Project Documentation

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1. Project Overview

Core Functionality and System Architecture

The DDS_Project repository contains a single DDS source file, VII ap system all DDS files 22Sep25.dds, which defines the display file (DSPF) for an Accounts Payable (AP) system. The file is responsible for rendering multiple user interface screens, including menus, vendor maintenance, invoice entry, and inquiry screens. The system architecture is based on IBM i (AS/400) DDS (Data Description Specifications), which is used to define the layout and behavior of terminal-based user interfaces.

The architecture leverages subfiles for data display and navigation, overlays for efficient screen management, and function keys for user interaction. The system is designed to operate within a green-screen environment, adhering to the constraints and capabilities of DDS.

Key Features and Capabilities

- **Menu Navigation**: Provides a main menu (MAINMENU) and submenus for Accounts Payable operations.
- **Vendor Maintenance**: Screens (VENDSCR, VENDSCR01) for adding, updating, and viewing vendor information.
- **Invoice Management**: Subfiles (INQSFL01) for querying and managing invoices.
- **Payment Processing**: Subfiles (PAYSFL01) for handling payment entries.
- **Inquiry Screens**: Allows users to search and view vendor and invoice details.
- **Function Key Support**: Enables actions like exiting, canceling, and navigating through screens.
- **Subfile Paging**: Implements paging for large datasets using SFLCTL and SFLDSP.

2. Executive Summary

Business Objectives and Success Metrics

The primary objective of the DDS_Project is to streamline the Accounts Payable process by providing a robust, terminal-based user interface for managing vendors, invoices, and payments. Success is measured by: - Accuracy: Reducing errors in data entry and processing. - Efficiency: Minimizing the time required for routine AP tasks. - User Adoption: Ensuring ease of use for non-technical users.

Target Users and Stakeholders

- **Accounts Payable Staff**: Primary users responsible for managing vendors, invoices, and payments.
- **Finance Managers**: Stakeholders who oversee AP operations and require inquiry capabilities.
- **IT Administrators**: Responsible for maintaining and updating the DDS source code.

Strategic Value Proposition

The system provides a cost-effective solution for managing Accounts Payable operations within legacy IBM i environments. By leveraging DDS, it ensures compatibility with existing infrastructure while offering a structured, user-friendly interface.

3. Technology Stack

| Category | Technologies/Tools |

|----------|----------|

| Programming Languages | DDS Source |

| Frameworks | N/A |

| Databases | IBM DB2 (assumed) |

| DevOps | IBM i CL Commands |

| APIs/Services | N/A |

4. Code Structure

Directory Structure:

```
■■■ ■ DDS_Project
■■■ ■ VII ap system all DDS files 22Sep25.dds
```

