Goals

Flow will:

Give you a view of the IRS's transcript of your taxes.

Suggest means of improving your finances based on the lines of your tax return.

Explain changes the IRS made from the return you filed, if any.

Help you find out what your taxes could be like if there were changes in your life, like marrying, buying a house, or having a child.

The design should:

Be based on tax law.

Be flexible: a wage-earner with no tax complications and the President of the United States should both get a clean representation of their tax returns.
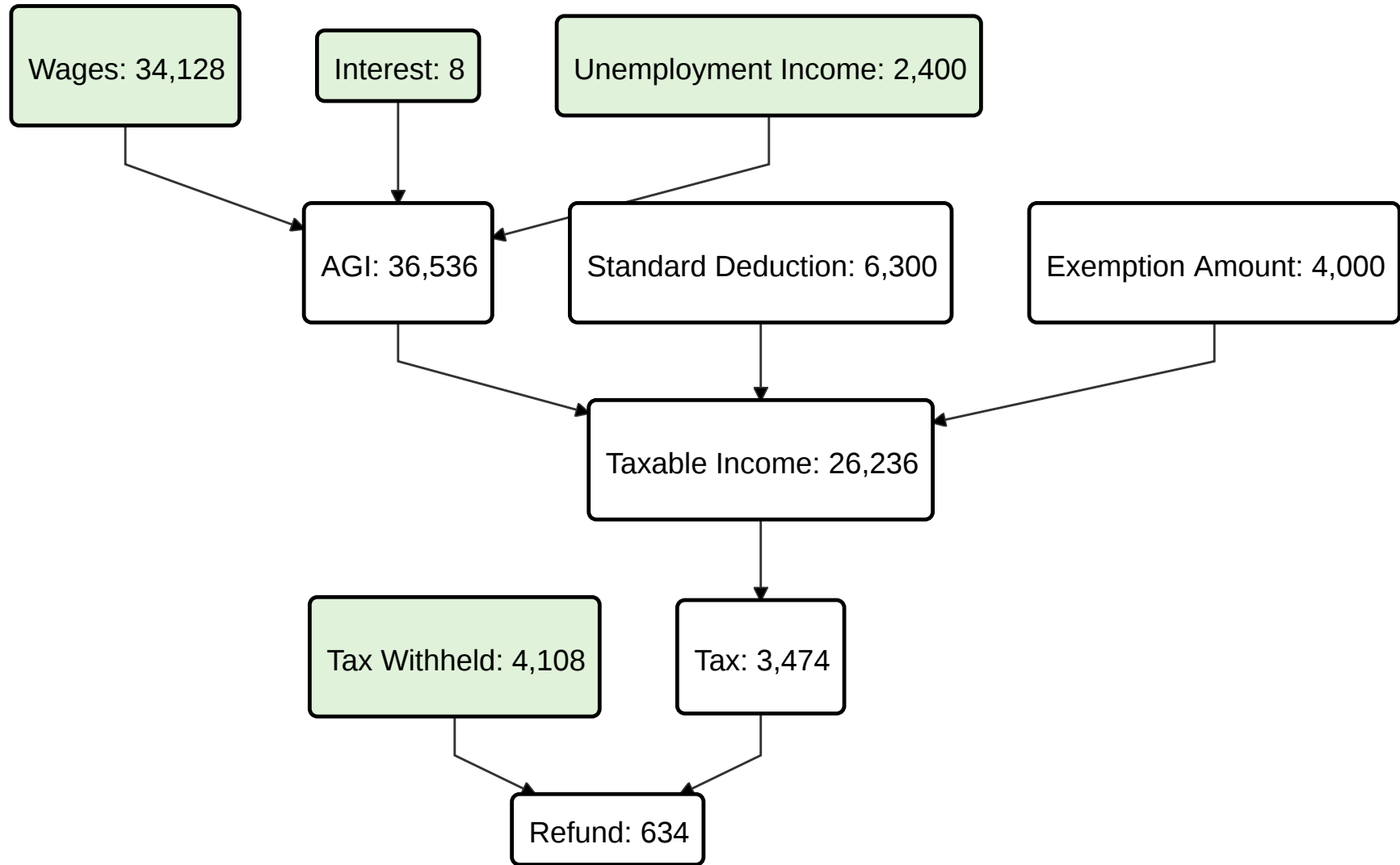
Keep it simple: the core visualization in Flow is a flowchart like those taught in elementary school curricula.

Keep it simple: stick to a no-frills design appropriate to serious and sometimes distressing financial matters.

