**VI. Alpha Prototype Description**

The Alpha Prototype for our project focuses on developing and integrating critical components of the proposed architecture for the Psych Clinic Web Application, designed to enhance therapeutic interventions by collecting, analyzing, and presenting survey and journaling data from participants. The current prototype includes several key subsystems: the Qualtrics Survey Data Integration, which retrieves survey responses through a webhook and processes them for further use; the PDF Report Generator, responsible for creating personalized reports that summarize participants' personality assessment results with graphical representations, detailed textual feedback, and recommended treatment strategies tailored to individual needs; and the Email Delivery Subsystem, which automates the process of sending these reports to participants and clinicians upon survey completion. The User Interface (UI) has also been enhanced, with functional pages for login, survey submission, and report viewing, designed to improve usability for therapists and participants. Substantial progress has been made in integrating these subsystems, allowing for a seamless workflow from survey submission to report generation and delivery. Testing has been conducted at both the unit and integration levels. The PDF Report Generator has undergone iterative improvements based on client feedback, with approximately 80% of its functionality implemented, including adjustments to graph designs and formatting issues such as paragraph indentation and consistent font sizes. Integration testing confirmed successful end-to-end workflows, while UI tests gathered usability insights, leading to planned adjustments like increasing font sizes and refining button placements. Findings from these tests highlighted the need to address issues such as large text gaps in reports, unclear graph labels, and basic email template designs, all of which are currently being refined.

**VI.1. PDF Report Generator Subsystem**

**VI.1.1. Functions and Interfaces Implemented**

Survey Data Integration:

The PDF Report Generator subsystem retrieves survey data submitted by participants through the Qualtrics survey platform. This data is then parsed and processed for report generation.

Personalized Report Generation:

The subsystem generates personalized PDF reports based on survey responses, summarizing key personality assessment results. Reports include:

Graphical representations of survey results (e.g., bar graphs).

Recommended treatment strategies tailored to participants’ specific needs.

Clear textual descriptions to ensure the report is user-friendly and informative.

Email Delivery Functionality:

The generated PDF reports are automatically sent to both participants and clinicians via email upon survey completion.

Improved Report Design:

Multiple iterations of the PDF layout and graphical content have been implemented to address client feedback.

Improvements include:

Reformatting headers, paragraphs, and graph labels.

Adjusting the design of graphs to enhance readability.

Interface with Web Application:

The PDF Report Generator subsystem is integrated with the PythonAnywhere-hosted Flask web application. The /generate\_report API endpoint was created to manually or automatically trigger report generation as needed.

Remaining Work:

Refining the text formatting to eliminate large gaps between words and ensure consistency in font sizes.

Further improving graph clarity, including label adjustments and resizing for better presentation.

**VI.1.2. Preliminary Tests**

Unit Tests:

-Report Generation:

Successfully tested the generation of PDF reports with sample survey data.

Verified that graphs and descriptive text appear correctly in the output, adhering to the latest feedback from the client.

-Graph Representation:

Tested bar graph labels and adjusted axes descriptors to ensure they match the intended format (e.g., “BAS-Drive” instead of “BAS-D”).

Integration Tests:

-Email Delivery:

Verified successful delivery of generated PDF reports to both participant and clinician email addresses using test accounts.

-Qualtrics Data Workflow:

Tested the end-to-end process of receiving survey data via a webhook, generating the PDF report, and delivering it via email.

-Findings and Improvements:

Graphical Adjustments: Identified the need to increase x-axis font sizes and reposition graph descriptions for better visibility.

Report Formatting: Detected inconsistent indentation and paragraph spacing, which are being resolved in subsequent iterations.

**Screenshots:**Screen capture of the generated PDF report before modification：https://docs.google.com/document/d/1EcxIATLBac0xsB0D1nLsf4qX4Ujps8gGZOKd8W2RxTM/edit?usp=sharing

Screen capture of the generated PDF report before modification：  
https://docs.google.com/document/d/1Eeb4YjsIuhm067ej0hLY4eNUF0K0JrX262M2\_toLTyw/edit?usp=sharing