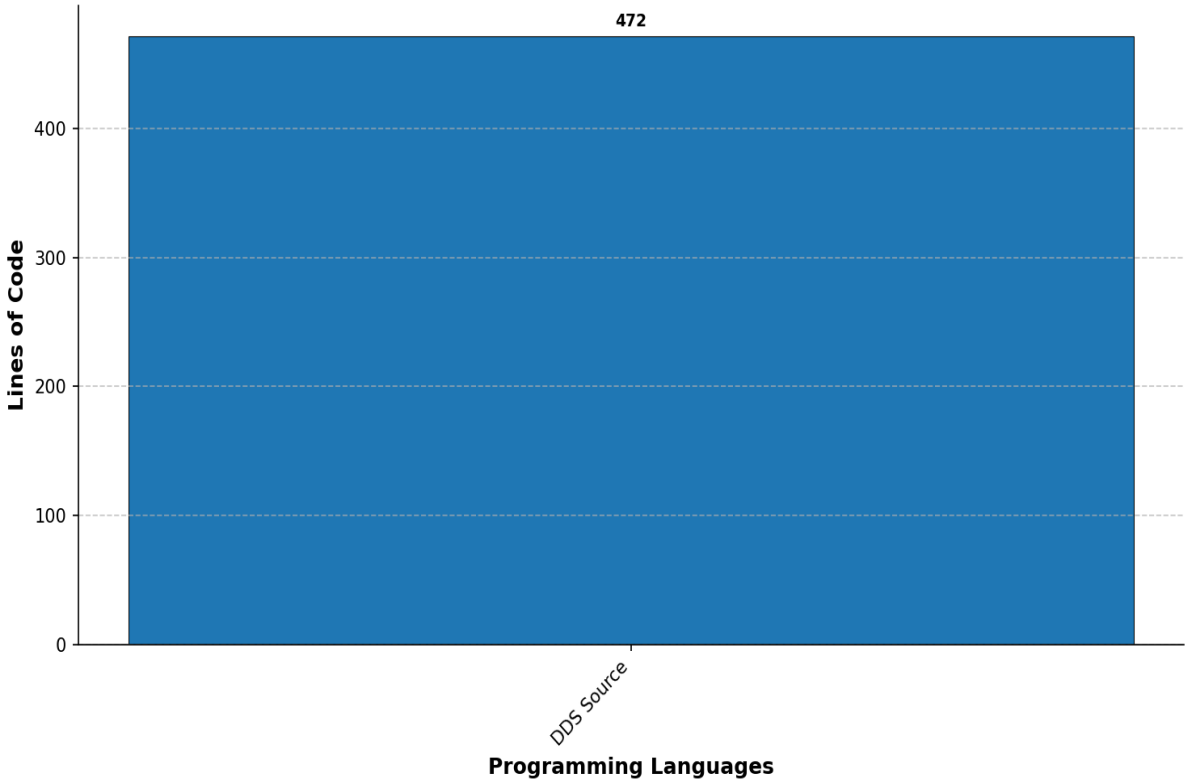
Key Module Responsibilities

- **Main Menu (MAINMENU)**: Provides navigation options for AP functions.
- **Vendor Screens (VENDSCR, VENDSCR01)**: Handles vendor data entry and updates.
- **Subfiles (SFL01, INQSFL01)**: Manages data display for vendors and invoices.
- **Inquiry Screens (INQSFL01)**: Allows users to query and view invoice details.

Entry Points and Core Components

- **Entry Point**: MAINMENU serves as the initial screen for user navigation.
- **Core Components**: Subfiles (SFL01, INQSFL01) and overlays (APMENUDF) are critical for data display and user interaction.

5. Lines of Code Analysis



Breakdown by Language

- **DDS Source**: 100% of the codebase.

Code Quality Score and Metrics

- **Score**: 40/100
- **Metrics**:
- **Readability**: Moderate
- **Maintainability**: Low
- **Modularity**: Low

Best Practices Implemented

- Effective use of overlays and subfiles.
- Standardized display size (DSPSIZ(24 80 *DS3)).

Code Issues and Anti-patterns

- Hardcoded values reduce flexibility.

- Lack of comments and modular design.
- Poor formatting and alignment.

