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TECHNICAL TEST - 2

Home task explanation

1. This document contains the basic information about:
 - a) clarifications about misleading information in the description of the user story;
 - b) some discovered issues during exploratory testing of the tested converter;
 - c) defining test cases for manual and test automation execution ;
 - d) test cases that were created in BDD style by Gherkin language;
 - e) test data. I described in detail how to manage the presented information in the tables of the current document;
 - f) information about defined conditions based on acceptance criteria;
 - g) tips and hints that can help to run a test project on the local machine;

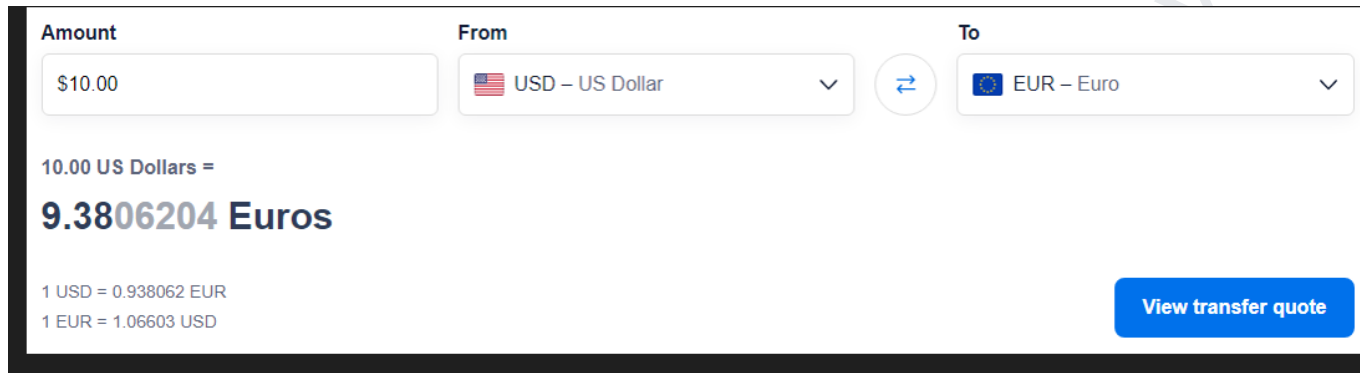
Next list is created by myself and contains next sections of the current document:

1. Task (updated)
2. User story (updated)
3. Acceptance Criteria (updated)
4. High-level test cases with short description
5. Manual tests (UI / web)
6. Test Project
7. Tests (manual & BDD-Gherkin)
8. Reference notes (section)

Task (original)

For the scope of this task, please note the following:

- You are to write a set of manual tests to validate the user story described below.
- The tests should be built to target the currency converter component (image at bottom) located at the following web page <https://www.xe.com/currencyconverter/>.



The screenshot shows the XE currency converter interface. It features three main input fields at the top: 'Amount' with a text box containing '\$10.00', 'From' with a dropdown menu showing 'USD - US Dollar' and a US flag, and 'To' with a dropdown menu showing 'EUR - Euro' and a European Union flag. A double-headed arrow icon is positioned between the 'From' and 'To' dropdowns. Below these fields, the text '10.00 US Dollars =' is displayed, followed by the converted amount '9.3806204 Euros' in a large, bold font. At the bottom left, the conversion rates are listed: '1 USD = 0.938062 EUR' and '1 EUR = 1.06603 USD'. A blue button labeled 'View transfer quote' is located at the bottom right.

- Your tests should **ensure that the currency converter functions correctly**, as described by the acceptance criteria below.
- Your tests have a focus on readability, efficiency and availability.

User story (original)

1. The currency conversion component that allows users to specify an amount, currencies, to obtain the converted value.
2. The calculator should specify the full amount conversion and the inverse conversion as well.
3. Conversion component allow users to swap currencies to run the inverse conversion.

Acceptance criteria (original)

1. User able to specify amounts, currency, and obtain conversion amount.
2. Whenever system provides conversion results, it should display the conversion amount, the conversion rate for both currencies.
3. User should be able to access a conversion page directly by specific API request

Task (updated)

User Story (updated)

As a User I should be able to perform conversions in a converter widget.

1. In this user story, we will build a currency conversion component that allows users:
 - a) to specify
 - i. a numeric amount,
 - ii. source currency
 - iii. target currency
 - b) obtain the converted value.
2. The calculator should clearly specify the full amount conversion as well as the single unit conversion for the currencies specified, and the inverse conversion as well.
3. Furthermore the component should allow users to swap the source and target currencies to run the inverse conversion.

Acceptance Criteria (updated)

I made some changes to the original AC that can help you to understand my workflow and some specific scenarios that I created for test execution. Also, I added some additional notes, pasted pictures, provided explanations on some specific points of AC.

1. User should be able to specify
 - a) numeric amount,
 - b) source currency
 - c) target currency,
2. User should be able to obtain conversion amount.
3. Users should be able to specify whole integers and decimal numeric amounts.
4. Whenever system provides conversion results, it should display the full conversion amount for the value specified as well as the conversion rate of a single unit for both currencies.
5. Users should be able to access a **conversion page directly by specifying the right query string parameters.**

High-level checklist with short description

After my investigation of the web platform, I added details based on the checked web app.

