito Control Management System**
  - Oversaw the growth to well over 400 individual franchise locations.
  - Created extensive API to allow ProNexis to provide unified call center duties.

- Added integration with merchant account providers GoEmerchant, Stripe and CardPointe.
- Added Internationalization in order to service customers in Canada and Puerto Rico.
- Migrated hosting from Rackspace to Amazon Web Services.
- Added ability to process inbound text messages.
- Added distributed document storage repository using Rackspace Cloud Files and Amazon S3.
- Added provisioning of franchise location telephone numbers using Bandwidth.
- Added shipping API integration using Fedex.
- Added alternative to Google Maps using OpenStreetMaps.
- Added Covid-19 tracking to allow impacted customers to qualify for discount.
- Added integrations with various lead generation partner APIs (Customers For You, Via, Integrated Digital Strategies).
- Added PHP service workers to process queued tasks such as:
  - Merchant account transaction processing.
  - Delivery of emails and text messages.
  - Scheduling of blast marketing campaigns and tracking results with CakeMail.
  - Generation of PDF invoices.
  - Delivery of scheduled or long-running ad-hoc reports.
- Added throttling to service workers to prevent API rate limiting.
- Added drip marketing campaign processing and tracking.
- Added blast text message marketing scheduling and tracking results.
- Added customer satisfaction feedback solicitation and tracking workflows.
- Added Google Reviews solicitation and tracking workflows.
- Introduced service technician portraits to enhance customers emails.

Stack: PHP, Java, MySql/MariaDB, RabbitMQ

- **Maintenance and Enhancements to an ATM Management system**
  - Migrated hosting from Rackspace to Amazon Web Services.
  - Migrated primary banking data provider from RBS Lynk to Columbus Data Services.
  - Created inbound email processing pathway for custom notifications.
  - Added predictive modelling for sites accepting deposits.
  - Added capability to manage Bitcoin/Cryptocurrency machines.
  - Added algorithm to detect and intercept jackpotting attempts.

Stack: PHP, Java, C#, MySql/MariaDB, MS SQL Server, RabbitMQ

- **Created System to Manage Commercial and Residential Junk Collection**
  - Introduced gratuity collection into billing and payroll processing workflows.
  - Allow job-site photos to be captured and displayed on invoices.
  - Added purchase order processing for commercial customer invoices.
  - Added routing to regional dump-sites based on accepted materials.
  - Added Facebook API integration for marketing.
  - Added new service technician milestones On-The-Way and Arrived.
  - Added a complex, calendar-based primary scheduling presentation.
  - Added multiple custom invoice strategies to better service commercial properties.

Stack: PHP, MySql/MariaDB

- **Maintenance and Enhancements to an Independent Mosquito Control Management System**
    - Add integration with merchant account provider Stripe.
    - Migration from Rackspace to Amazon Web Services.
    - Added blast marketing integration using MailChimp.

  Stack: PHP, MySql/MariaDB

Various Apps and Sundries Delivered:
- System to Manage Major Appliance Displays in Popular Home Improvement Stores
- System to Manage Residential Garbage Bin Washing Franchise
- System to Manage Home and Office Cleaning Services
- System to Manage Chiropractic Appointments
- System to Manage Residential Pressure Washing Services
- System to Manage Seasonal Holiday Lighting Installation
- System to Manage Residential and Commercial Snow-Plow Service
- System to Manage Deer Repellent Services
- Marketing Website for a Theme Park in Upstate NY
- Took Over Development of System to Direct New Employee Training Needs

Software Development Manager
Bandwidth – Raleigh, NC – https://bandwidth.com
November 2012 – October 2017

Oversaw a collection of teams across a variety of service areas within a now publicly traded (NASDAQ: BAND) telephony platform service provider.

- Iris Team (4 developers):
    Served in a "Player/Coach" role in the primary REST API service engine that provisions the Telephony features for Bandwidth customers.

    Stack: Java, REST, MySQL, Redis, RabbitMQ, Cassandra

- Billing Team (5 developers):
    Responsible for the team that priced all telephony services and generated invoices for all Bandwidth customers.