Keep it simple: browsing the web on a phone with a cheap data plan can be like using a modem from 1995, so Flow uses graphics sparingly.
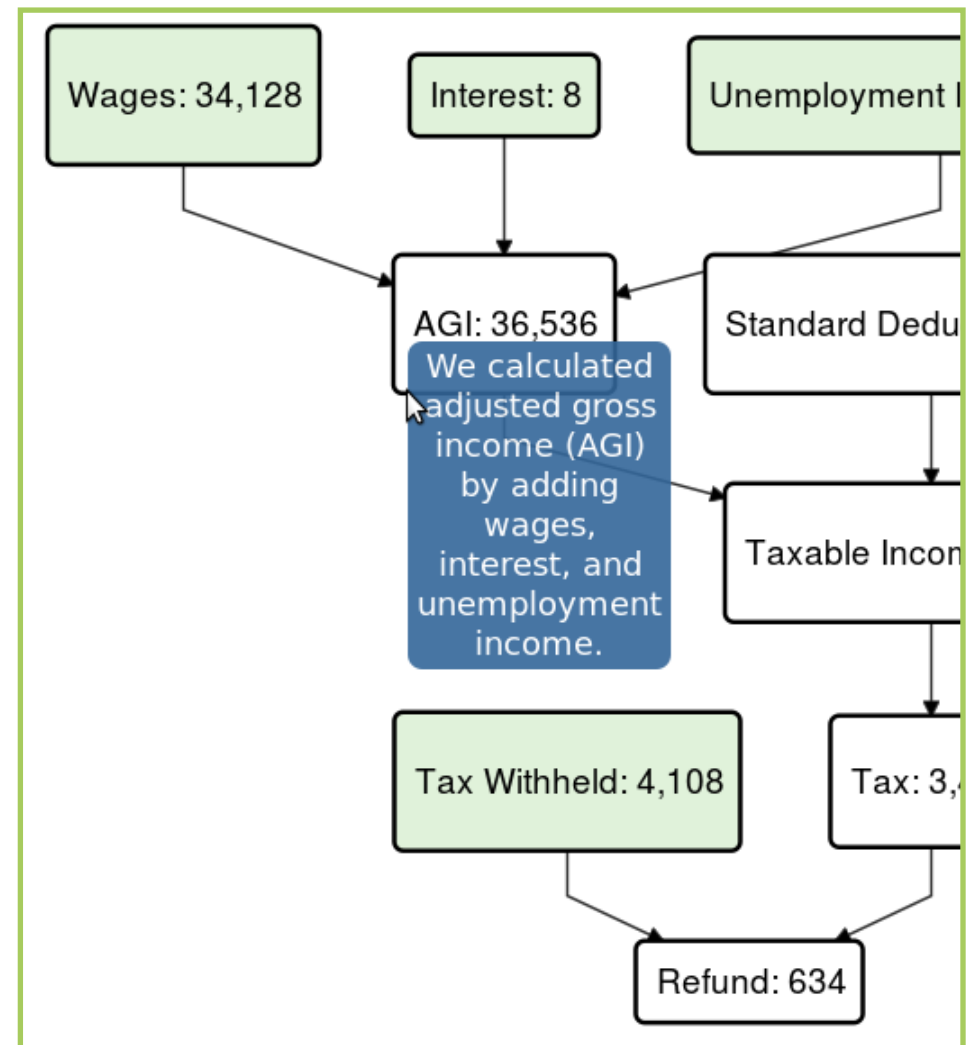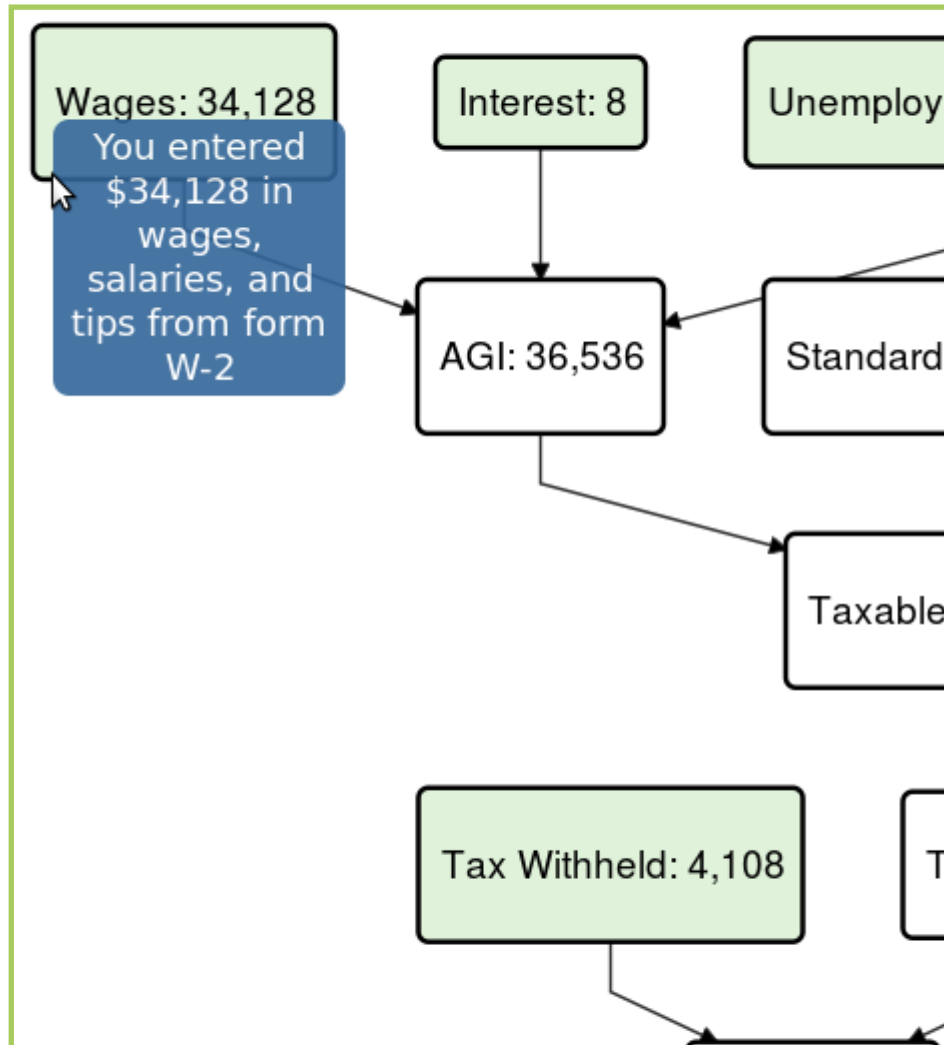
Keep it simple: hiding, revealing, and other dynamic features put up barriers to users who rely on assistive devices—or who are just using the "wrong" browser or device.