1. Expected business logic:
 - a. Conversion results are presented after clicking the “Convert” button at the first conversion.
 - b. Full conversion amount for the value specified for 1st and 2nd currencies
 - c. Both currency names are displayed and they are the same (names) as those selected in **From-To** section
 - d. **After editing the “Amount” field the “Convert” button should be gone!!!!**
2. The conversion values check
 - a. Values presented for the amount specified (e.g. 10 USD = 8.90909 EUR)
 - b. Check valid rounding.
 - c. When value is equal the 1 unit values should be **mathematically correct**. i.e. if 1 USD = 0.890909 EUR, then 10 USD should equate to 8.90909 EUR.
3. Error and service notifications check
 - a. If users specify negative numeric values, **an error message should be displayed but conversion happens anyway**.
4. If users specify non numeric values, the **system should give an error**.
 - a. “d”, “@!#\$@#\$”,
 - i. ERROR text: **Please enter a valid amount**
 - b. “+500”
 - i. NO ERROR, Not a bug
 - c. “++500”, “2+25”
 - i. **BUG** but LOW, convert form calculate nothing, just wait for the magic

- ii. NaN {source currency ISO code}{source currency country name}ERROR text: **Please enter a valid amount**

Amount F

Please enter a valid amount

NaN US Dollar =

0.00 Euros

1 USD = 0.946060 EUR

1 EUR = 1.05702 USD

NOTE: Converter behavior is not clear when a user enters a random string like \$12345.@12345%

 **Convert**

Amount

12,345.00 US Dollars =

5. The source and target currency dropdowns check

- list the **most popular currencies at the top of the dropdown**,
- and then list all other currencies in **alphabetical order**.

6. Source and target currencies swap check

- User should be able to swap source and target currencies by clicking the 'Invert Currencies' button. **Once the button is clicked on, the conversion is made.**

7. URI amount check

- Main test
 - Do any conversion (e.g. USD to EUR)
 - After completing the conversion URI should change the content.
Expected result

- a. Browser shows + “/convert/?Amount=5&From=USD&To=EUR” .
- b. Final base URL:

<https://www.xe.com/currencyconverter/convert/?Amount=5&From=USD&To=EUR>

- c. URI should not be replaced after entering any **WRONG** data into the amount field (text & negative & symbols)

8. 'Reverse' button' check

Do any conversion (e.g. 5 USD to 5 EUR) and then click on 'reverse' button

Expected result:

- a. Browser shows + “/convert/?Amount=5&From=EUR&To=USD” to the base URL
- b. Final URL <https://www.xe.com/currencyconverter/convert/?Amount=5&From=EUR&To=USD>

API tests

AC-5. Users should be able to access a **conversion page directly by specifying the right query string parameters.**

- 1. Main test (positive)
 - a. Modify URL
`https://www.xe.com/currencyconverter/convert/?Amount=<amount>&From=<source_currency>&To=<target_currency>`
 - i. Check the conversion result section, formats and values.
 - ii. Validate data on the page
- 2. Secondary tests (negative)
 - a. Modify URL using wrong parameters and check results
 - 1. Check the conversion result section, formats and values.
 - 2. Validate data on the page

Tests (manual & BDD-Gherkin)

Below is information for test case execution.

For all manual tests I have 'prerequisite steps':

1. Open currency converter page
2. Open 'Convert' tab if it was not selected

If you can't see 'Convert' button, please clear the browser cache or open tab in incognito mode

Table below contains test cases.

Test case name	TC index	Gherkin	TC steps	Expected result	Comments
Conversion form components validation	TC-1	Given converter components presented. And Amount field by default has placeholder in format [<source_currency_symbol> 1.00]. And top 5 countries for 'From' drop-down list are USD, EUR, GBP, CAD, AUD. And first currency in 'From' drop-down list is USD. And top 5 countries for 'To' drop-down list are USD, EUR, GBP, CAD, AUD. And first currency in 'To' drop-down list is EUR. And 'Convert' button appears. When user clicks 'Invert Currencies' button. Then selected <source_currency> changed to <target_currency>. When user clicks 'Convert' button. Then 'Convert' button disappears. And 'Conversion result section appears. And 'Track currency', 'View transfer quote' buttons appears.	Complete prerequisite steps. 1. Check that the next elements are presented on the page: - 'Amount', text field, - 'From', drop-down list , - Invert Currencies button, - 'To', drop-down list, - 'Convert' button. <i>NOTE:</i> Conversion result section should not be visible 2. Check that Amount field by default has placeholder in format [<source_currency_symbol> 1.00]. 3. Check that top 5 countries in the 'From' drop-down list are USD, EUR, GBP, CAD, AUD. <i>NOTE:</i> Full the list of currencies is available in the reference notes. 4. Check that top 5 countries in the 'To' drop-down list are USD, EUR, GBP, CAD, AUD. <i>NOTE:</i> Full the list of currencies is available in the reference notes. 5. 'Invert Currencies' button is clickable 6. 'Convert' button is clickable. 7. 'Track currency', 'View transfer quote' buttons appear after clicking 'Convert' button.	1. 'Amount', text field , 'From' and 'To' drop-down lists, 'Invert Currencies' and 'Convert' buttons presented on the converter form. Note: The conversion result section should not be visible. 2. Amount field by default has placeholder in format [<source_currency_symbol> 1.00]. 3. 5 top countries in the 'From' drop-down list are AUD, CAD, EUR, GBP, USD. 'Top 5' List of currencies is in the same order In the form. List all other currencies in alphabetical order. 4. 5 top countries in the 'To' drop-down list are AUD, CAD, EUR, GBP, USD. 'Top 5' List of currencies is in the same order In the form. List all other currencies in alphabetical order. 6. 'Invert Currencies' and 'Convert' button are clickable. 7. 'Invert Currencies' reverses selected <source_currency> to <target_currency> after clicking 'Convert' button. 8. 'Convert' button presents until user will not click it. After clicking on it form contains and will show only 'Track currency', 'View transfer quote' buttons and 'Conversion result section.	1. Check that all components presented and basic functions are working properly on the page when content was loaded.

