

Create Web App

Options calculator

OptionsLab

PRICING SUITE

f Black-Scholes

Δ Option Greeks

σ Implied Volatility

↔ Put-Call Parity

▮ Binomial Model

▮ Strategy P/L

Black-Scholes Model

European call & put valuation under the Black-Scholes-Merton framework, with continuous dividend yield.

SPOT PRICE (\$)

100

\$

STRIKE PRICE (K)

100

\$

TIME TO EXPIRY

1

years

RISK-FREE RATE

5

%

DIVIDEND YIELD

0

%

VOLATILITY (Σ)

20

%

CALL PRICE

\$10.45

PUT PRICE

\$5.57

D_1

0.3500

D_2

0.1500



Client-side calculations.

Options calculator

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$\hat{m}$ Binomial Model

 Strategy P/L

Options Pricing Suite

Professional-grade derivatives analytics — Black-Scholes valuation, Greeks, implied volatility, parity arbitrage, binomial trees and multi-leg strategy payoffs. All computed instantly in your browser.

Put-Call Parity Checker

Tests the no-arbitrage relationship $C - P = S e^{-qT} - K e^{-rT}$ and quantifies any violation.

CALL PRICE (C)

10.45

\$

PUT PRICE (P)

5.57

\$

SPOT PRICE (S)

100

\$

STRIKE PRICE (K)

100

\$

TIME TO EXPIRY

1

years

RISK-FREE RATE

5

%

DIVIDEND YIELD

0

%

● Parity holds (within \$0.01)