    Stack: C# DotNet, MS SQL Server, Java, Kafka, MariaDB

- Route Engine Team (4 developers, 5 outside consultants):
    Responsible for the team that oversees the Least Cost Routing engine, a critical piece of telephony infrastructure and key revenue driver for Bandwidth.

    Stack: Java, Scala, MapDB, MariaDB, Memcached

- "Kanban" Team (3 developers):

The team that maintained many critical legacy systems and procedures that didn't fit nicely in other departments.

Stack: PHP, Java, MySQL, MS SQL Server

Bandwidth Innovation Award Recipient: December 2015 - For innovation around billing system call detail record rating capabilities and overall billing system stability.

Founder and Chief Executive
Syntive Solutions – Raleigh, NC - https://syntive.com
November 2008 – November 2012

Founded an independent custom software development consulting practice. Served as the sole proprietor for the first year, eventually growing the staff to 8 employees.

Notable Projects:
- Conversion of a Client/Server ATM Management System to a web based version.
- A predictive modelling system used to assist in the service and maintenance of Automated Teller Machines (ATMs).
- A Title Insurance Policy Management system.
- Mailing List Marketing Campaign Processing for a Major National Movie Theater Chain.
- Prototyping, design and development of Mosquito Control Routing and Customer Relationship Management System.
- Online Custom Greeting Card Design and Fulfillment Website.
- Created a site that achieved the status of the largest online reseller of aggregated medical studies in the U.S.

Stack: PHP, Java, Ruby on Rails, MySql, MariaDB, MS SQL Server, C#

Principal Software Engineer
Interface Technologies – Raleigh, NC – https://iticentral.com
January 2006 – December 2010

Notable Projects:
- A Client/Server system used to assist in the service and maintenance of Automated Teller Machines (ATMs).
- A Title Insurance Policy Management system.
- An emergency notification system for the parents of school children.
- A home security alarm system installation management application.

Stack: C#, ASP.net, MS SQL Server

Senior Software Engineer
Fiserv – Raleigh, NC – https://fiserv.com
January 2005– December 2005

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Converted to a full-time employee of a Mortgage Lending Company upon successful delivery of the software development project where I contributed as a consultant.

Senior eBusiness Consultant
Idea Integration – Fairfax, VA - https://idea.com
August 2000 – January 2005

Served as Senior eBusiness Consultant for an international eBusiness consulting company. Provided a variety of roles, services and solutions to the following clients:
Senior Consultant through Idea Integration
BCE Emergis – McLean, VA - https://emergis.com
December 2002 – January 2005

Served as senior J2EE developer for a Mortgage Lending Company providing an online electronic mortgage closing, mortgage document storage and mortgage vendor service portal. Responsibilities include full life cycle development, design, support and maintenance using the Extreme Programming methodology and BEA WebLogic Server. Was responsible for the design and implementation of a key business partner integration and continues to be involved in the security strategy and testing framework for the primary integration partner effort. Served as lead graphic designer as well as champion of Web User Interface usability, standards compliance, design and implementation strategies and best practices. The core competencies involved in this project are J2EE/JSP, XHTML, CSS, Struts/Tiles, BEA WebLogic, SiteMinder, iLumin, CVS, JUnit, HttpUnit, Ant, iPlanet Web Server, XML, Oracle DBMS and LDAP.

Senior Consultant through Idea Integration
Freddie Mac – McLean, VA – https://freddiemac.com
June 2001 – December 2002

Served as senior J2EE developer for an industry leading Financial Services Company providing an online electronic mortgage closing, mortgage document storage and mortgage vendor service portal. Responsibilities include full life cycle development, design, support and maintenance using the Extreme Programming methodology and BEA WebLogic Server. Was responsible for the design and implementation of a key business partner integration and continues to be involved in the security strategy and testing framework for the primary integration partner effort. Served as champion of Web User Interface usability, standards compliance, design and implementation strategies and best practices. The core competencies involved in this project are J2EE/JSP, XHTML, CSS, Struts/Tiles, BEA WebLogic, SiteMinder, iLumin, CVS, JUnit, HttpUnit, Ant, iPlanet Web Server, XML, Oracle DBMS and LDAP.