Amount field verification	TC-2	Given converter components presented. When user selects any <source_currency>, from the 'From' list. And user selects any <target_currency>, from the 'To' list. And user enters into 'Amount' form <amount>. Then 'From' list shows <source_currency>. And 'To' list shows <target_currency>. And Amount field shows text in format [<source_currency_symbol> <amount>]. When user clicks 'Convert' button. Then 'Convert' button disappears. And 'Conversion result section appears. And first line of 'Conversion result section shows string: <conversion_result_source_amount> <source_currency_name> "=". And <conversion_result_source_amount> shows same integer number as in <amount> And <conversion_result_source_amount> shows same decimal number as in <amount> And <conversion_result_source_amount> shows 2 digits after coma. And second line of 'Conversion result section shows string: <conversion_result_converted_amount> <target_currency_name>. And <conversion_result_converted_amount> shows 6 decimal digits . And third line of 'Conversion result section shows string: ["1" <source_currency>_ISO_code> "="<conversion_result_converted_amount_i	Complete prerequisite steps. 1. Select any <source_currency>, from the 'From' list. 2. Select <target_currency>, from the 'To' list 3. Enter into 'Amount' form <amount>. 4. Click 'Convert' button. 5. Check results in the 'Conversion result section. 6. Click 'Invert Currencies' button. 7. Check results in the 'Conversion result section. 8. Repeat steps 3-7 using data from 'Amount test data' table.	1. <source_currency>, from the 'From' list selected. 2. <target_currency>, from the 'To' list selected. 3. Value entered into Amount field. 4. Entered value is displayed in format [<source_currency_symbol> <amount>]. 5. 'Convert' button clicked. It should disappear after clicking on it form contains and will show only 'Track currency', 'View transfer quote' buttons and 'Conversion result section. 6. 'Conversion result section shows string: mathematically correct information in proper format. 7. unit values should be mathematically correct. i.e. if 1 USD = 0.8.90909 EUR, then 10 USD should equate to 8.90909 EUR. 8. Conversion result section has next format and information: <u>1st line</u> A. [<conversion_result_source_amount> <source_currency_name> "="] B. <conversion_result_source_amount> shows 2 digits after coma. e.g. [10.00 US Dollars] <u>2nd line:</u> A. [<conversion_result_converted_amount> <target_currency_name>] B. <conversion_result_converted_amount> shows 6 digits after coma. 2 black , + next 4 in gray color. e.g. [55.123456 Dollars] <u>3rd line</u> A. ["1" <source_currency>_ISO_code> "="<conversion_result_converted_amount_in_<target_currency><target_currency>_ISO_code>] B. All text displays in gray color. e.g. [1 USD = 100 GBP] <u>4th line</u>	1. Related to TC-3, TC-4 2. Steps to reproduce contains aliases and the final decision about test data and how many iterations should be completed should be accepted after QA team discussion. 3. Table of test data in the reference section. 4. Information that provided in the round brackets should be calculated manually or by getting conversion rate , in case of automated tests
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		n_<target_currency><target_currency>_ISO_code>]. And fourth line of 'Conversion result section shows string: ["1" <target_currency>_ISO_code> "<conversion_result_converted_amount_in_<source_currency><source_currency>_ISO_code>"]. And 'Track currency', 'View transfer quote' buttons appears. When user clicks 'Invert Currencies' button. Then 'From' list shows <target_currency>. And 'To' list shows <source_currency>. And Amount field shows text in format [<target_currency><source_currency_symbol> <amount>].		A. ["1" <target_currency>_ISO_code> "<conversion_result_converted_amount_in_<source_currency><source_currency>_ISO_code>"] B. All text displays in gray color 9. 'Reverse' button clicked , source and <target_currency> replaced. 10. 'Conversion result section shows string: mathematically correct information in proper format according to actual result in p.5 11. New URL should be like: <a href="https://www.xe.com/currencyconverter/convert/?Amount=5&From=<source_currency>&To=<target_currency>">https://www.xe.com/currencyconverter/convert/?Amount=5&From=<source_currency>&To=<target_currency> e.g. : https://www.xe.com/currencyconverter/convert/?Amount=5&From=USD&To=EUR	
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Single currency conversion without reversing	TC-3	Given converter components presented. When user selects any <source_currency>, from the 'From' list. And user selects any <target_currency>, from the 'To' list. And user enters into 'Amount' form <amount>. Then Amount field has placeholder in format "<code><source_currency_symbol></code> "1.00". When user enters into 'Amount' form <amount>. Then Amount field has text in format [<code><source_currency_symbol></code> <amount>] When user clicks "Convert" button. Then No errors on the form. And 'Convert' button disappears. And 'Conversion result section appears. And first line of 'Conversion result section shows string: <conversion_result_source_amount> <source_currency_name> "=". And <conversion_result_source_amount> shows same integer number as in <amount> And <conversion_result_source_amount> shows same decimal number as in <amount>	Complete prerequisite steps. 1. Select from the 'From' list <source_currency_name> currency. 2. Select from the 'To' list <target_currency_name> currency. 3. Enter into 'Amount' form <amount>. 4. Click 'Convert' button. 5. Check results in the 'Conversion result section.	1. <source_currency_name>, from the 'From' list selected. 2. Amount was entered. Entered value is displaying in format [<code><source_currency_symbol></code> <amount>] 3. <target_currency_name>, from the 'To' list selected. 4. 'Convert' button clicked. It should disappear after clicking on it. 5. The form contains and will show only 'Track currency', 'View transfer quote' buttons and 'Conversion result section. 6. No errors on the form. 7. 'Conversion result section shows string: mathematically correct information in proper format. 8. 1 unit values should be mathematically correct. i.e. if 1 USD = 0.8.90909 EUR, then 10 USD should equate to 8.90909 EUR. 9. Conversion result section format: <u>1st line</u> A. [<code><conversion_result_source_amount></code> <source_currency_name> "="] B. <conversion_result_source_amount> shows 2 digits after coma. e.g. [10.00 US Dollars =] <u>2nd line:</u> A. [<code><conversion_result_converted_amount></code><target_currency_name>] B. <conversion_result_converted_amount> shows 6 digits after coma. 2 black , + next 4 in gray color. e.g. [55.123456 Dollars] <u>3rd line</u> A. ["1" <source_currency>_ISO_code> "="<conversion_result_converted_amount_in_target_currency><target_currency>_ISO_code>] B. All text displays in gray color e.g. [1 USD = 100 GBP] <u>4th line</u>	1. Steps to reproduce contains aliases and the final decision about test data and how many iterations should be completed should be accepted after QA team discussion. 2. Table of test data in the reference section. 3. Information that provided in the round brackets should be calculated manually or by getting conversion rate , in case of automated tests. 4. Table of test data in the reference section. 5. Information that provided in the round brackets should be calculated manually or by getting conversion rate , in case of automated tests
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	And <conversion_result_source_amount> shows 2 digits after coma. And second line of 'Conversion result section shows string: <conversion_result_converted_amount> <target_currency_name>. And <conversion_result_converted_amount> shows 6 decimal digits . And third line of 'Conversion result section shows string: ["1" <source_currency>_ISO_code> "="<conversion_result_converted_amount_in_<target_currency><target_currency>_ISO_code>]. And fourth line of 'Conversion result section shows string: ["1" <target_currency>_ISO_code> "="<conversion_result_converted_amount_in_<source_currency><source_currency>_ISO_code>]. And 'Track currency', 'View transfer quote' buttons appears. And browser URL shows string : <a href="https://www.xe.com/currencyconverter/convert/?Amount=5&From=<source_currency>&To=<target_currency>">https://www.xe.com/currencyconverter/convert/?Amount=5&From=<source_currency>&To=<target_currency>	A. ["1" <target_currency>_ISO_code> "="<conversion_result_converted_amount_in_<source_currency><source_currency>_ISO_code>] B. All text displays in gray color e.g. [55.123456 Dollars] 10. After completing the conversion URI should change the content. 8. New URL should be like: <a href="https://www.xe.com/currencyconverter/convert/?Amount=5&From=<source_currency>&To=<target_currency>">https://www.xe.com/currencyconverter/convert/?Amount=5&From=<source_currency>&To=<target_currency> e.g. : https://www.xe.com/currencyconverter/convert/?Amount=5&From=USD&To=EUR
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Single currency conversion with reversing	TC-4	Complete prerequisite steps. 1. Enter into 'Amount' form <amount>. 2. Select 1st currency - <source_currency_name>, from the 'From' list. 3. Select 2nd currency - <target_currency_name>, from the 'To' list. 4. Click 'Convert' button. 5. Check results in the 'Conversion result section. 6. Click 'Reverse' button. 7. Check results in the 'Conversion result section.	1. Amount was entered. Entered value is displaying in format <source_currency_symbol><amount>] 2. <source_currency_name>, from the 'From' list selected. 3. <target_currency_name>, from the 'To' list selected. 4. 'Convert' button clicked. It should disappear after clicking on it form contains and will show only 'Track currency', 'View transfer quote' buttons and 'Conversion result section. 5. 'Conversion result section shows string: mathematically correct information in proper format. 6. 1 unit values should be mathematically correct. i.e. if 1 USD = 0.8.90909 EUR, then 10 USD should equate to 8.90909 EUR. 7. Conversion result section format: <u>1st line</u> [<conversion_result_source_amount> <source_currency_name> "="] - <conversion_result_source_amount> shows 2 digits after coma e.g. [10.00 US Dollars =] <u>2nd line:</u> [<conversion_result_converted_amount><target_currency_name>] - <conversion_result_converted_amount> shows 6 digits after coma. 2 black , + next 4 in gray color. e.g. [55.123456 Dollars] <u>3rd line</u> ["1" <source_currency>_ISO_code "="<conversion_result_converted_amount_in_<target_currency><target_currency>_ISO_code>] - all text displays in gray color e.g. [1 USD = 100 GBP] <u>4th line</u> ["1" <target_currency>_ISO_code "="<conversion_result_converted_amount_in_<source_currency><source_currency>_ISO_code>] - all text displays in gray color e.g. [1 GBP = 0.01 USD]	1. Related to TC-2 2. Steps to reproduce contains aliases and the final decision about test data and how many iterations should be completed should be accepted after QA team discussion. 3. Table of test data in the reference section. 4. Information that provided in the round brackets should be calculated manually or by getting conversion rate , in case of automated tests
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				8. 'Reverse' button clicked , source and <target_currency> replaced. 9. 'Conversion result section shows string: mathematically correct information in proper format according to actual result in p.5. 10. New URL should be like: https://www.xe.com/currencyconverter/convert/?Amount=5&From=<source_currency>&To=<target_currency> e.g. : https://www.xe.com/currencyconverter/convert/?Amount=5&From=USD&To=EUR	
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Completed by Roman Denisov