Flow organizes your tax transcript into a flowchart

```
Wages: 34,128          Interest: 8          Unemployment Income: 2,400

        Wages: 34,128 ──┐
        Interest: 8 ────→ AGI: 36,536
        Unemployment Income: 2,400 ──┘

AGI: 36,536        Standard Deduction: 6,300        Exemption Amount: 4,000

        AGI: 36,536 ──┐
        Standard Deduction: 6,300 ──→ Taxable Income: 26,236
        Exemption Amount: 4,000 ──┘

                        Taxable Income: 26,236 ──→ Tax: 3,474

Tax Withheld: 4,108          Tax: 3,474

        Tax Withheld: 4,108 ──┐
                              ├──→ Refund: 634
        Tax: 3,474 ───────────┘
```
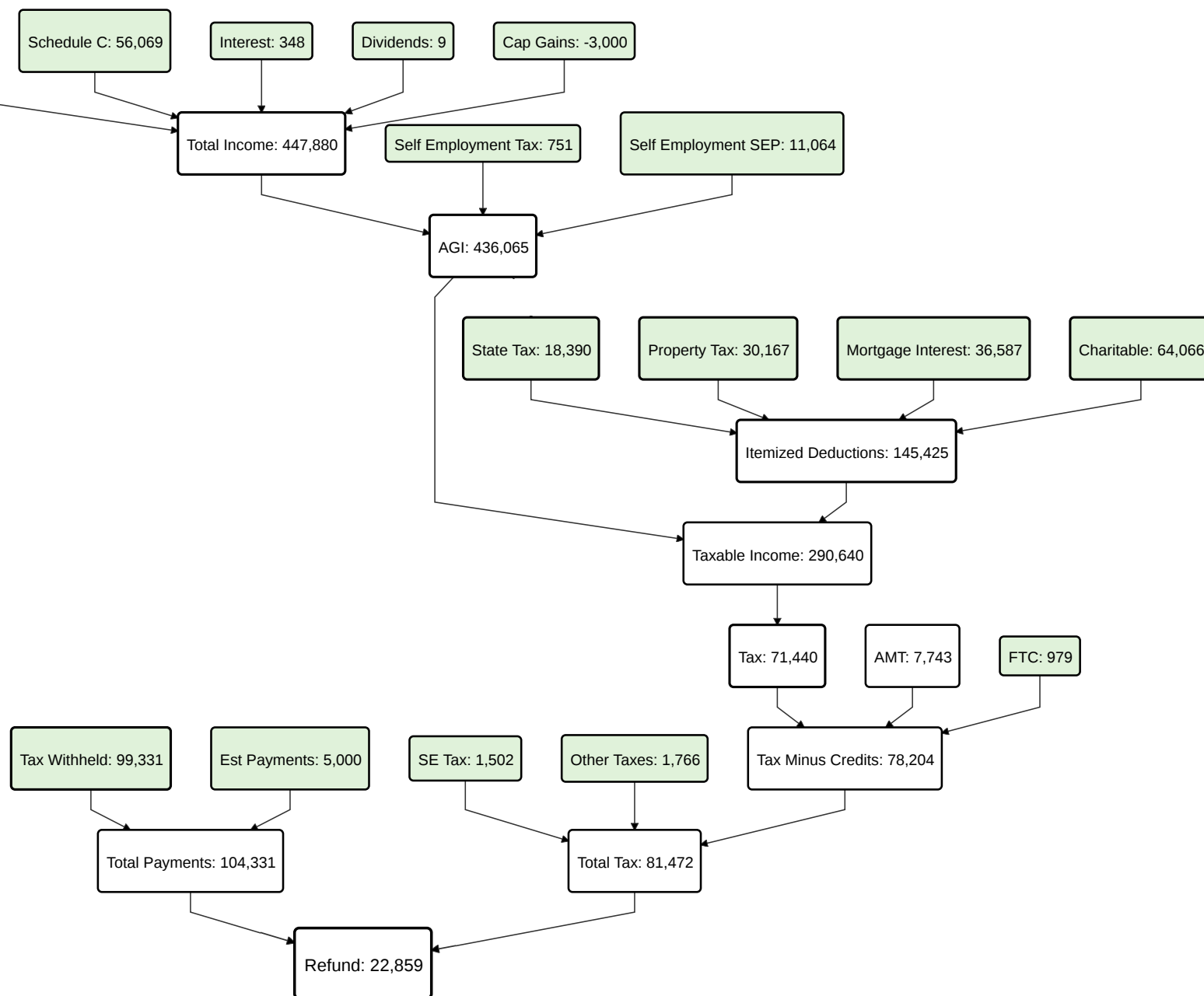
Hover over a cell to learn details

Shaded boxes are input data; clear boxes
are a formula using input data. The
annotations repeat this distinction.

Left panel:

Wages: 34,128

Interest: 8

Unemploy[ment]

You entered
$34,128 in
wages,
salaries, and
tips from form
W-2

AGI: 36,536

Standard

Taxable

Tax Withheld: 4,108

T[ax]

Right panel:

Wages: 34,128

Interest: 8

Unemployment [

AGI: 36,536

Standard Dedu[ction]

We calculated
adjusted gross
income (AGI)
by adding
wages,
interest, and
unemployment
income.

Taxable Incom[e]

Tax Withheld: 4,108

Tax: 3,[

Refund: 634

As your taxes become more complex, more elements are shown

Here is a real-world example from a family living in DC who made their 1040 public. They have more sources of income and itemize deductions, but unused boxes and zero-value boxes (including standard deduction and exemptions) do not appear in the tree.

Barak H Obama and Michelle L Obama

Married filing jointly

Both under 65. Neither blind.

Children:
Malia A Obama
Natasha M Obama (under 17)

Refund: approved

Wages: 394,454
Schedule C: 56,069
Interest: 348
Dividends: 9
Cap Gains: -3,000

Total Income: 447,880

Self Employment Tax: 751
Self Employment SEP: 11,064

AGI: 436,065

State Tax: 18,390
Property Tax: 30,167
Mortgage Interest: 36,587
Charitable: 64,066

Itemized Deductions: 145,425

Taxable Income: 290,640

Tax: 71,440
AMT: 7,743
FTC: 979

Tax Minus Credits: 78,204

Tax Withheld: 99,331
Est Payments: 5,000
SE Tax: 1,502
Other Taxes: 1,766

Total Payments: 104,331
Total Tax: 81,472

Refund: 22,859

The tree is the center of a screen that always has the same elements

Español | 中文 | 한국어
Tiếng Việt | Русский

The title

The corrected return we recorded

The tree

Biographical and refund: let users verify that IRS has the basics right.

Chandra Patel
Single
Under 65. Not blind.

No children or other dependents

Refund: sent April 26

※ See what IRS changed

※ Ask what if...?

※ Export my data

※ File an amended return

Wages: 34,128

Interest: 8

Unemployment Income: 2,400

AGI: 36,536

Standard Deduction: 6,300

Exemption Amount: 4,000

Taxable Income: 26,236

Tax Withheld: 4,108

Tax: 3,474

Refund: 634

You claimed a $5,000 exemption, but we calculated a $4,000 exemption for you. See the changes we made screen for details.