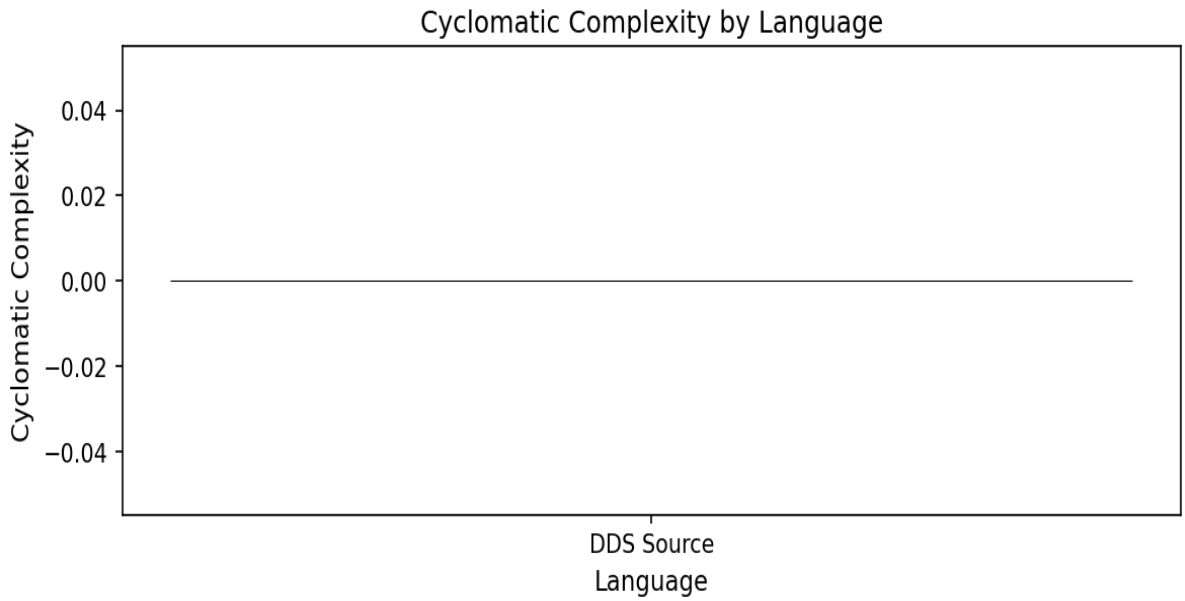
Technical Debt Assessment

- **Level**: High
- **Contributing Factors**: Redundancy, lack of abstraction, and poor documentation.

6. Code Complexity Analysis

Cyclomatic Complexity by Language

0



Cyclomatic Complexity by Language

- **DDS Source**: 0 (static display files do not involve conditional logic).

Recommendations for Reducing Complexity

- Introduce modular design to improve maintainability.
- Refactor hardcoded values into constants.
- Add inline comments to clarify functionality.

7. Application Features

Core Functionality

- Vendor management, invoice processing, and payment handling.

User-facing Features

- Menu navigation, data entry screens, and inquiry subfiles.

Administrative Capabilities

- None explicitly defined in the DDS file.

Performance Characteristics

- Optimized for terminal-based environments with minimal resource usage.

Unique or Innovative Features

- Efficient use of overlays and subfiles for data display.

Integration Points

- Assumed integration with IBM DB2 for data storage.

8. Dependencies

| Page/Component | API Endpoint | Purpose | Request Method |

|----------------|--------------|---------|----------------|

| MAINMENU | N/A | Menu navigation | N/A |

| VENDSCR | N/A | Vendor maintenance | N/A |

| INQSFL01 | N/A | Invoice inquiry | N/A |

9. Known Issues & Challenges

Current Limitations

- Static design limits flexibility.
- No integration with modern UI frameworks.

Technical Debt

- High due to hardcoding and lack of modularity.

Optimization Opportunities

- Refactor repetitive code.
- Improve documentation and readability.

Missing Best Practices and Code Issues

- Lack of error handling and validation mechanisms.
- Absence of dynamic data binding.

Explain Code Line by Line

File: DDS_Project\VII ap system all DDS files 22Sep25.dds

DDS Source Program Documentation Program Type: DDS Source Purpose: This program defines the display file for an Accounts Payable (AP) system. It includes multiple screens for menu navigation, vendor maintenance, and invoice entry. The program facilitates user interaction through overlays, input fields, and command keys. Files Used: None explicitly mentioned in the provided code. Libraries: IBM iSeries DDS (Data Description Specifications) library for defining display files.

A. Program Structure

A.1. Declaration Section The declaration section includes the definition of display attributes, such as screen size, command keys, and overlays.

A.2. Parameters Input parameters: User selections and data entered in the fields (e.g., vendor number, invoice details). Output parameters: Displayed menus and data fields.

A.3. File Declarations The program defines multiple record formats (e.g., `APMENUDF`, `MAINMENU`, `VENDSCR`, `INVSCR`) for different screens in the Accounts Payable system.

B. Program Logic Flow

B.1. Main Processing Loop The program flow is based on user interaction with the display screens. Users navigate through menus, input data, and trigger actions using function keys.

B.2. Other Sections as Needed Each record format corresponds to a specific screen, with fields and attributes defined for user interaction.

C. Explain Code Line by Line

Line 001.00: A*%%TS RD 20240917 162245 AMIT REL-V7R5M0 5770-WDS Explanation: This is a timestamp and metadata line indicating the creation or modification date (2024-09-17 at 16:22:45), the author (AMIT), the release version

(V7R5M0), and the product (5770-WDS).