$C - P$

\$4.88

$S e^{-qT} - K e^{-rT}$

\$4.88

PARITY GAP

\$0.00

SYNTHETIC CALL / PUT

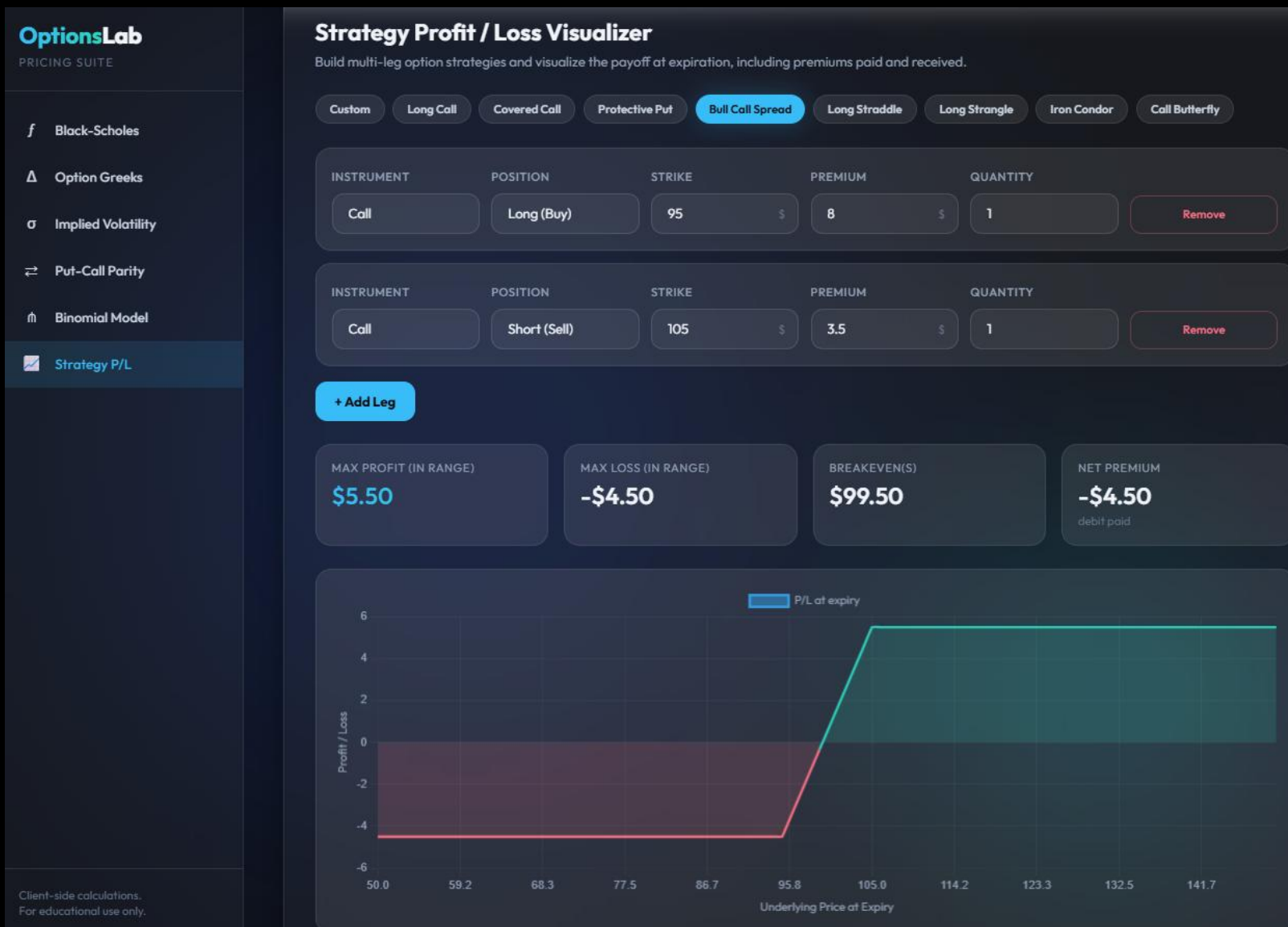
\$10.45 / \$5.57

fair values implied by parity

Client-side calculations.

Built with React, htm, Tailwind CSS and Chart.js. Results are theoretical model values, not investment advice.

Options calculator



VS Code and Claude Code

- Ensure that you have installed VS Code, and added the Claude Code extension
- Follow the instructions from previous slides to ensure you have access