Congratulations on getting a tax refund! Reward yourself by investing in your future, at refund.myRA.gov.
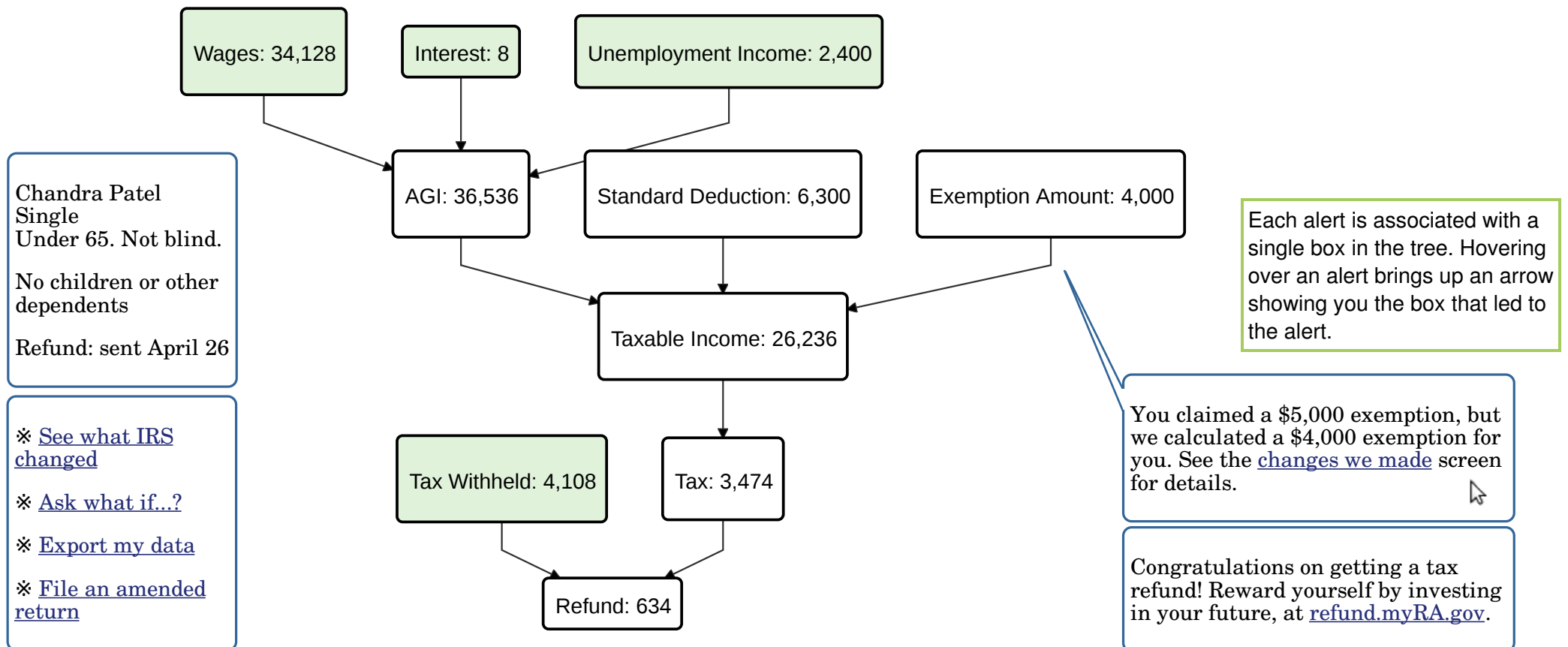
Actions: where do you want to go next?

Alerts: ways you can improve your finances or taxes

Alerts list steps to improve your taxes or finances

Both tax issues (like corrections or taking the less beneficial of AOTC or continuing education credits) and financial advice (like savings advice and programs for which you may be eligible) appear as alerts.

The corrected return we recorded

Wages: 34,128

Interest: 8

Unemployment Income: 2,400

AGI: 36,536

Standard Deduction: 6,300

Exemption Amount: 4,000

Chandra Patel
Single
Under 65. Not blind.

No children or other dependents

Refund: sent April 26

Each alert is associated with a single box in the tree. Hovering over an alert brings up an arrow showing you the box that led to the alert.

Taxable Income: 26,236

You claimed a $5,000 exemption, but we calculated a $4,000 exemption for you. See the changes we made screen for details.

Tax Withheld: 4,108

Tax: 3,474

※ See what IRS changed

※ Ask what if...?

※ Export my data

※ File an amended return

Refund: 634

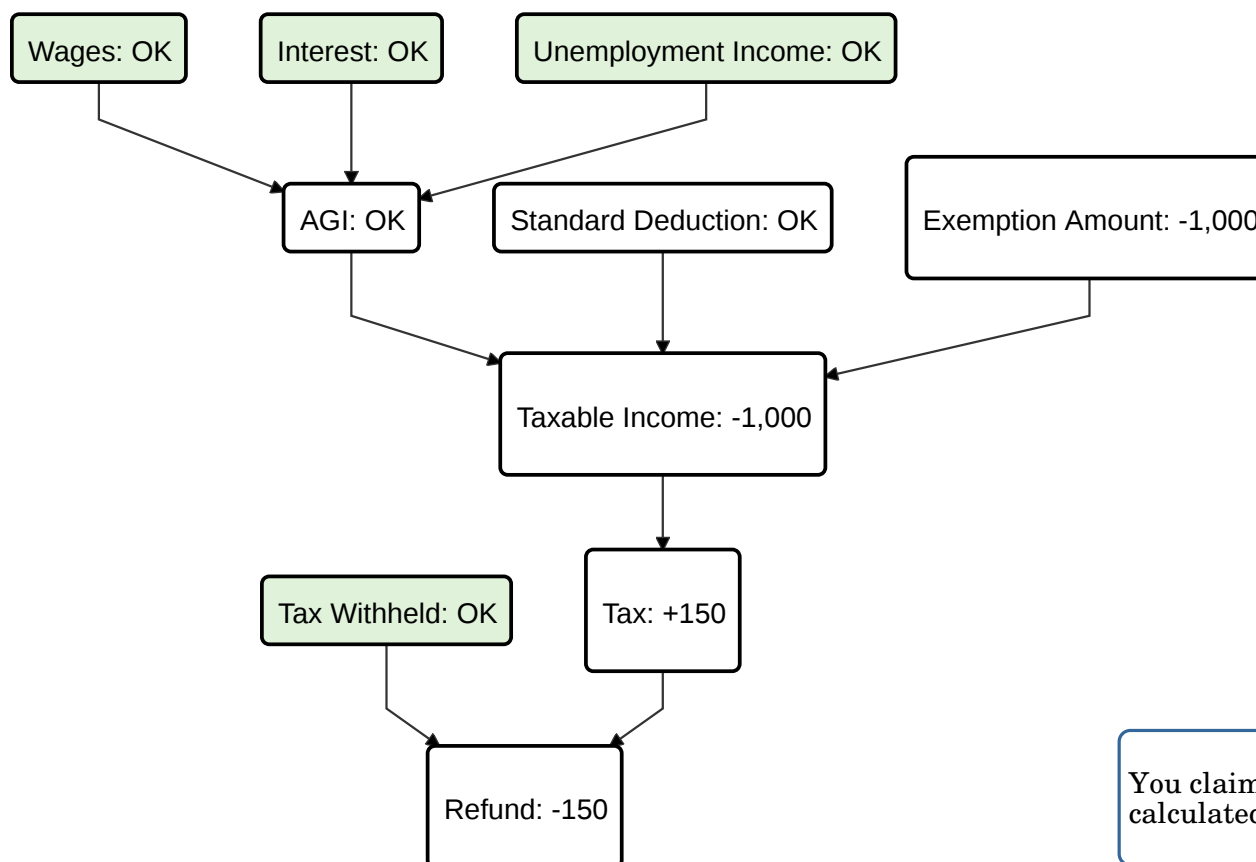Congratulations on getting a tax refund! Reward yourself by investing in your future, at refund.myRA.gov.