Multiple currency conversions without reversing	TC-5		Complete prerequisite steps. 1. Enter into 'Amount' form <amount>. 2. Select 1st currency - <source_currency_name>, from the 'From' list. 3. Select 2nd currency <target_currency_name>, from the 'To' list. 4. Click 'Convert' button. 5. Check results in the 'Conversion result section. 6. Change source and target currencies. 7. Check results in the 'Conversion result section..	1. Amount was entered. Entered value is displaying in format "\$ <amount>". 2. <source_currency_name>, from the 'From' list selected. 3. <target_currency_name>, from the 'To' list selected. 4. 'Convert' button clicked. It should disappear after clicking on it form contains and will show only 'Track currency', 'View transfer quote' buttons and 'Conversion result section. 5. 'Conversion result section shows string: mathematically correct information in proper format. 1 unit values should be mathematically correct. i.e. if 1 USD = 0.8.90909 EUR, then 10 USD should equate to 8.90909 EUR. 6. Conversion result section format: <u>1st line</u> [<conversion_result_source_amount> <source_currency_name> "="] - <conversion_result_source_amount> shows 2 digits after coma e.g. [10.00 US Dollars =] <u>2nd line:</u> [<conversion_result_converted_amount><target_currency_name>] - <conversion_result_converted_amount> shows 6 digits after coma. 2 black , + next 4 in gray color. e.g. [55.123456 Dollars] <u>3rd line</u> ["1" <source_currency>_ISO_code> "="<conversion_result_converted_amount_in_<target_currency><target_currency>_ISO_code>] - all text displays in gray color e.g. [1 USD = 100 GBP] <u>4th line</u> ["1" <target_currency>_ISO_code> "="<conversion_result_converted_amount_in_<source_currency><source_currency>_ISO_code>] - all text displays in gray color E.g. [1 GBP = 0.01 USD] 6. After first conversion, next one should be executed automatically. No need to click any buttons.	1. Related to TC-2. 2. Steps to reproduce contains aliases and the final decision about test data and how many iterations should be completed should be accepted after QA team discussion. 3. Table of test data in the reference section 1. 4. Information that provided in the round brackets should be calculated manually or by getting conversion rate, in case of automated tests
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Multiple currency conversions with reversing	TC-6		Complete prerequisite steps. 1. Enter into 'Amount' form <amount>. 2. Select 1st currency - <source_currency_name>, from the 'From' list. 3. Select 2nd currency - <target_currency_name>, from the 'To' list. 4. Click 'Convert' button. 5. Check results in the 'Conversion result section. 6. Click 'Reverse' button. 7. Check results in the 'Conversion result section. 8. Change source and target currencies. 9. Enter different amount. 9. Check results in the 'Conversion result section..	1. Amount was entered. Entered value is displayed in format "\$ <amount>". 2. <source_currency_name>, from the 'From' list selected. 3. <target_currency_name>, from the 'To' list selected. 4. 'Convert' button clicked. It should disappear after clicking on it form contains and will show only 'Track currency', 'View transfer quote' buttons and 'Conversion result section. 5. 'Conversion result section shows string: mathematically correct information in proper format. 6. 1 unit values should be mathematically correct. i.e. if 1 USD = 0.8.90909 EUR, then 10 USD should equate to 8.90909 EUR. 7. Conversion result section format: <u>1st line</u> [<conversion_result_source_amount> <source_currency_name> "="] - <conversion_result_source_amount> shows 2 digits after coma e.g. [10.00 US Dollars =] <u>2nd line:</u> [<conversion_result_converted_amount><target_currency_name>] - <conversion_result_converted_amount> shows 6 digits after coma. 2 black, + next 4 in gray color. e.g. [55.123456 Dollars] <u>3rd line</u> ["1" <source_currency>_ISO_code "="<conversion_result_converted_amount_in_<target_currency><target_currency>_ISO_code>] - all text displays in gray color e.g. [1 USD = 100 GBP] <u>4th line</u> ["1" <target_currency>_ISO_code "="<conversion_result_converted_amount_in_<source_currency><source_currency>_ISO_code>] - all text displays in gray color E.g. [1 GBP = 0.01 USD]	1. Related to TC-3
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				8. After first conversion, next one should be executed automatically. No need to click any buttons.	
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Completed by Roman Denysenko