Download the text file from the
02-Web App section on Canvas

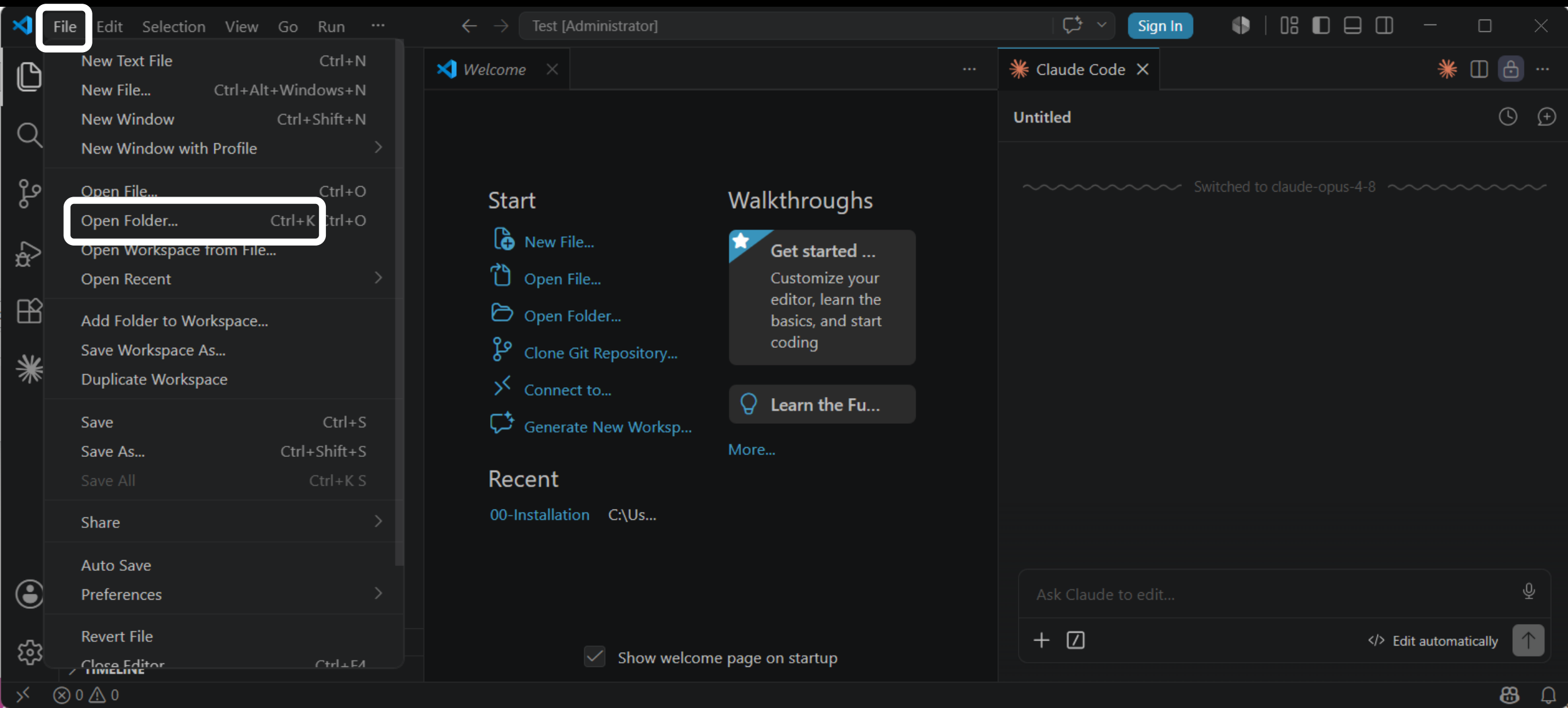


01-Prompt-CreateWebApp.txt

Save the files to a folder on your PC

 01-Prompt-CreateWebApp.txt

In VS Code, click File -> Open Folder Select the folder containing those files



Click on 01-Prompt-CreateWebApp.txt

The image shows a VS Code window with the following components:

- File Explorer:** Located on the left, it shows a folder named "02-WEB APP" containing a file named "01-Prompt-CreateWebApp.txt", which is highlighted with a white border.
- Code Editor:** The main area displays the content of "01-Prompt-CreateWebApp.txt". The text is as follows:

```
1 TASK
2 Create a premium stylish web app which allows users to perform
  financial calculations. They should be able to input values, and
  the system will perform the calculations and display the results.
3
4 TECHNICAL
5 - **Architecture**: Static Web Application (HTML/CSS/JS).
6 - **Core Stack**: HTML5, CSS, JavaScript (ES6+), React, htm.
7 - **Dependencies**: Tailwind CSS (via CDN), Chart.js (via CDN),
  React (via CDN), htm (via CDN).
8 - **Calculation Logic**: JavaScript for client-side performance
  and easy static hosting.
9 - **Hosting**: Netlify (Static hosting).
10
11 DESIGN
12 Use HTML, CSS, Javascript for design. Use a dark charcoal theme an
  accent of a rich subtle gradient in the background, which has a
  high quality premium aesthetic.
13 Concept: A modern, tech-forward aesthetic using glassmorphism
  (frosted glass effects) to create depth and layering. It feels
  dynamic and contemporary.
14 Background: Dark charcoal with very subtle, slow-moving abstract
  gradients in the background (deep blues or purples) to provide
  depth.
15 Color: Content is contained in semi-transparent "frosted glass"
```
- Chat Sidebar:** On the right, there is a "CHAT" panel. It features a "Build with Agent" section with the text "AI responses may be inaccurate" and a link "Generate Agent Instructions to onboard AI onto your codebase." Below this is a text input field with a placeholder "Describe what to build" and a button "01-Prompt-CreateWebApp.txt". At the bottom, there are options for "Local" and "Default Approvals".
- Status Bar:** At the very bottom, it shows "Ln 14, Col 135", "Spaces: 3", "UTF-8", "CRLF", and "Plain Text".

Read through the prompt

File Edit Selection View Go Run ... 02-Web App [Administrator] Sign In

EXPLORER

02-WEB APP

01-Prompt-CreateWebApp.txt

01-Prompt-CreateWebApp.txt

1 TASK

2 Create a premium stylish web app which allows users to perform

3 financial calculations. They should be able to input values, and

4 the system will perform the calculations and display the results.