See adjustments IRS made to your taxes on the Difference Screen

This page appears only if IRS made a correction.

Differences between your filing and our record. [Click here to see your original return](#).

Wages: OK

Interest: OK

Unemployment Income: OK

AGI: OK

Standard Deduction: OK

Exemption Amount: -1,000

Chandra Patel
Single
Under 65. Not blind.

No children or other dependents

Refund: sent April 26

Taxable Income: -1,000

※ Return to the IRS transcript

※ Show my return before IRS changes

※ File an amended return

Tax Withheld: OK

Tax: +150

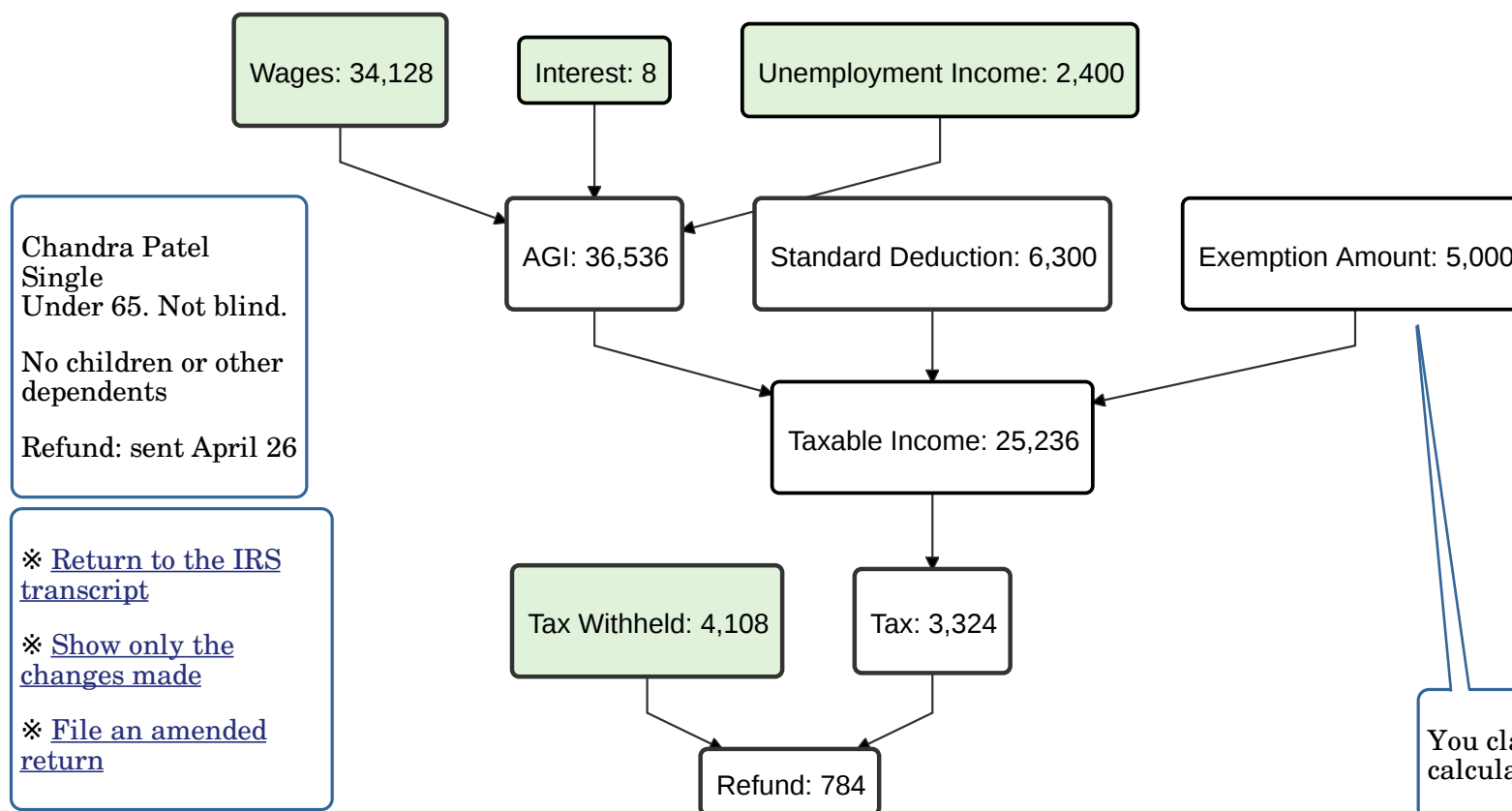Refund: -150

You claimed a $5,000 exemption, but we calculated a $4,000 exemption for you.