Requesting conversion via direct URL request	TC-7		1. Edit and copy URL: <a href="https://www.xe.com/currencyconverter/convert/?Amount=<amount>&From=<source_currency>&To=<target_currency>">https://www.xe.com/currencyconverter/convert/?Amount=<amount>&From=<source_currency>&To=<target_currency> 2. Paste it into browser address line and send request by hitting enter button. 3. Check results in the 'Conversion result section'.	1. Browser loads the page with conversions result after sending request. 2. 'Conversion result section shows string: mathematically correct information in proper format. 3. 1 unit values should be mathematically correct. i.e. if 1 USD = 0.8.90909 EUR, then 10 USD should equate to 8.90909 EUR. 4. Conversion result section format: <u>1st line</u> [<conversion_result_source_amount> <source_currency_name> "="] - <conversion_result_source_amount> shows 2 digits after coma e.g. [10.00 US Dollars =] <u>2nd line:</u> [<conversion_result_converted_amount><target_currency_name>] - <conversion_result_converted_amount> shows 6 digits after coma. 2 black, + next 4 in gray color. e.g. [55.123456 Dollars] <u>3rd line</u> ["1" <source_currency>_ISO_code> "="<conversion_result_converted_amount_in_target_currency><target_currency>_ISO_code>] - all text displays in gray color e.g. [1 USD = 100 GBP] <u>4th line</u> ["1" <target_currency>_ISO_code> "="<conversion_result_converted_amount_in_source_currency><source_currency>_ISO_code>] - all text displays in gray color E.g. [1 GBP = 0.01 USD] 5. 'Conversion result section shows string: mathematically correct information in proper format according to actual result in p.5 6. New URL should be like: <a href="https://www.xe.com/currencyconverter/convert/?Amount=5&From=<source_currency>&To=<target_currency>">https://www.xe.com/currencyconverter/convert/?Amount=5&From=<source_currency>&To=<target_currency> e.g. https://www.xe.com/currencyconverter/convert/?Amount=5&From=USD&To=EUR	1. Use test data in the reference section for editing tested URL
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Reference notes

