

## System Integration and Architecture

### Members:

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| System | Before System      | After System       | Programming Language | Software Used                               | System Requirements   | Programming Language Use | Hardware Requirements                              | Server Used                              |
|--------|--------------------|--------------------|----------------------|---|---|--------------------------|--|--|
| CRM    | Legacy CRM System  | Modern CRM System  | Java, C#, Python     | Salesforce, Microsoft Dynamics 365, HubSpot | Operating System: Windows 10 or later, macOS 10.15 or later | Java, C#, Python         | Modern hardware                                    | Salesforce Cloud, Microsoft Dynamics 365 |
| CMS    | Legacy CMS System  | Modern CMS System  | Java, C#, Python     | WordPress, Drupal, Joomla                   | Web server, PHP/Java runtime, compatible database system    | Java, C#, Python         | Web server (Apache, Nginx), PHP/Java runtime       | Apache HTTP Server, Nginx                |
| HRIS   | Legacy HRIS System | Modern HRIS System | Java, C#, Python     | Workday, SAP SuccessFactors, BambooHR       | Modern server infrastructure, compatible databases          | Java, C#, Python         | Modern server infrastructure, compatible databases | Workday, SAP SuccessFactors, BambooHR    |
| POS    | Legacy POS System  | Modern POS System  | Java, C#, Python     | Square, Lightspeed, Shopify                 | Specific hardware and software requirements                 | Java, C#, Python         | Specific hardware and software requirements        | Square, Lightspeed, Shopify              |
| ERP    | Legacy ERP System  | Modern ERP System  | Java, C#, Python     | SAP ERP, Oracle E-Business                  | Specific hardware and                                       | Java, C#, Python         | Specific hardware and                              | SAP ERP, Oracle E-Business               |

|                                  |  |  |                     |   |   |                     |  |   |
|----------------------------------|--|--|---------------------|---|---|---------------------|--|---|
|                                  |  |  |                     | Suite,<br>Microsoft<br>Dynamics<br>365                      | software<br>requirements                                    |                     | software<br>requirements                                 | Suite,<br>Microsoft<br>Dynamics 365                     |
| E-commerce                       | Legacy E-commerce<br>System            | Modern E-commerce<br>System            | Java, C#,<br>Python | Magento,<br>Shopify,<br>WooCommerce                         | Web server<br>(Apache,<br>Nginx),<br>PHP/Java<br>runtime    | Java, C#,<br>Python | Web server<br>(Apache,<br>Nginx),<br>PHP/Java<br>runtime | Apache HTTP<br>Server, Nginx                            |
| Helpdesk                         | Legacy Helpdesk<br>System              | Modern Helpdesk<br>System              | Java, C#,<br>Python | Zendesk,<br>Freshdesk,<br>ServiceNow                        | Web server<br>(Apache,<br>Nginx),<br>PHP/Java<br>runtime    | Java, C#,<br>Python | Web server<br>(Apache,<br>Nginx),<br>PHP/Java<br>runtime | Apache HTTP<br>Server, Nginx                            |
| Accounting                       | Legacy Accounting<br>System            | Modern Accounting<br>System            | Java, C#,<br>Python | QuickBooks,<br>Xero, Sage                                   | Specific<br>hardware and<br>software<br>requirements        | Java, C#,<br>Python | Specific<br>hardware and<br>software<br>requirements     | QuickBooks,<br>Xero, Sage                               |
| Project<br>Management            | Legacy Project<br>Management<br>System | Modern Project<br>Management<br>System | Java, C#,<br>Python | Jira, Asana,<br>Microsoft<br>Project                        | Specific<br>hardware and<br>software<br>requirements        | Java, C#,<br>Python | Specific<br>hardware and<br>software<br>requirements     | Jira, Asana,<br>Microsoft<br>Project                    |
| Payroll                          | Legacy Payroll<br>System               | Modern Payroll System                  | Java, C#,<br>Python | ADP,<br>Paychex,<br>Gusto                                   | Modern server<br>infrastructure,<br>compatible<br>databases | Java, C#,<br>Python | Modern<br>server<br>infrastructure,<br>compatible        | Cloud Server  |
| Inventory                        | Legacy Inventory<br>System             | Modern Inventory<br>System             | Java, C#,<br>Python | SAP<br>Inventory<br>Management<br>, Odoo, Zoho<br>Inventory | Specific<br>hardware and<br>software<br>requirements        | Java, C#,<br>Python | Specific<br>hardware and<br>software<br>requirements     | SAP Inventory<br>Management,<br>Odoo, Zoho<br>Inventory |
| Learning<br>Management<br>System | Legacy LMS<br>System                   | Modern LMS<br>System                   | Java, C#,<br>Python | Moodle,<br>Canvas,<br>Blackboard                            | Web server<br>(Apache,<br>Nginx),                           | Java, C#,<br>Python | Web server<br>(Apache,<br>Nginx),                        | Apache HTTP<br>Server, Nginx                            |

|                     |                                   |                                   |                  |   |   |                  |                                    |   |
|---------------------|-----------------------------------|-----------------------------------|------------------|---|---|------------------|------------------------------------|---|
|                     |                                   |                                   |                  |   | PHP/Java runtime  |                  | PHP/Java runtime                   |   |
| Messaging           | Legacy Messaging System           | Modern Messaging System           | Java, C#, Python | Slack, Microsoft Teams, Discord                                 | Modern hardware, compatible software                            | Java, C#, Python | Modern hardware                    | Slack, Microsoft Teams, Discord                                 |
| Document Management | Legacy Document Management System | Modern Document Management System | Java, C#, Python | SharePoint, Google Drive, Dropbox                               | Web browser, internet connectivity                              | Java, C#, Python | Web browser, internet connectivity | SharePoint, Google Drive, Dropbox                               |
| Time Tracking       | Legacy Time Tracking System       | Modern Time Tracking System       | Java, C#, Python | Toggl, Harvest, Clockify  | Web browser, internet connectivity                              | Java, C#, Python | Web browser, internet connectivity | Toggl, Harvest, Clockify  |
| Collaboration       | Legacy Collaboration System       | Modern Collaboration System       | Java, C#, Python | Microsoft Office 365, Google Workspace                          | Web browser, internet connectivity                              | Java, C#, Python | Web browser, internet connectivity | Microsoft Office 365, Google Workspace                          |
| Customer Support    | Legacy Customer Support System    | Modern Customer Support System    | Java, C#, Python | Zendesk, Freshdesk, Salesforce Service Cloud                    | Web browser, internet connectivity                              | Java, C#, Python | Web browser, internet connectivity | Zendesk, Freshdesk, Salesforce Service Cloud                    |
| Bug Tracking        | Legacy Bug Tracking System        | Modern Bug Tracking System        | Java, C#, Python | Jira, Bugzilla, GitHub Issues                                   | Web browser, internet connectivity                              | Java, C#, Python | Web browser, internet connectivity | Jira, Bugzilla, GitHub Issues                                   |
| Data Analytics      | Legacy Data Analytics System      | Modern Data Analytics System      | Python, R, SQL   | Tableau, Power BI, Python libraries (NumPy, Pandas, TensorFlow) | Modern hardware, compatible software, data storage capabilities | Python, R, SQL   | Modern hardware                    | Tableau, Power BI, Python libraries (NumPy, Pandas, TensorFlow) |