Switch between the Difference Screen and the full return as filed

The return you filed, before our corrections. Click here to see just the changes.

Wages: 34,128

Interest: 8

Unemployment Income: 2,400

AGI: 36,536

Standard Deduction: 6,300

Exemption Amount: 5,000

Chandra Patel
Single
Under 65. Not blind.

No children or other dependents

Refund: sent April 26

Taxable Income: 25,236

※ Return to the IRS transcript

※ Show only the changes made

※ File an amended return

Tax Withheld: 4,108

Tax: 3,324

Refund: 784

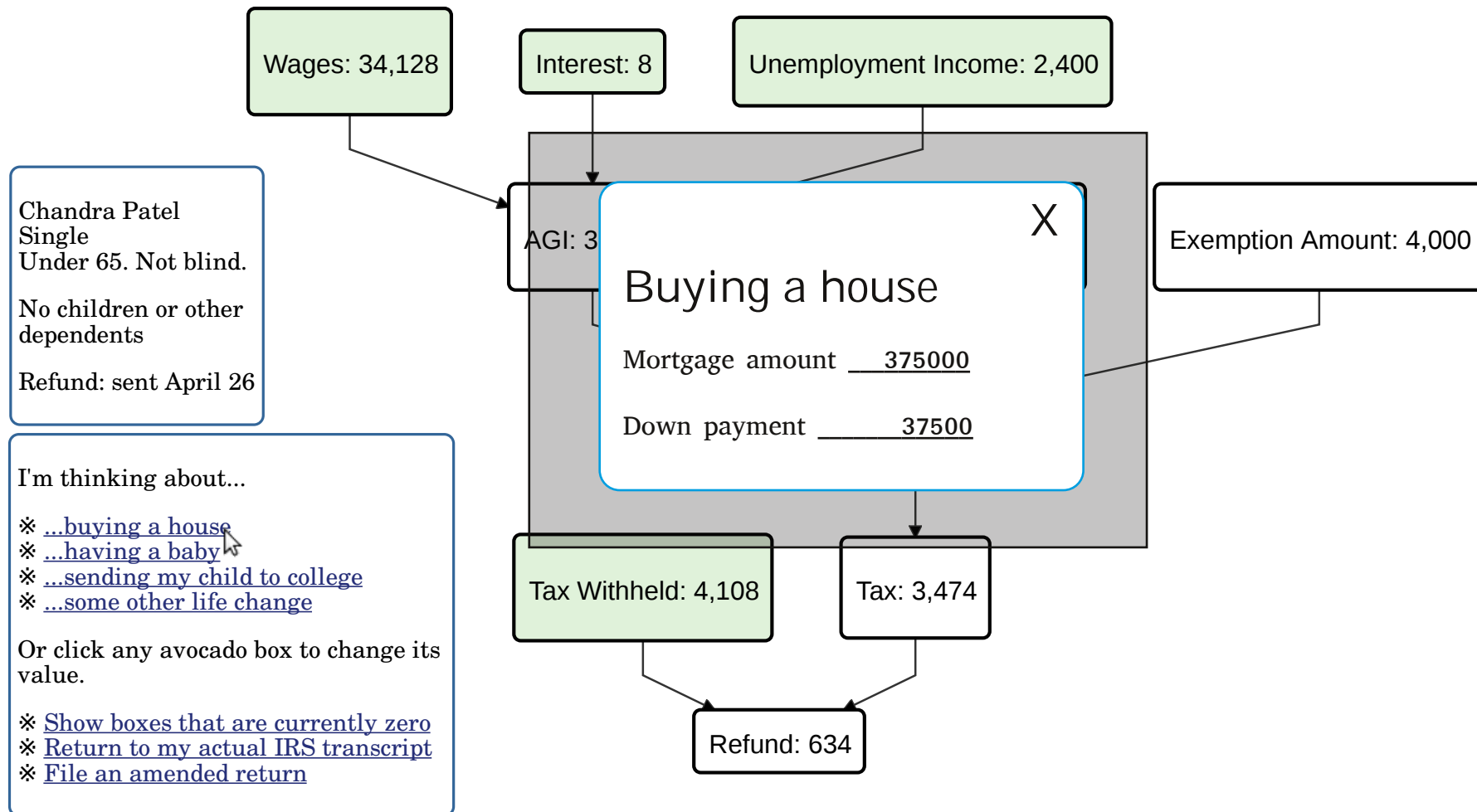You claimed a $5,000 exemption, but we calculated a $4,000 exemption for you.

Programmed what ifs?

The Actions box includes a few pre-built scenarios. Clicking one brings up a dialogue box asking for more details.

What if you bought a house? Enter estimated values to see how your taxes would change.

Wages: 34,128

Interest: 8

Unemployment Income: 2,400

Chandra Patel
Single
Under 65. Not blind.

No children or other dependents

Refund: sent April 26

AGI: 3

Exemption Amount: 4,000

Buying a house

Mortgage amount ___375000

Down payment _____37500

I'm thinking about...

※ ...buying a house
※ ...having a baby
※ ...sending my child to college
※ ...some other life change

Or click any avocado box to change its value.

※ Show boxes that are currently zero
※ Return to my actual IRS transcript
※ File an amended return