5

6 TECHNICAL

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10 React (via CDN), htm (via CDN).

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12 and easy static hosting.

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17 accent of a rich subtle gradient in the background, which has a

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23 gradients in the background (deep blues or purples) to provide

24 depth.

25

CHAT

Build with Agent

AI responses may be inaccurate

Generate Agent Instructions to onboard AI onto your codebase.

+ 01-Prompt-CreateWebApp.txt

Describe what to build

+ | 🔍 | Auto | ⚙️

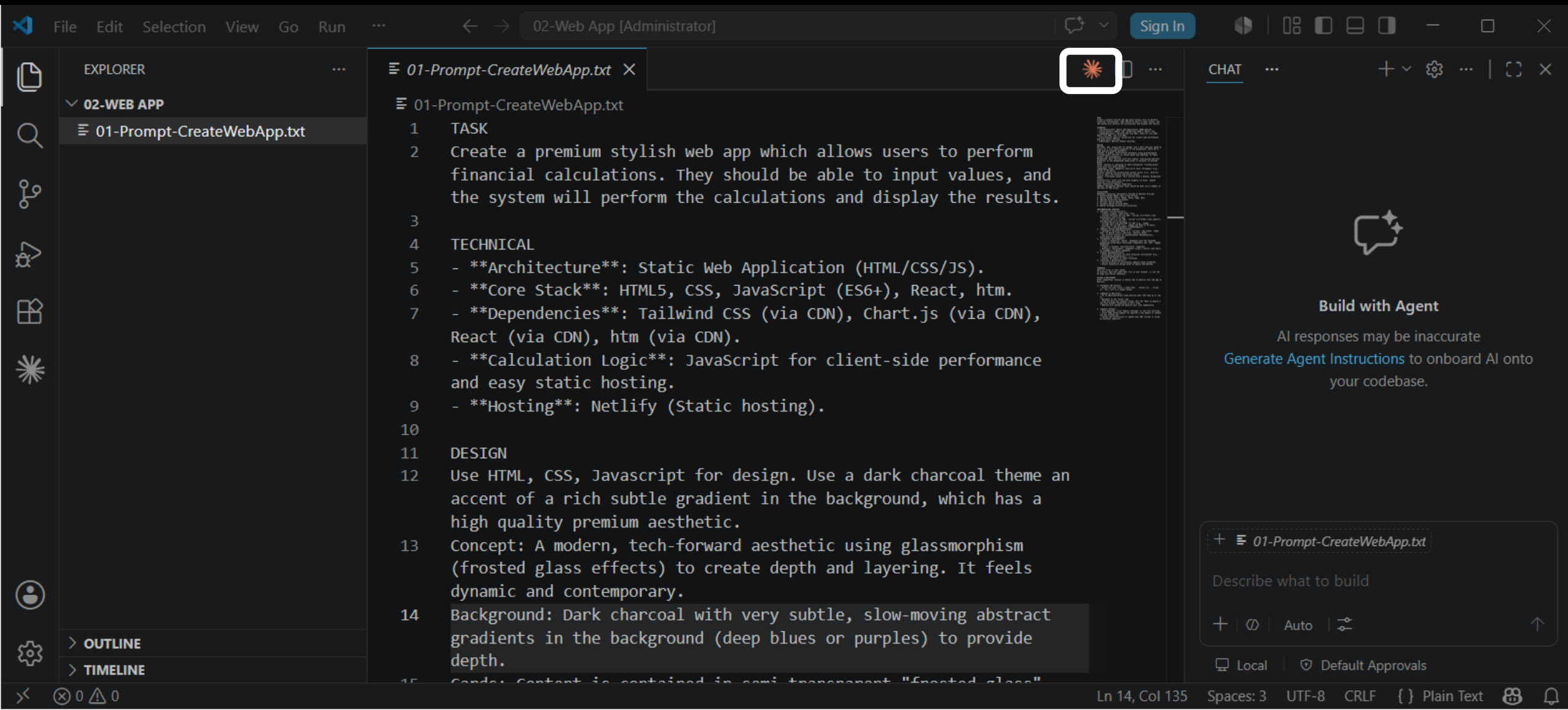
Local | Default Approvals

Ln 14, Col 135 Spaces: 3 UTF-8 CRLF {} Plain Text

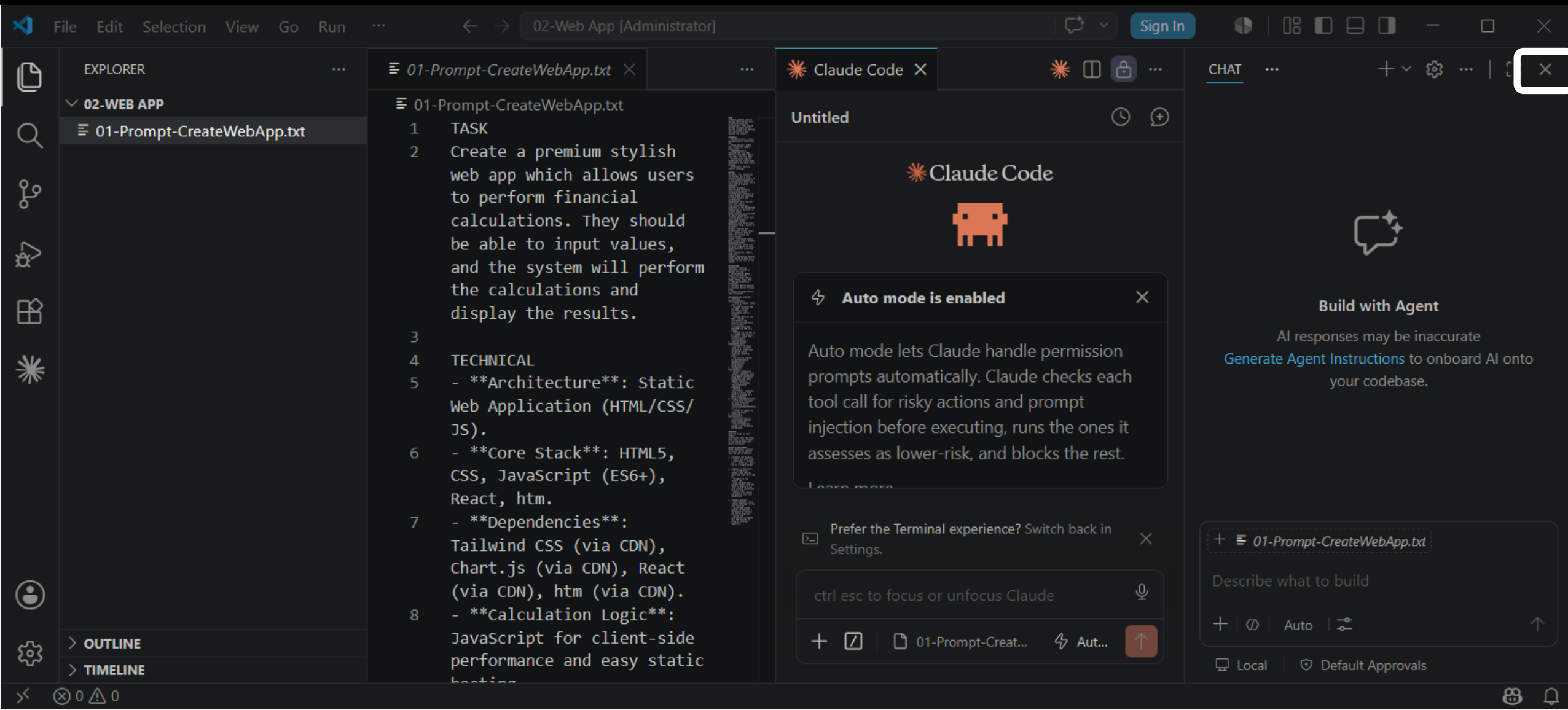
Explanation of prompt

- Asks Claude to create a web app for an options calculator
- Provides technical details about what coding languages to use, i.e. HTML, CSS, Javascript and React
- Provides design guidelines about layout, colour and font
- Tells Claude to output the file, and then explain how to upload this to Netlify so it can be published