1. List of top currencies

USD , EUR, GBP, CAD, AUD, JPY, INR, NZD, CHF, ZAR

2. Missing details or misleading in AC

1. Related to AC-1.

a) Min and max amount of entered symbols (numeric amount) is not specified.

2. Related to AC-2

a) Min and max amount of entered symbols (integers and decimal numeric amounts) is not specified.

i. Accept that amount field allows to enter

1. for integers

a) min: 1 symbol ,

b) max : 16 symbols. More then 15 symbols, e.g. 16th make an unexpected behavior of the form. It can be a feature.

i. For instance **9999999999999999** and **9999999999999999**

15th - "9" =OK

Amount	From
\$9999999999999999	 USD – US Dollar

999,999,999,999,999.00 US Dollars =

946,809,919,699,999.00 Euros

1 USD = 0.946810 EUR
1 EUR = 1.05618 USD

16th - "9" = !ok

Amount	From
\$99999999999999999	 USD – US Dollar

10,000,000,000,000,000.00 US Dollars =

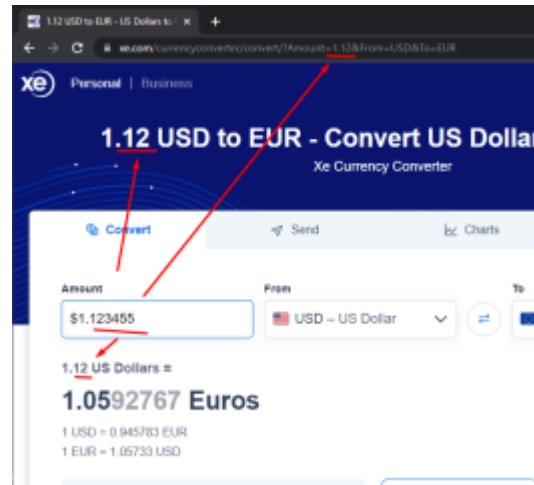
9,468,099,197,000,000.00 Euros

1 USD = 0.946810 EUR

2. For decimals

a) min: 1 symbol ,

b) max : 2 symbols. API request uses only two decimal digits. Confirmed on the converter page



3. Related to AC-3 .

a) Format for displaying conversion result is not specified. Assume that data is correct in the expected result sections of created test cases.

4. Related to AC-5 .

- a) Explanation for “ list the most popular currencies” is not clear. Assume that it’s a first 10 currencies in the ‘From’ list when user opens the page in incognito mode.
- b) Alphabetical order for currencies is applicable based on currency code or not? If not, we have currency name and country name for each item in the currency drop-downs

5. Related to AC-6 .

a) There is no information about error message and conversion flow. Assume that conversion should not be happened, conversion result format is the same as for positive scenario. Please check details in the “Table - 1 . Notification and error behavior of conversion form”.

4. Related to AC-7 .

- a) There is no information about error message and conversion flow., rules for getting number from the string that contains mix of digits and special characters. Assume that conversion should not be happened. Check details in the “Table - 1 . Notification and error behavior of conversion form” and the form should show error message when entered value has at least one special character after valid number (numbers in acceptable range)

Test data

Table - 1 . Notification and error behavior of conversion form

#		Conversion action	Error	Error message	Conversion result	Comments
1	positive numeric values	conversion happens anyway.	No	n/a	1 US Dollar = 1.05788 Euros 1 USD = 0.945284 EUR 1 EUR = 1.05788 USD	1. Assume that - amount: 1.00 - source currency : USD - target currency: EUR 2. Format of conversion result is available in TC-2
2	negative numeric values	conversion happens anyway.	Yes	Please enter a amount greater then 0	-1 US Dollar = 0.945284 Euros 1 USD = 0.9481971 EUR 1 EUR = 1.05728 USD	1. Assume that - amount: 1.00 - source currency : USD - target currency: EUR 2. Format of conversion result is available in TC-2
3	non numeric values	Conversion not happens	Yes	Please enter a valid amount	NaN US Dollar = 0.00 Euros 1 USD = 0.9481971 EUR 1 EUR = 1.05728 USD	1. Assume that - amount: 1.00 - source currency : USD - target currency: EUR 2. Format of conversion result is available in TC-2

Table - 2. List of symbols for testing amount field.

