

# DOWNLOAD

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1. Visual Studio Code ( Preferred IDE )
2. NodeJS ( LTS version preferred)
3. Google Chrome ☺



# DEBUGGING

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## ❖ Why Debugging?

Find errors in codes

Test new features on the fly

Saves time

(See others code using Debugging tools as well)

## ❖ How Debugging?

Tools used such as

Chrome Dev Tools,

VS Code Debugger Extensions (Debugger for Chrome),

POSTMAN,



# CHROME DEV TOOLS

(Press F12 on any page to open it up)

Used for    HTML debugging,  
              CSS debugging  
              JS debugging

The screenshot shows the Chrome DevTools interface with the following tabs selected:

- Elements**: Shows the DOM tree on the left with code snippets for various elements.
- Styles**: Shows the CSS styles applied to the selected element on the right.
- Computed**: Shows the final computed styles for the selected element.

**Elements Tab Content:**

```
<!DOCTYPE html>
<html itemscope itemtype="http://schema.org/WebPage" lang="en-IN">
  <head>...</head>
  ... <body jsmodel="TvHxbe" class="hp_vasq_big" id="gsr" jsaction="tbSCpf:.CLIENT"> == $0
    > <style data-jiis="cc" id="gstyle" data-iml="1598698521279">...</style>
    > <style data-iml="1598698521279">...</style>
    > <div class="ctr-p" id="viewport">...</div>
    <textarea class="csi" name="csi" style="display:none"></textarea>
    > <script nonce="J+7+0+XKTR9heBUHGRS2Cw==">...</script>
    <script src="/xjs/_/js/k=xjs.s.en_GB.uzktyQuaLUG.0/ck=xjs.s.YFFPxTloF1I.L.W.0/m=Iv..RBQA/d=1/dg=2/ct=zgms/rs=ACT90oFH28KC2yeUxW7YasPo39rmQjZYfw?cb=4430851" gapi_processed="true"></script>
    <script src="/xjs/_/js/k=xjs.s.en_GB.uzktyQuaLUG.0/ck=xjs.s.YFFPxTloF1I.L.W.0/am=A...1,fEVMic,foot,lu,m,mUpTid,mu,sp_wiz,sf,sonic,spch,xz7cd?xjs=s&cb=4430851" async></script>
    <script src="/xjs/_/js/k=xjs.s.en_GB.uzktyQuaLUG.0/ck=xjs.s.YFFPxTloF1I.L.W.0/am=A...ct=zgms/rs=ACT90oFH28KC2yeUxW7YasPo39rmQjZYfw?m=wkrYee?xjs=s2&cb=4430851" async></script>
  </body>
</html>
```

**Styles Tab Content:**

```
element.style { }
body, html {
  font-size: small;
}
body {
  background: □#ffff;
  color: ■#222;
}
body, td, a, p, .h {
  font-family: arial,sans-serif;
}
html, body {
  height: 100%;
  margin: ▷ 0;
}
body {
  display: block;
  margin: ▷ 8px;
}
```

**Computed Tab Content:**

A diagram illustrating the element's bounding box structure. It shows nested rectangles representing the element's dimensions:

- Outermost: margin (orange)
- Second: border (yellow)
- Third: padding (green)
- Innermost: content (blue)

The total width is 1536 and the total height is 722.400.