Click orange icon to open Claude Code



Close the other chat window



The screenshot shows the Visual Studio Code interface with the Claude Code extension installed. The Explorer sidebar on the left shows a project named '02-WEB APP' with a file '01-Prompt-CreateWebApp.txt' selected. The main editor displays the content of this file, which includes a task description and technical specifications. The Claude Code window is open in the center, showing the 'Auto mode is enabled' notification and the 'Build with Agent' section. The Chat window is open on the right, showing the '01-Prompt-CreateWebApp.txt' file selected in the chat history. The 'Close' button (X) in the top right corner of the Chat window is highlighted with a white box.

File Edit Selection View Go Run ... 02-Web App [Administrator] Sign In

EXPLORER

02-WEB APP

01-Prompt-CreateWebApp.txt

01-Prompt-CreateWebApp.txt

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5 - ****Architecture****: Static Web Application (HTML/CSS/JS).

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7 - ****Dependencies****: Tailwind CSS (via CDN), Chart.js (via CDN), React (via CDN), htm (via CDN).

8 - ****Calculation Logic****: JavaScript for client-side performance and easy static hosting.

Untitled

Claude Code

Auto mode is enabled

Auto mode lets Claude handle permission prompts automatically. Claude checks each tool call for risky actions and prompt injection before executing, runs the ones it assesses as lower-risk, and blocks the rest.

Learn more

Prefer the Terminal experience? Switch back in Settings.

ctrl esc to focus or unfocus Claude

01-Prompt-Creat... Aut...

Build with Agent

AI responses may be inaccurate

Generate Agent Instructions to onboard AI onto your codebase.

01-Prompt-CreateWebApp.txt

Describe what to build

Local Default Approvals

Ensure Settings use Model=Fable, Effort=Medium, and Auto Mode

The image shows a VS Code editor window with the Claude Code extension installed. The extension's settings are visible in the bottom right corner, showing the following configuration:

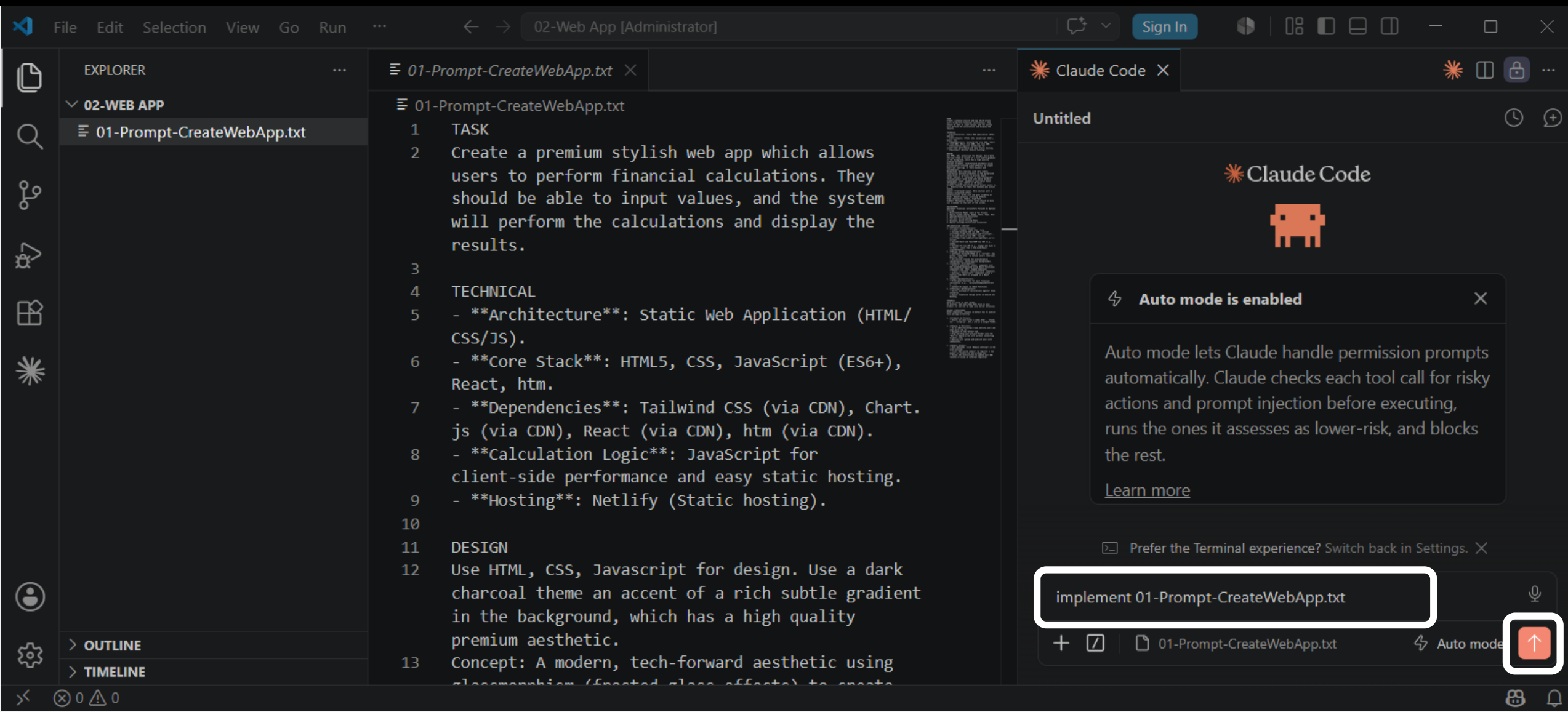
 - Model: Fable
 - Effort: Medium
 - Auto Mode: Enabled