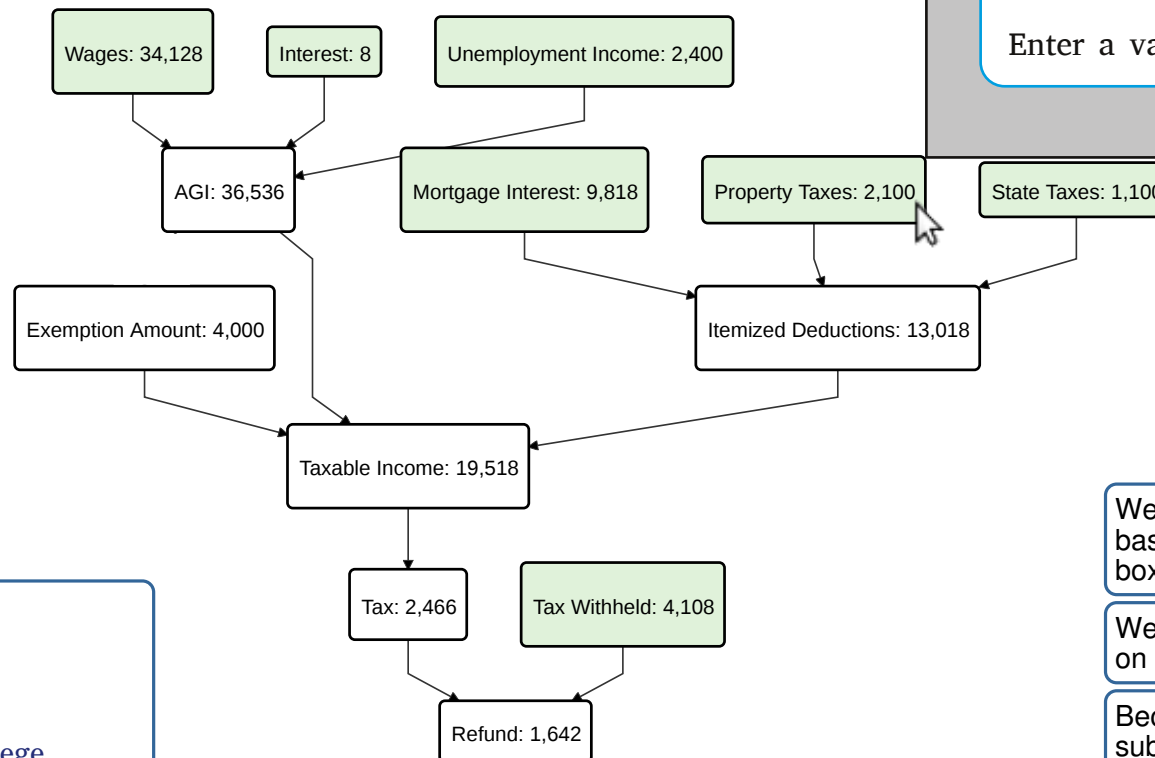Tax Withheld: 4,108

Tax: 3,474

Refund: 634

Free experimentation what if?

If the pre-built assumptions aren't what you want, click any cell to try a new value.

What if you bought a house? Click any box to chan[ge] amounts.

한국어
сский

Property Taxes

Enter a value ___2100

Wages: 34,128

Interest: 8

Unemployment Income: 2,400

AGI: 36,536

Mortgage Interest: 9,818

Property Taxes: 2,100

State Taxes: 1,100

Exemption Amount: 4,000

Itemized Deductions: 13,018

Chandra Patel
Single
Under 65. Not blind.

No children or other dependents

Refund: sent April 26

Taxable Income: 19,518

Tax: 2,466

Tax Withheld: 4,108

Refund: 1,642

I'm thinking about...

※ ...buying a house
※ ...having a baby
※ ...sending my child to college
※ ...some other life change

Or click any avocado box to change its value.

※ Show boxes that are currently zero
※ Return to my actual IRS transcript
※ File an amended return

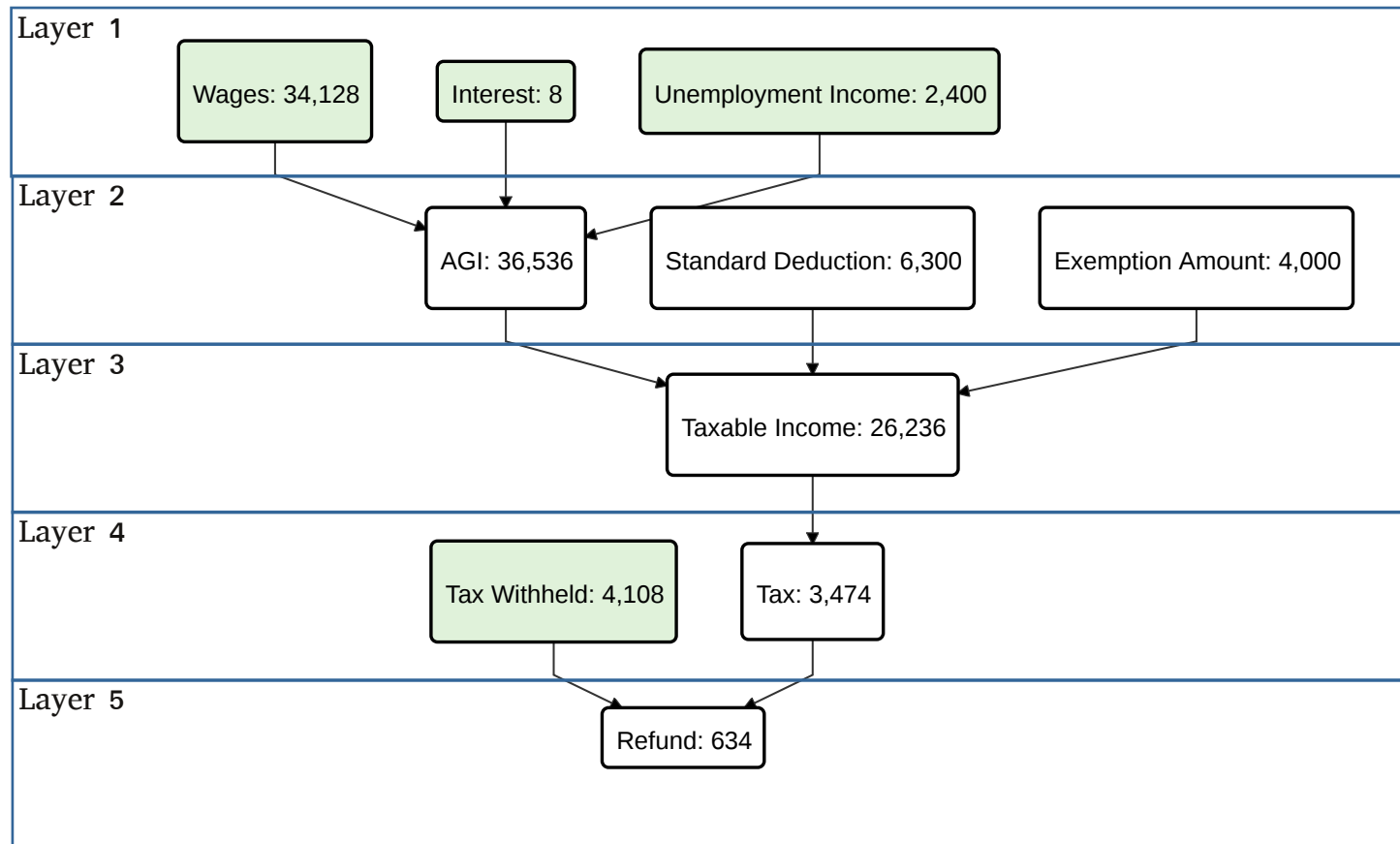We estimated your mortgage interest based on your suggestions. Click any box to change a number.