Line 002.00: A*%%EC Explanation: This is a comment line indicating the end of the comment section.

Line 003.00: A DSPSIZ(24 80 *DS3) Explanation: Defines the display size for the screen as 24 rows by 80 columns. The `*DS3` keyword specifies the display station format.

Line 004.00: A CA03(03 'Exit') Explanation: Defines a command attention (CA) key. Pressing F3 triggers the "Exit" action.

Line 005.00: A CA12(12 'Cancel') Explanation: Defines another CA key. Pressing F12 triggers the "Cancel" action.

Line 006.00: A PRINT Explanation: Specifies that the display file supports printing.

Line 007.00: A R APMENUDF OVERLAY Explanation: Defines a record format named `APMENUDF`. The `OVERLAY` keyword allows this record format to be displayed on top of an existing screen without clearing it.

Line 008.00: A*%%TS SD 20240917 162245 AMIT REL-V7R5M0 5770-WDS Explanation: Another timestamp and metadata line for the `APMENUDF` record format.

Line 009.00: A*%%EC Explanation: End of comment section for the `APMENUDF` record format.

Line 010.00: A DSPSIZ(24 80 *DS3) Explanation: Repeats the display size definition for the `APMENUDF` record format.

Line 011.00: A CA03(03 'Exit') Explanation: Repeats the definition of the F3 "Exit" key for the `APMENUDF` record format.

Line 012.00: A CA12(12 'Cancel') Explanation: Repeats the definition of the F12 "Cancel" key for the `APMENUDF` record format.

Line 013.00: A R MAINMENU Explanation: Defines a new record format named `MAINMENU`.

Line 014.00: A OVERLAY Explanation: Specifies that the `MAINMENU` record format will overlay the existing screen.

Line 015.00: A 1 2'APMENU' Explanation: Displays the text "APMENU" at row 1, column 2.

Line 016.00: A 1 32'ACCOUNTS PAYABLE MENU' Explanation: Displays the text "ACCOUNTS PAYABLE MENU" at row 1, column 32.

Line 017.00: A 1 71DATE Explanation: Displays the word "DATE" at row 1, column 71.

Line 018.00: A EDTCDE(Y) Explanation: Specifies that the date field will use the `Y` edit code for formatting.

Line 019.00: A 2 71TIME Explanation: Displays the word "TIME" at row 2, column 71.

Line 020.00: A 4 2'Select one of the following:' Explanation: Displays the instruction "Select one of the following:" at row 4, column 2.

Line 021.00: A 6 5'1. Vendor Maintenance' Explanation: Displays the menu option "1. Vendor Maintenance" at row 6, column 5.

Line 022.00: A 7 5'2. Invoice Entry' Explanation: Displays the menu option "2. Invoice Entry" at row 7, column 5.

Line 023.00: A 8 5'3. Statement Processing' Explanation: Displays the menu option "3. Statement Processing" at row 8, column 5.

Line 024.00: A 9 5'4. AP Reports' Explanation: Displays the menu option "4. AP Reports" at row 9, column 5.

Line 025.00: A 10 5'5. Payment Processing' Explanation: Displays the menu option "5. Payment Processing" at row 10, column 5.

Line 026.00: A 12 5'99. Exit' Explanation: Displays the menu option "99. Exit" at row 12, column 5.

Line 027.00: A 14 5'Selection . . .' Explanation: Displays the prompt "Selection . . ." at row 14, column 5.

Line 028.00: A SELECTION 2S 0B 14 20VALUES(1 2 3 4 5 99) Explanation: Defines an input field named `SELECTION` with a length of 2 digits, zero decimal places, and binary format. The field is located at row 14, column 20, and accepts only the values 1, 2, 3, 4, 5, or 99.

Line 029.00: A 22 2'F3=Exit F12=Cancel' Explanation: Displays the function key legend "F3=Exit F12=Cancel" at row 22, column 2.

Line 030.00: A 24 2'(C) 2024 - Accounts Payable System' Explanation: Displays the copyright notice "(C) 2024 - Accounts Payable System" at row 24, column 2.

The remaining lines follow a similar structure for defining additional screens (`VENDSCR`, `INVSCR`) with their respective fields and attributes.

End of Documentation