The main editor area displays a file named `01-Prompt-CreateWebApp.txt` with the following content:

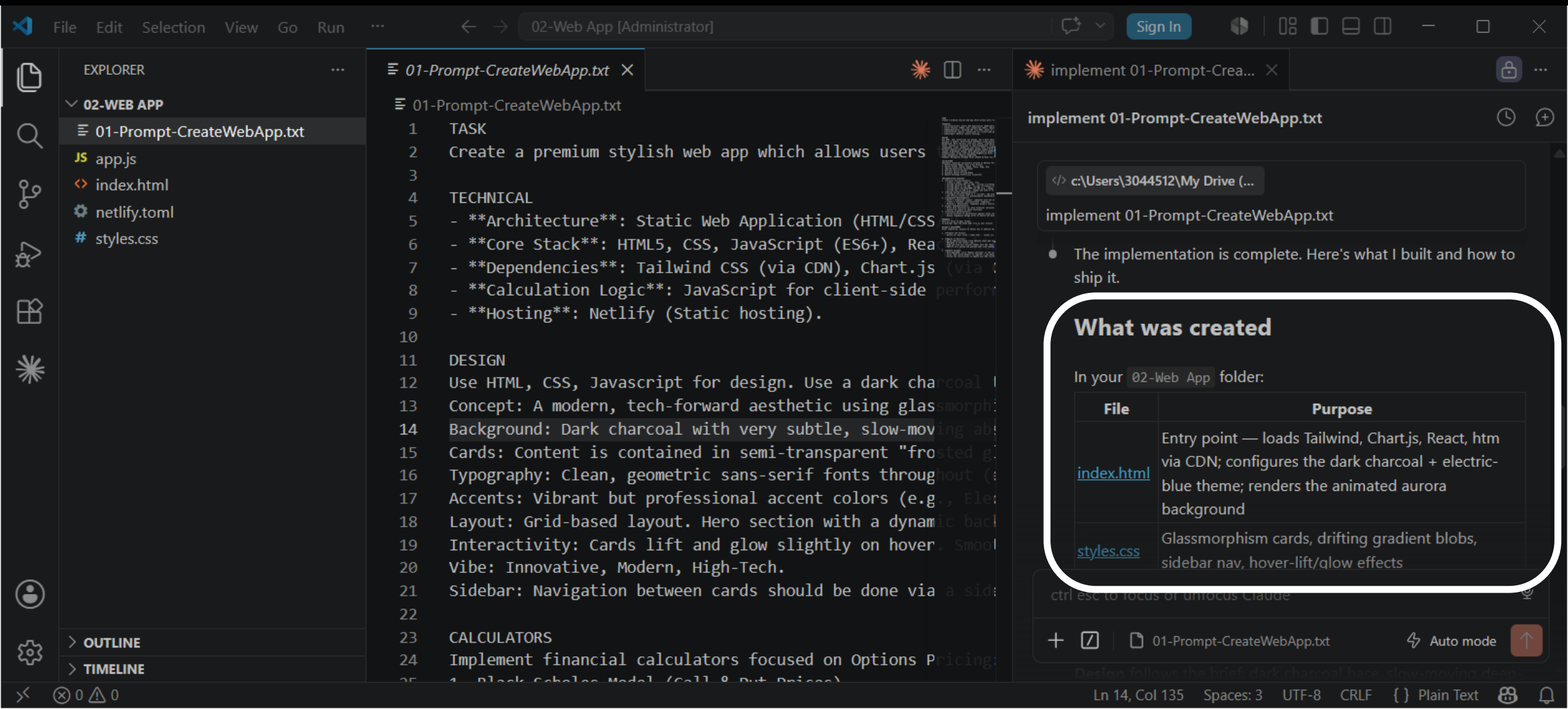
```
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  premium aesthetic.
13 Concept: A modern, tech-forward aesthetic using
  glassmorphism (frosted glass effects) to create
```

