**Solution Design Document (SDD) for Currency Converter**

**1. Process Overview** The process involves automating currency conversion tasks using an online tool, performing calculations, and sending an email with the results.

**2. Workflows** The automation process can be divided into the following workflows:

* **Read Excel**: This workflow reads the Excel file and stores the data in a DataTable variable.
* **Currency Conversion**: This workflow uses the online currency converter tool to convert the values from one currency to another.
* **Update Excel**: This workflow updates the Excel file with the conversion results.
* **Calculate Total**: This workflow calculates the total of the converted values.
* **Send Email**: This workflow sends an email with the summary and the updated Excel file.

**3. Workflow Details**

* **Read Excel**
  + **Arguments**:
    - in\_FilePath: The path of the Excel file.
    - out\_DataTable: The DataTable to store the Excel data.
  + **Activities**:
    - Excel Application Scope: Opens the Excel file.
    - Read Range: Reads the data and stores it in the DataTable.
* **Currency Conversion**
  + **Arguments**:
    - in\_DataTable: The DataTable with the Excel data.
    - out\_DataTable: The DataTable with the conversion results.
  + **Activities**:
    - For Each Row: Iterates through each row of the DataTable.
    - Assign: Assigns the values of the ‘Value’, ‘From Currency’, and ‘To Currency’ columns to variables.
    - Open Browser: Opens the online currency converter tool.
    - Type Into: Inputs the value and the currencies into the tool.
    - Get Text: Gets the conversion result.
    - Assign: Assigns the result to the ‘Result’ column of the DataTable.
* **Update Excel**
  + **Arguments**:
    - in\_DataTable: The DataTable with the conversion results.
  + **Activities**:
    - Excel Application Scope: Opens the Excel file.
    - Write Range: Writes the updated data to the Excel file.
* **Calculate Total**
  + **Arguments**:
    - in\_DataTable: The DataTable with the conversion results.
    - out\_Total: The total of the converted values.
  + **Activities**:
    - Assign: Initializes the total to 0.
    - For Each Row: Iterates through each row of the DataTable.
    - Assign: Adds the value of the ‘Result’ column to the total.
* **Send Email**
  + **Arguments**:
    - in\_Total: The total of the converted values.
    - in\_FilePath: The path of the Excel file.
  + **Activities**:
    - Send Outlook Mail Message: Sends an email with the summary and the Excel file.

**4. Exception Handling** Each workflow includes Try-Catch blocks to handle exceptions and ensure the process continues even if an error occurs.

**5. Logging** Log messages are included at the start and end of each workflow, as well as in the Catch blocks to log exceptions. The log level is set to ‘Info’ for normal execution and ‘Error’ for exceptions.

**6. Project Dependencies** The project requires the following packages: UiPath.Excel.Activities, UiPath.Mail.Activities, and UiPath.System.Activities.

**7. Deployment** The project is deployed to Orchestrator, where it can be scheduled to run at specific times or triggered by certain events. The robot is connected to Orchestrator and has the necessary permissions to access the Excel file and send emails. The email account used by the robot is configured in the Send Outlook Mail Message activity. The robot is also configured to run on a machine that has access to the online currency converter tool.

**8. Testing** The project is tested in a non-production environment before deployment. Test cases are created for each workflow and for the entire process. The test results are documented and any issues found are fixed before deployment.

**9. Maintenance** The project is monitored after deployment to ensure it is running as expected. Any issues found are fixed in a timely manner. The project is also updated as needed to accommodate changes in the process or the tools used.

**10. Conclusion** This automation process significantly reduces the time and effort required to perform the currency conversion tasks. It also eliminates the possibility of human error and ensures the tasks are performed consistently and accurately.