We estimated your property tax based on national averages.

Because you are itemizing, you may subtract last year's state taxes from income you report on your federal return. We estimated this value based on your state and income.
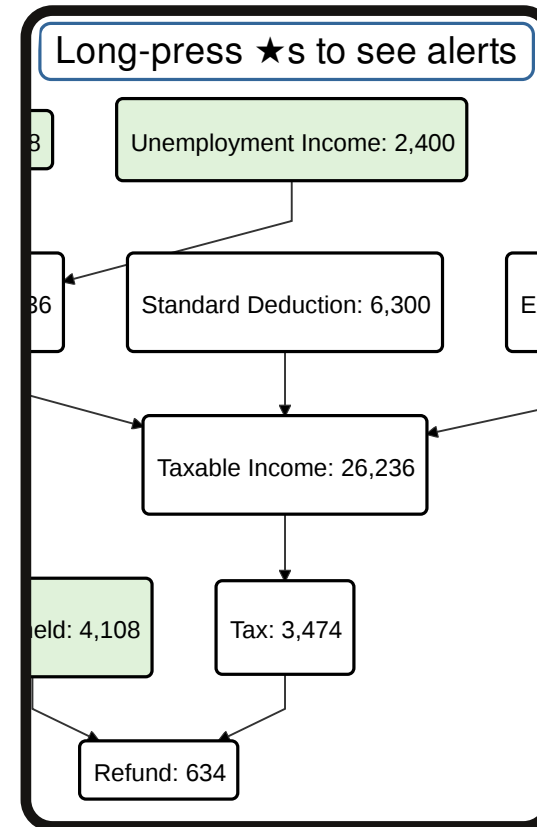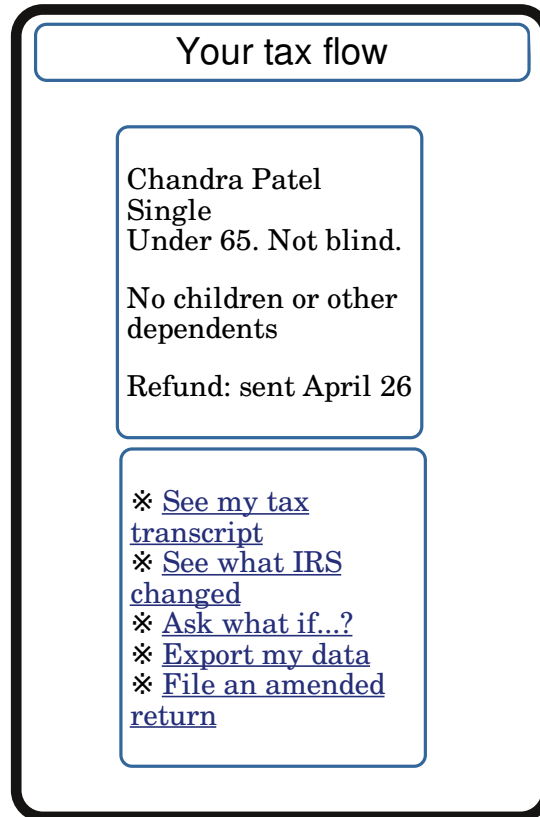
Because you are itemizing, contributions to charity are subtracted from income. Based on your situation, every $100 you contribute lowers your taxes by $15.

Accessibility using a screen reader

The tree neatly slices into layers. If you are using a screen reader, the imposed layers will allow you to go through the graph in an organized manner, beginning with the three items in layer 1, followed by the three items in layer 2, and so on. By augmenting the information in each box's mouse-over detail to include the list of the selected box's parents and children, the flowchart reads much as flowcharts do in textbooks for the blind.

Layer 1
- Wages: 34,128
- Interest: 8
- Unemployment Income: 2,400

Layer 2
- AGI: 36,536
- Standard Deduction: 6,300
- Exemption Amount: 4,000

Layer 3
- Taxable Income: 26,236

Layer 4
- Tax Withheld: 4,108
- Tax: 3,474

Layer 5
- Refund: 634

Flow on your telephone

Your tax flow

Chandra Patel
Single
Under 65. Not blind.

No children or other dependents

Refund: sent April 26

※ See my tax transcript
※ See what IRS changed
※ Ask what if...?
※ Export my data
※ File an amended return

Long-press ★s to see alerts

Unemployment Income: 2,400

Standard Deduction: 6,300

Taxable Income: 26,236

eld: 4,108

Tax: 3,474

Refund: 634

For small screens, Flow starts with the biographical/refund information, and a list of actions. From there you can pick which tree you want to see: the transcript, diffs, original return, or what-if options.

From the tree view, scroll around, or tap a box to get more information about the box. All mobile operating systems have a dedicated back button or gesture to return to the biographical and menu screen.

Community and extensions

Early versions of Flow have been discussed on Hacker News and Reddit, and a small community has already grown around them. For example, David Cook has written a script to scrape data from Free File Fillable Forms and import it to the tax graph.

David Reed, writing for the American Society of Public Administrators newsletter, writes of an early version: "... translating the complex set of administrative and legal requirements represented in IRS forms into a dependency tree.... not only enables computing the tax amount for an individual, but also facilitates more complex analyses such as how a particular change in requirements would affect the aggregate tax on a diverse group of taxpayers. This is a potentially powerful approach to analyzing administrative systems ...."

An example with student loans and child tax credit from an earlier version of Flow

Earlier versions included *all* the intermediate calculations—if you are reading this in a browser or a PDF viewer, keep zooming in!