**Status Bar:**

html body#gsr.hp.vasq.big

# VS CODE DEBUGGING (Debugger for Chrome Extension required)

Used for NodeJS Debugging

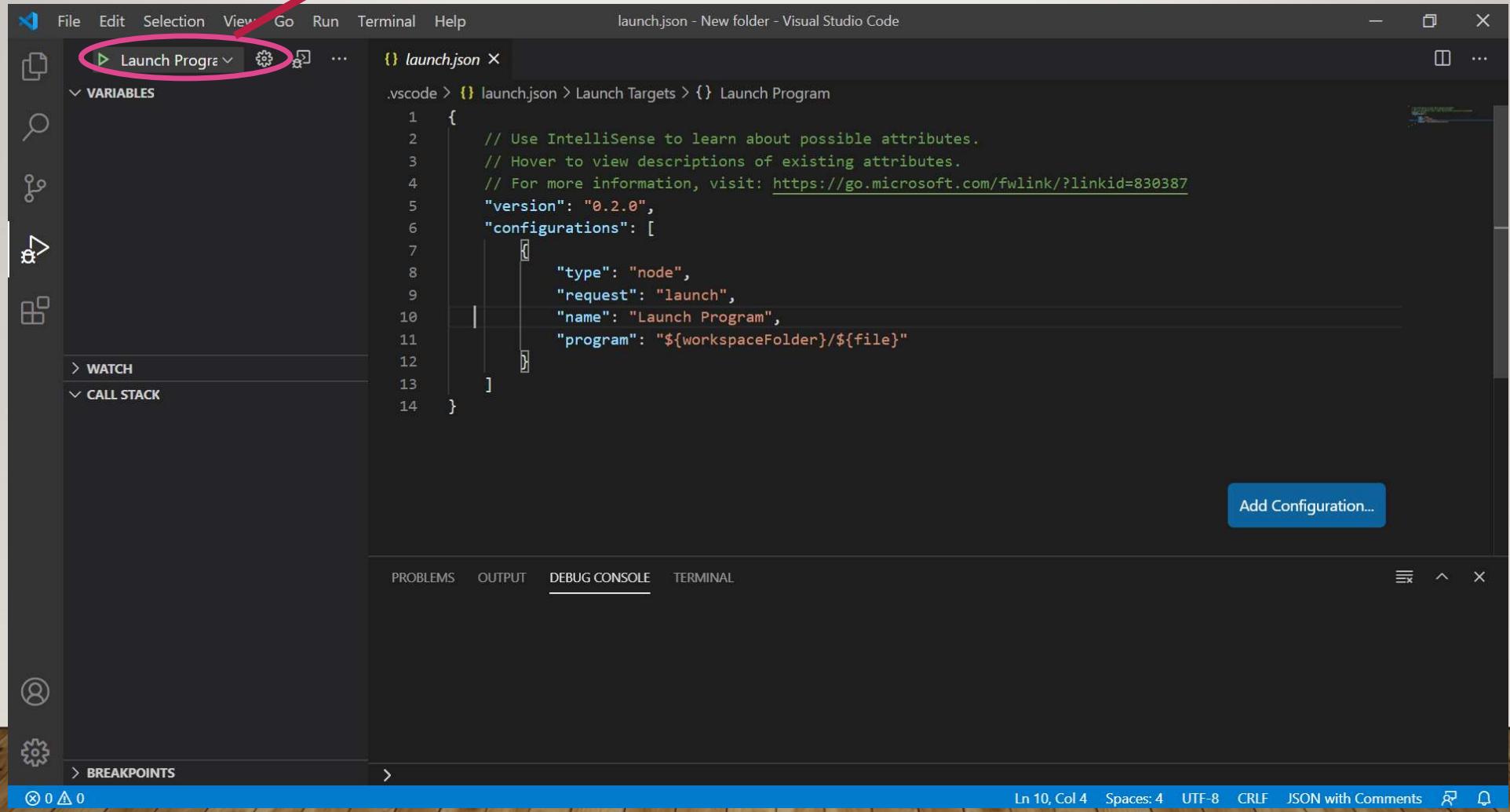
The screenshot shows the Visual Studio Code interface with the following details:

- File Bar:** File, Edit, Selection, View, Go, Run, Terminal, Help.
- Editor:** File name: index.js - New folder - Visual Studio Code. The code is a simple Express.js application:

```
1 var express = require('express');
2
3 var app = express();
4 app.set('view engine','ejs');
5 app.get('/',(req,res)=>[
6   res.render('index.ejs');
7 ]);
8 app.use('/static',express.static('static'));
9 app.listen(80,()=>{
10   console.log('Started listening at port 80.');
11});
```
- Left Sidebar:** Launch Program, Variables (Local and Global), Watch, Call Stack (Paused on Breakpoint).
- Breakpoints:** A red dot indicates a breakpoint is set on line 5 of the code.
- Bottom Panel:** PROBLEMS, OUTPUT, DEBUG CONSOLE, TERMINAL. The DEBUG CONSOLE tab is active, showing the output of the Node.js process:

```
"C:\Program Files\nodejs\node.exe" "c:\Users\mohit\OneDrive\Desktop>New folder\index.js"
Debugger listening on ws://127.0.0.1:50339/731f70f1-7c86-47f3-9d2a-2d901f8ee0a1
For help, see: https://nodejs.org/en/docs/inspector
Debugger attached.
Started listening at port 80.
```
- Status Bar:** Ln 6, Col 9 | Spaces: 4 | UTF-8 | CRLF | JavaScript | Launch Program (New folder)

From the dropdown select Add configuration.  
And add the following code to start debugging



The screenshot shows the Visual Studio Code interface with the following details:

- File Bar:** File, Edit, Selection, View, Go, Run, Terminal, Help.
- Toolbar:** Includes icons for file operations, search, variables, and other developer tools.
- Left Sidebar:** Shows sections for **VARIABLES**, **WATCH**, and **CALL STACK**.
- Central Area:** Displays the `launch.json` file content:

```
1  {
2      // Use IntelliSense to learn about possible attributes.
3      // Hover to view descriptions of existing attributes.
4      // For more information, visit: https://go.microsoft.com/fwlink/?linkid=830387
5      "version": "0.2.0",
6      "configurations": [
7          {
8              "type": "node",
9              "request": "launch",
10             "name": "Launch Program",
11             "program": "${workspaceFolder}/${file}"
12         }
13     ]
14 }
```
- Bottom Right:** A blue button labeled **Add Configuration...**.
- Bottom Navigation:** PROBLEMS, OUTPUT, DEBUG CONSOLE (underlined), TERMINAL.
- Bottom Status Bar:** Ln 10, Col 4, Spaces: 4, UTF-8, CRLF, JSON with Comments, and two small icons.