Senior Consultant through Idea Integration
1 2 Snap – Chiacago, IL / Munich, Germany / Prague, Czech Republic – https://12snap.com
March 2001 – June 2001

Served as the senior usability consultant of a large-scale wireless application development project for a European telecommunications company. The project involved the initial project assessment, design and system architecture, and the development of a functional prototype using J2EE/JSP and BEA WebLogic and Apache web server. The core competencies involved in this project were J2EE/JSP, BEA WebLogic, Apache Web Server, WAP, SMS, VoiceXML, PHP Oracle DBMS and MySQL.

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Senior Consultant through Idea Integration
SBC Ameritech – Troy, MI – https://www.sbc.com
January 2001 – March 2001

Served as the senior systems architect for the initial design phase of a print publication pagination system for a national telecommunications company. The engagement involved facilitating a series of JAD sessions with key stakeholders, participation in research and design sessions and resulted in the presentation of a final recommendation document which was used to steer the project development and production deployment. The core competencies involved in this project were J2EE/JSP, BEA WebLogic, Apache Web Server, XML, and Oracle.

Senior Consultant through Idea Integration
MCI/Worldcom/UUNet – Northern VA – https://www.mci.com
August 2000 – January 2001

Served as a senior developer and trouble ticket specialist for the integration of the Remedy trouble ticket management system into a large-scale Internet customer care application project for a national telecommunications company. The project was a full life-cycle software development effort to build a customer self-service application allowing customers to access and manage network information via an Internet browser. Implemented a TCP/IP Client interface to the Remedy trouble ticket management system using PERL and Java. The core competencies involved in this project were PERL, J2EE/JSP, BEA WebLogic, iPlanet Web Server, XML, Remedy and Oracle DMBS.

Senior Technical Consultant
Vertical Solutions Incorporated – Cincinnati, OH – https://vertsol.com
February 2000 – August 2000

Served as a senior technical consultant and team leader for an industry leading E-Customer Relationship Management System software developer. The responsibilities included the signature application migration from the Client/Server architecture to a hosted ASP environment. Was also responsible for ascertaining the principal intellectual property from the initial team of developers and establishing a team of on-site developers to drive the migration project and continue customer maintenance and customizations. The core competencies involved in this project were PowerBuilder, C++, PHP, Apache Web Server, MySQL and Sybase.

Senior Software Engineer
Customer Access Resources, Inc. – Raleigh, NC – https://xtrasource.com
February 1998 – February 2000

Served as a senior developer and Webmaster for an E-Business Customer Support Call Center. Was responsible for the design and deployment of more than 20 customized customer support intranet applications for a variety of E-Businesses ranging from companies as diverse as telephony providers, to the airline industry, to online financial institutions, to open source operating system manufacturers. The client campaigns involved extensive integration with legacy systems, and required extensive use of modular development, code reuse and branding. This project involved software development and deployment in a 24/7 facility and involved much use and understanding of predictive dialer equipment and redundant systems. The core competencies involved in this project were Microsoft Visual Basic, Microsoft Internet Information Server, Microsoft Transaction Server, PERL, Apache Web Server, and Microsoft SQL Server.

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Software Engineer
HotOffice Technologies – Boca Raton, FL – https://hotoffice.com
June 1996 – February 1998

Was a Webmaster and software developer for an award winning online virtual office service. Was one of the first Java developers for a commercial product on the PC platform and was instrumental in the development of the first Java application server. Worked closely with Microsoft on the implementation of COM into the Microsoft Java Virtual Machine. Served as the administrator of the revision and source control system and was responsible for all release engineering duties for a team of more than twenty developers. The core competencies involved in this project were Java, ASP, Microsoft Internet Information Server, Microsoft Transaction Server, C++, COM, Microsoft SQL Server.

Software Engineer
Sprint Telecommunications – Overland Park, KS – https://sprint.com
1992 – 1996

Served as a graphical user interface developer for an international long distance telecommunications traffic monitoring system for a major telecommunications provider. Was the user interface developer for the client portion of an international graphical call tracking system. The core competencies involved in this project were Microsoft Visual Basic, C++, COM, TCP/IP and Microsoft SQL Server.