Introduction

Mental health issues are a prevalent problem in our society today. Those with depression, anxiety, and other mood disorders may struggle day to day with their lives, jobs, and relationships. With the rise in awareness of people’s mental health struggles, there has also been an increase in the amount of research that has been done to investigate treating the mentally ill which has also led to many different types of treatment. Many people with mental health treatment may try to seek psychological help through a doctor or therapist but may struggle to figure out what the best type of treatment would be for them.

One type of psychological research investigates how a person’s personality (also called their temperament) affects their thoughts, emotions, and behaviors. There has been some research to show how a person’s temperament may show how well they are responding to their treatment though there has been little evidence-based research about it.

The goal of our project is to build upon that investigation of how a person’s temperament reflects their treatment and use surveys to show that correlation. Our main survey is the Person in Context Assessment (PICA) which get’s a general idea of what a person’s current temperament is and then sends a PDF with the results of their assessment. The other survey is a daily application where the person enters the different events/contexts they were in as well as any thoughts, feelings, or behaviors that they did when in the context. Our goal is to optimize these surveys to collect real user’s data and be able to allow a doctor to better understand and tailor a patient’s treatment based upon how their temperament and daily behaviors.

Functional Requirements

1. PICA Assessment
   1. Results PDF

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| --- | --- |
| Description | The PICA Qualtrics survey needs to be able to create a PDF of the resulting charts and graphs that is easy to understand for the user as well as adding more in-depth details and a radar chart. |
| Source | Required from Client. Adding on to already implemented functionality. |
| Priority | Priority Level 0: Essential and required functionality |

* 1. Automatic PDF Sending

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| --- | --- |
| Description | The PICA Qualtrics survey results will be automatically sent to the email that the user provided in the survey and will be sent after the survey is completed. |
| Source | Required from Client. Client needs to be able to send results to patient. |
| Priority | Priority Level 0: Essential and required functionality |

* 1. Data Collection

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| --- | --- |
| Description | The PICA survey data from all surveys taken must be sent to the MongoDB database to be stored. |
| Source | Internal requirement from team. Building upon functionality added by previous team. |
| Priority | Priority Level 0: Essential and required functionality |

1. Phone Application
   1. PICA Assessment Results

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| Description | The PICA data for the patient must be able to be inputted into the phone app which allows the user to see their results in the phone app. |
| Source | Requirement from Client. Client needs to be able to integrate the PICA data with the phone app. |
| Priority | Priority Level 0: Essential and required functionality. |

* 1. PICA Based Questions

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| Description | The phone app will ask specific questions based upon the patient’s temperament that was entered into the survey. |
| Source | Requirement from Client. Client needs to be able to ask questions based upon the entered temperament. |
| Priority | Priority Level 0: Essential and required functionality. |

* 1. Clustering Algorithm

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| Description | The algorithm that is used to group events that are “functionally equivalent” based on shared thoughts, feelings, or behaviors will be grouped together either through a mathematically complex algorithm or AI and will be then approved to be clustered by the user or the doctor. |
| Source | Internal requirement from team. Building upon already implemented functionality. |
| Priority | Priority Level 2: Extra features or stretch goals |

* 1. Data Collection

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| --- | --- |
| Description | The phone app data from all surveys will be stored in a MongoDB database and be able to be collected from the database. |
| Source | Internal requirement from team. Building upon functionality added by previous team. |
| Priority | Priority Level 0: Essential and required functionality |