



Pair Programming

Why & How



What is it?

Two people.

Collaborating on one code source.

To collectively produce one program.

(that's it!)

Questions

Advocates for pair programming might say....

```
document.getElementById(div).innerHTML += errormsg;
else if (i==2)
{
  var atpos=inputs[i].indexOf("@");
  var dotpos=inputs[i].lastIndexOf(".");
  if (atpos<1 || dotpos<atpos+2 || dotpos>inputs[i].length-1)
  document.getElementById('errmsg').innerHTML += "Invalid email address  

  else
  document.getElementById(div).innerHTML += "Valid  

  }
  else if (i==5)
  {
    var atpos=inputs[i].indexOf("@");
    var dotpos=inputs[i].lastIndexOf(".");
    if (atpos<1 || dotpos<atpos+2 || dotpos>inputs[i].length-1)
    document.getElementById('errmsg').innerHTML += "Invalid email address  

    else
    document.getElementById(div).innerHTML += "Valid  

  }
}
```



Why?

Increased specialization requires more collaboration

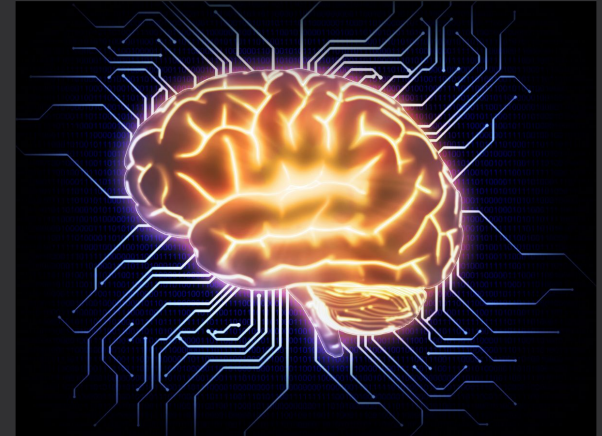
- ❖ Everyone has different knowledge and strengths
- ❖ Better solutions and better problem solving

Distributing cognitive load

- ❖ Catch mistakes and produce high-quality code

Accountability

- ❖ Not tempted to take shortcuts
- ❖ Not distracted by other tasks



Why?

Coding is communication with your machine.

Development is communication with your colleagues.

The most important thing your code does is communicate.

Many developers struggle to articulate their problems and talk to others about their code.

Pair programming forces you to practice coding vocabulary and talk through your problems.

How: *The Ingredients*

Two...

- ❖ living, breathing, awesome humans
- ❖ unique experiences and perspectives
- ❖ levels of coding expertise

One...

- ❖ GitHub repo
- ❖ code base
- ❖ person typing at a time



How: *The Roles*

The Driver

- ❖ Using keyboard and mouse
- ❖ Managing the editor

Talk to each other
constantly!

The Navigator

- ❖ Watching, advising, thinking
- ❖ Responsible for higher-level input to the code
- ❖ Catching errors, bugs, typos

Both must understand
whys and hows

How: *Do We Communicate?*

Scenario:

I'm driving and I feel like my navigator is not engaged.



How: *Do We Communicate?*

Don't:

Get angry, give up and do separate work.

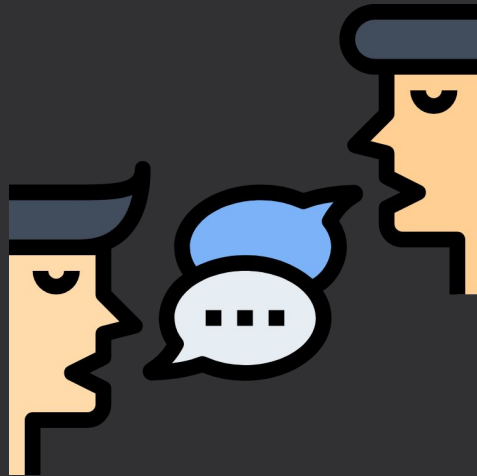
Action:

Suggest taking a break. When you return from your break, take 5 minutes to regroup and refine the plan of action. Together, write down your goal and the plan to accomplish this goal. Hold each other accountable to stick to the plan.

How: *Do We Communicate?*

Scenario:

My partner just made a suggestion and I know their idea won't work. I want to go in another direction.



How: *Do We Communicate?*

Don't:

Say, "No, that won't work."

Action:

Set a time box (ex. 5 minutes) and try it. There is only one way to find out.

Or, try it! Perhaps it will be a good way of explaining why something doesn't work;
Communicate the pros and cons to each approach.

How: *Do We Communicate?*

Scenario:

I am very new to coding and my partner seems to know way more than me. I feel like I am just following along and not learning for myself.

How: *Do We Communicate?*

Don't:

Sit quietly and feel defeated.

Action:

Be strong enough to put yourself in the vulnerable position of asking for help.

Ask your partner to slow down and talk through the process. Ask for clarification on code you don't understand and take notes of confusing points to review later.

How: *Do We Communicate?*

Scenario:

I have more coding experience than my partner. I feel like they are not contributing and I am left to do all the work.

How: *Do We Communicate?*

Don't:

Take on the challenge alone.

Action:

Remember, there is more to being a developer than being great at coding. Employers want people who are team players and good communicators. Look at this as an opportunity to improve your skills by helping and teaching your teammate.

How: *The Process*

- ❖ Switch roles every 10–25 minutes
 - OR –
- ❖ Pomodoro method
 - Decide on the task to be done
 - Set timer to 25 minutes
 - Work on the task until the timer rings
 - Take short break: 3–5 minutes
 - Switch roles

<https://timer.town/>
<https://double-trouble.wielo.co/>
<https://agility.jahed.dev/>
<https://tomato-timer.com/>



How: *The Process*

- ❖ Collaboration Tools: GitHub!
- ❖ Each pairing team will build a project together
- ❖ Each participant can use whatever development tools are most comfortable
- ❖ The driver will share his/her screen and have “hands on the keyboard”
- ❖ The navigator will talk through the coding process
- ❖ When it is time to switch, the project will be shared with your partner (more on this process tomorrow)
- ❖ **If you are not sharing your screen, you should not be coding**