#	type	List of symbols	comments
1	Special characters	!"#\$%&'()*+,-./:;<=>?@[\\]^_`{ }~	All characters except math signs from #3
2	digits	Range digits from 0 to 9	
3	Math signs	"+", "-"	1. There are special cases for validation amount field. 2. Form allows to enter amount with at least one plus or minus sign

Table - 3. Data sets for testing the amount field

Based on AC 'Amount' form accepts next data:

1. Positive numbers
2. Negative numbers
3. Non numeric values

		Valid		Invalid	
	Limit and range	Rule	Data set / range	Rule	Data set(s)
positive / negative numbers	positive Max: 99999999999999.99 Min:0.004999999999999999 negative Max: 0.004999999999999999 - Min:-99999999999999.99	1. Only Numbers 2. Less than the limit (N) 3. Enter the value within the limit (N + 1)/2 4. Any number in the limit with plus sign 5. Null value	99999999999999.99, 0.0001, 500000000000000.495 , 100, +125.55, 0	1. More than the limit (N + 1) 2. Numbers with precision 3. Negative Integers 4. Only Alphabets 5. Numbers + Math sign 6. Numbers + Special Characters	100000000000000.99, 12345.12345, -12345.12345, 12345.12345+, 12345.12345%

Non numeric values	!"#\$%&'()*+,-./:;<=>?@[\\]^_`{ }~	N/A	N/A	1. Minimum amount of acceptable characters. 2. Amount of characters within the limits of available characters 3. Maximum amount of acceptable characters.	Note: All sets are in the square brackets. [#], [_ `{ } ~], [! " # \$ % & ' () * + , - . / :]
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Table - 4 . List of symbols for testing amount field

#		special characters	digits	math signs
1	special characters	special characters / special characters	digits / special characters	math signs / special characters
2	digits	digits / special characters	digits / digits	digits / math signs
3	math signs	math signs / special characters	math signs / digits	math signs / math signs

Here is a combination of sets for making test data for all potential cases.

#		special characters	digits	math signs
1	special characters	Set-1	Set-4	Set-7
2	digits	Set-2	Set-5	Set-8
3	Math signs	Set-3	Set-6	Set-9

Table - 5. Top currencies from the converter drop-down list.

CurrencyISOCodes	CurrencyNames
USD	US Dollar
GBP	British pound
EUR	Euro
CAD	Canadian Dollar
AUD	Australian Dollar
JPY	Japanese Yen
INR	Indian Rupee
NZD	New Zealand Dollar
CHF	Swiss Franc
ZAR	South Africa Rand
RUB	Russian Ruble

Table - 6. List of all country ISO codes and country names:

#	country ISO code	country name		#	country ISO code	country name		#	country ISO code	country name
1	BD	Bangladesh		86	ZA	South Africa		171	SR	Suriname

2	BE	Belgium		87	EC	Ecuador		172	KI	Kiribati
3	BF	Burkina Faso		88	IT	Italy		173	KH	Cambodia
4	BG	Bulgaria		89	VN	Vietnam		174	KN	Saint Kitts and Nevis
5	BA	Bosnia and Herzegovina		90	SB	Solomon Islands		175	KM	Comoros
6	BB	Barbados		91	ET	Ethiopia		176	ST	Sao Tome and Principe
7	WF	Wallis and Futuna		92	SO	Somalia		177	SK	Slovakia
8	BL	Saint Barthelemy		93	ZW	Zimbabwe		178	KR	South Korea
9	BM	Bermuda		94	SA	Saudi Arabia		179	SI	Slovenia
10	BN	Brunei		95	ES	Spain		180	KP	North Korea
11	BO	Bolivia		96	ER	Eritrea		181	KW	Kuwait
12	BH	Bahrain		97	ME	Montenegro		182	SN	Senegal
13	BI	Burundi		98	MD	Moldova		183	SM	San Marino
14	BJ	Benin		99	MG	Madagascar		184	SL	Sierra Leone
15	BT	Bhutan		100	MF	Saint Martin		185	SC	Seychelles
16	JM	Jamaica		101	MA	Morocco		186	KZ	Kazakhstan
17	BV	Bouvet Island		102	MC	Monaco		187	KY	Cayman Islands
18	BW	Botswana		103	UZ	Uzbekistan		188	SG	Singapore
19	WS	Samoa		104	MM	Myanmar		189	SE	Sweden
20	BQ	Bonaire Saint Eustatius and Saba		105	ML	Mali		190	SD	Sudan
21	BR	Brazil		106	MO	Macao		191	DO	Dominican Republic
22	BS	Bahamas		107	MN	Mongolia		192	DM	Dominica
23	JE	Jersey		108	MH	Marshall Islands		193	DJ	Djibouti
24	BY	Belarus		109	MK	Macedonia		194	DK	Denmark
25	BZ	Belize		110	MU	Mauritius		195	VG	British Virgin Islands
26	RU	Russia		111	MT	Malta		196	DE	Germany
27	RW	Rwanda		112	MW	Malawi		197	YE	Yemen
28	RS	Serbia		113	MV	Maldives		198	DZ	Algeria
29	TL	East Timor		114	MQ	Martinique		199	US	United States