The Claude Code extension interface also shows a notification that "Auto mode is enabled" and a button to "Switch back in Settings".

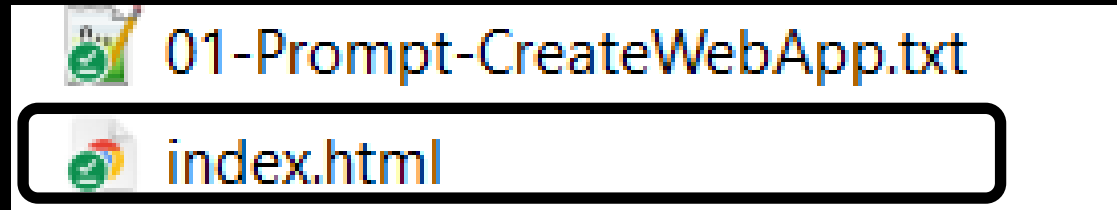
Ask Claude Code: implement 01-Prompt-CreateWebApp.txt



It will produce an index.html file



In Windows File Explorer (not VS Code)
double-click index.html



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📈 Binomial Model

📊 Strategy P/L

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European call & put valuation under the Black-Scholes-Merton framework, with continuous dividend yield.

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years

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DIVIDEND YIELD

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VOLATILITY (Σ)

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 Strategy P/L

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5.57

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years

RISK-FREE RATE

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DIVIDEND YIELD

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● Parity holds (within \$0.01)

$C - P$

\$4.88

$S e^{-qT} - K e^{-rT}$

\$4.88

PARITY GAP

\$0.00

SYNTHETIC CALL / PUT

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fair values implied by parity

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OptionsLab

PRICING SUITE

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$\leftrightarrow$ Put-Call Parity

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 Strategy P/L

Client-side calculations.
For educational use only.

Strategy Profit / Loss Visualizer

Build multi-leg option strategies and visualize the payoff at expiration, including premiums paid and received.

Custom

Long Call

Covered Call

Protective Put

Bull Call Spread

Long Straddle

Long Strangle

Iron Condor

Call Butterfly

INSTRUMENT

POSITION

STRIKE

PREMIUM

QUANTITY

Call

Long (Buy)

95

\$

8

\$

1

Remove

INSTRUMENT

POSITION

STRIKE

PREMIUM

QUANTITY

Call

Short (Sell)

105

\$

3.5

\$

1

Remove

+ Add Leg

MAX PROFIT (IN RANGE)

\$5.50

MAX LOSS (IN RANGE)

-\$4.50

BREAKEVEN(S)

\$99.50

NET PREMIUM

-\$4.50

debit paid



Challenge

- Create a web app for Bond pricing
- Publish it on Netlify to create your own web app
- Upload index.html to Canvas for the second assignment