

PayPal Application Engineer Node Take Home Exercise

The exercise requires you to implement:

- a node module that will help with currency conversion
- a web app using node.js that will support displaying a page with paypal transactions + apis to support currency conversion.
- unit testing to ensure that the node module + web app are bug free.

The purpose of this exercise is to give you an opportunity to demonstrate your engineering knowledge as well as your familiarity and experience with JavaScript and Node.js.

Additionally, in an interview setting, it will provide a centerpiece for a discussion about your thought process and architecture applied in this engineering exercise. Our hope is that this exercise can replace much of the “white-board coding” that is typical in engineering interviews.

While we’ve tried to provide clear instruction, please don’t hesitate to reach out with any questions you have about implementing this take-home exercise.

Common Questions

What about Interaction X?

Generally speaking, some of the instruction on this exercise has been left purposely vague. We want to see you make some decisions about how things should work.

Can I use libraries or frameworks?

You may use whatever you feel will help you get the job done. However, a word of caution: as the purpose of this exercise is to demonstrate *your* knowledge, the more 3rd party code utilized, the less effective the take-home will be for it’s stated purpose. Use your judgment.

What platforms do I need to support?

For simplicity, this exercise will only be evaluated in the most recent versions of Google Chrome and Node.js

Exercise

The Module

- Will need to talk to a public api that will help figure out conversion rate given the currency code (e.g. : 'USD', 'EUR', 'INR')
- Will need to have a static store of conversion rates in a file
- Conversion rates can be rounded to 2 decimal points.
- Currency Code needs a mapping to the currency symbol as well in the file
- The module should be configurable such that it could either look up the file for conversion rates or could talk to a public api to get the live conversion rates. You could use something like from this site for the live update <https://openexchangerates.org/>
- On talking to a live api to get a conversion rate, it should automatically update the file with the latest conversion rate for the looked up currency. The file with currency conversions need to be in following format:

USD=\$ 1.00

EUR=€ 0.74

CAD=\$ 1.10

CNY=元 6.05

INR=₹ 61.62

The App

The app should have the following functionality:

/paypal/activity : Displays transaction history

Transaction History

01/10/2014	Purchase: Macys	\$ 99.99
01/02/2014	Purchase: Home Depot	\$ 150.15
12/31/2013	Transfer: Wells Fargo	\$ 350.00
12/15/2013	Purchase: Jamba Juice	\$ 2.30
11/01/2013	Refund: DSW shoes	\$ 75.45
10/20/2013	Purchase: DSW shoes	\$ 75.45
10/05/2013	Purchase: Jamba Juice	\$ 3.00
10/02/2013	Transfer: Wells Fargo	\$ 2.75

/paypal/currencyConversion : Converts an amount from a currency to another.

input: Amount, the currency code for the amount, the currency code it needs to be converted to

returns: the amount, the currency code for the amount, the currency symbol

/paypal/conversionRate : Gives the conversion rate for a currency

input: CurrencyCode to convert from, Currency code to convert to

returns: the conversion rate

Ideas for Expansion

The above exercise is sufficient for us to begin our conversation. However, if you're interested, we encourage you to think about ways in which you can expand the scope of what we've provided here and implement (or, at least, be prepared to discuss how you would implement) any ideas that you find particularly interesting or you believe would showcase your talents and skills.

An obvious example would be to hook up the conversion apis to the transaction page by implementing a drop down in the UI to dynamically view each transaction amount in any currency as shown below.

Transaction History

01/10/2014	Purchase: Macys	USD ▼	\$ 99.99
		USD	\$
		INR	₹
01/02/2014	Purchase: Home Dep	CAD	\$ 1.15
		CNY	元
		EUR	€
12/31/2013	Transfer: Wells Fargo		\$ 350.00
12/15/2013	Purchase: Jamba Juice		\$ 2.30
11/01/2013	Refund: DSW shoes		\$ 75.45
10/20/2013	Purchase: DSW shoes		\$ 75.45
10/05/2013	Purchase: Jamba Juice		\$ 3.00
10/02/2013	Transfer: Wells Fargo		\$ 2.75