30	RE	Reunion		115	MP	Northern Mariana Islands		200	UY	Uruguay
31	TM	Turkmenistan		116	MS	Montserrat		201	YT	Mayotte
32	TJ	Tajikistan		117	MR	Mauritania		202	UM	United States Minor Outlying Islands
33	RO	Romania		118	IM	Isle of Man		203	LB	Lebanon
34	TK	Tokelau		119	UG	Uganda		204	LC	Saint Lucia
35	GW	Guinea-Bissau		120	TZ	Tanzania		205	LA	Laos
36	GU	Guam		121	MY	Malaysia		206	TV	Tuvalu
37	GT	Guatemala		122	MX	Mexico		207	TW	Taiwan
38	GS	South Georgia and the South Sandwich Islands		123	IL	Israel		208	TT	Trinidad and Tobago
39	GR	Greece		124	FR	France		209	TR	Turkey
40	GQ	Equatorial Guinea		125	IO	British Indian Ocean Territory		210	LK	Sri Lanka
41	GP	Guadeloupe		126	SH	Saint Helena		211	LI	Liechtenstein
42	JP	Japan		127	FI	Finland		212	LV	Latvia
43	GY	Guyana		128	FJ	Fiji		213	TO	Tonga
44	GG	Guernsey		129	FK	Falkland Islands		214	LT	Lithuania
45	GF	French Guiana		130	FM	Micronesia		215	LU	Luxembourg
46	GE	Georgia		131	FO	Faroe Islands		216	LR	Liberia
47	GD	Grenada		132	NI	Nicaragua		217	LS	Lesotho
48	GB	United Kingdom		133	NL	Netherlands		218	TH	Thailand
49	GA	Gabon		134	NO	Norway		219	TF	French Southern Territories
50	SV	El Salvador		135	NA	Namibia		220	TG	Togo
51	GN	Guinea		136	VU	Vanuatu		221	TD	Chad
52	GM	Gambia		137	NC	New Caledonia		222	TC	Turks and Caicos Islands
53	GL	Greenland		138	NE	Niger		223	LY	Libya

54	GI	Gibraltar		139	NF	Norfolk Island		224	VA	Vatican
55	GH	Ghana		140	NG	Nigeria		225	VC	Saint Vincent and the Grenadines
56	OM	Oman		141	NZ	New Zealand		226	AE	United Arab Emirates
57	TN	Tunisia		142	NP	Nepal		227	AD	Andorra
58	JO	Jordan		143	NR	Nauru		228	AG	Antigua and Barbuda
59	HR	Croatia		144	NU	Niue		229	AF	Afghanistan
60	HT	Haiti		145	CK	Cook Islands		230	AI	Anguilla
61	HU	Hungary		146	XK	Kosovo		231	VI	U.S. Virgin Islands
62	HK	Hong Kong		147	CI	Ivory Coast		232	IS	Iceland
63	HN	Honduras		148	CH	Switzerland		233	IR	Iran
64	HM	Heard Island and McDonald Islands		149	CO	Colombia		234	AM	Armenia
65	VE	Venezuela		150	CN	China		235	AL	Albania
66	PR	Puerto Rico		151	CM	Cameroon		236	AO	Angola
67	PS	Palestinian Territory		152	CL	Chile		237	AQ	Antarctica
68	PW	Palau		153	CC	Cocos Islands		238	AS	American Samoa
69	PT	Portugal		154	CA	Canada		239	AR	Argentina
70	SJ	Svalbard and Jan Mayen		155	CG	Republic of the Congo		240	AU	Australia
71	PY	Paraguay		156	CF	Central African Republic		241	AT	Austria
72	IQ	Iraq		157	CD	Democratic Republic of the Congo		242	AW	Aruba
73	PA	Panama		158	CZ	Czech Republic		243	IN	India
74	PF	French Polynesia		159	CY	Cyprus		244	AX	Aland Islands
75	PG	Papua New Guinea		160	CX	Christmas Island		245	AZ	Azerbaijan
76	PE	Peru		161	CR	Costa Rica		246	IE	Ireland
77	PK	Pakistan		162	CW	Curacao		247	ID	Indonesia
78	PH	Philippines		163	CV	Cape Verde		248	UA	Ukraine
79	PN	Pitcairn		164	CU	Cuba		249	QA	Qatar

80	PL	Poland		165	SZ	Swaziland		250	MZ	Mozambique
81	PM	Saint Pierre and Miquelon		166	SY	Syria				
82	ZM	Zambia		167	SX	Sint Maarten				
83	EH	Western Sahara		168	KG	Kyrgyzstan				
84	EE	Estonia		169	KE	Kenya				
85	EG	Egypt		170	SS	South Sudan				

Currency symbols

Dollar - \$

Euro - €

Pound Sterling – £

Yen – ¥

Franc – ₣

Rupee – ₹

Dinar – د.ك