



# The Art of: Pair Programming

**Presented By: Todd Merritt**

# Todd Merritt



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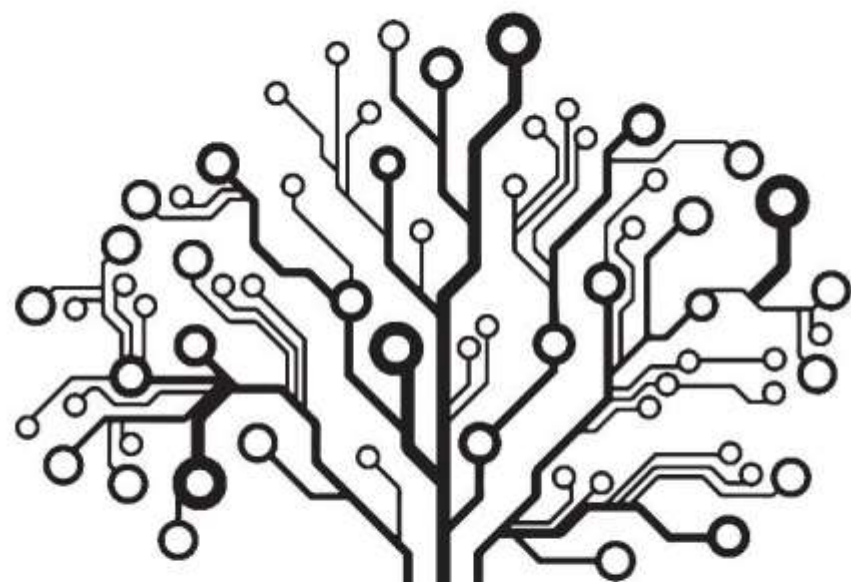
Twitter: @GeekInterface

LinkedIn:

<https://www.linkedin.com/in/tlmerritt/>

- Over 18 years of Development Experience
- Over 6 years Pair Programming Experience
- Worked with Small Startups to fortune 500 companies
- Interests:
  - App Design/Development
  - Database Development
  - Software Craftsmanship





**CODES TOCK**

EDUCATE | INSPIRE | CONNECT

**Premier**  
Staffing Partners

**Pilot.** FLYING 

 **GrapeCity**

 **Discovery**

 **Clayton**  
technology



CodeStock 2012

Talk: “You”

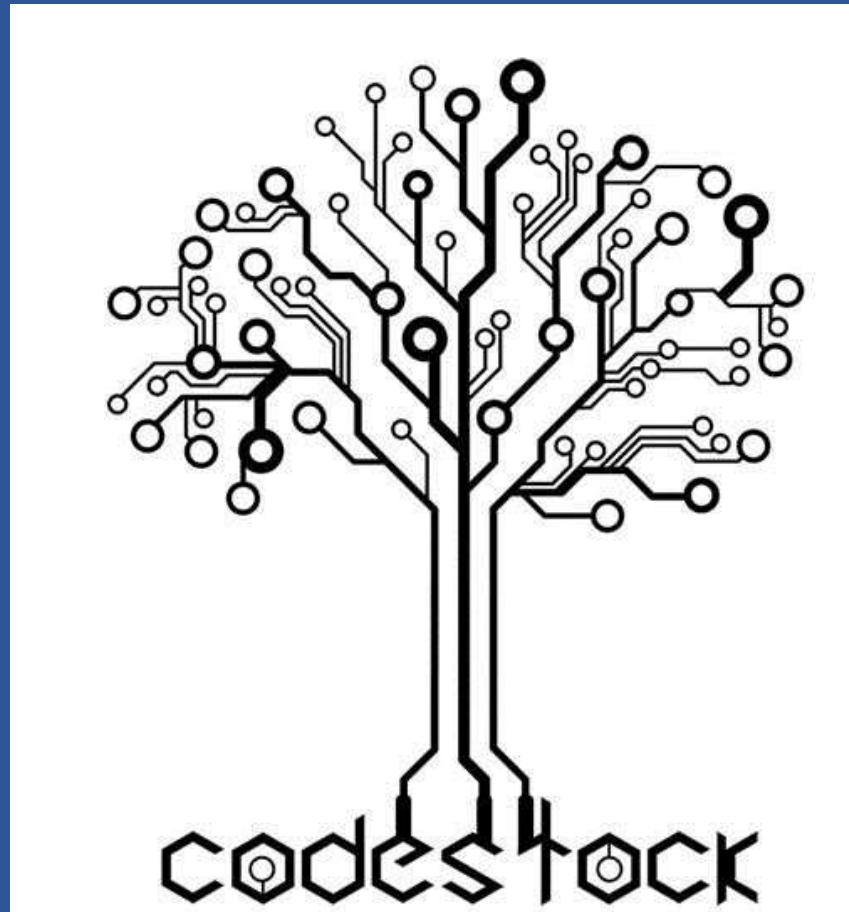
Speaker: Leon Gersing

“In order to learn, you must  
do it badly and fail”

- Leon Gersing  
@RubyBuddha

“In order to learn, you must  
do it badly in front of a  
crowd and fail”

-Leon Gersing  
@RubyBuddha




# CodeStock 2017



Disclaimers:

(Pairing  $\neq$  )

(Pairing  $\equiv \equiv$  )

A hammer with a black head and a wooden handle with a red band.



# WHEN YOU DON'T PAIR

It makes pandas sad

# Assumptions:





# Coding Is Social



# Pairing is a Discussion







The speed of programming is  
limited by thought not typing

(typeof(Programming) == "Work")

(Pair Programming == Pair Working)





The speed of **WORK** is  
limited by the speed of thought



# Pairing is not just for Programming

# What is Pair Programming?

# What is Pair Programming?

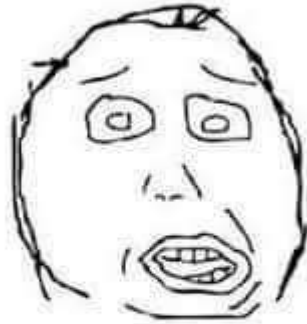
(Please Do Not Answer All At Once)

Pair Programming is a development technique where two programmers work together at the same work station at the same time.



**TLDR:**  
**(Programmer x 2) + WorkStation + Discussion**

# Programming alone



`c = a + b;`

# Programming while someone watches

```
/// <summary>  
/// A function, that adds two numbers  
/// </summary>  
/// <param name="a">First number</param>  
/// <param name="b">Second number</param>  
/// <returns>Sum of a and b</returns>
```



```
private int Add(int a, int b)  
{  
    // This line adds two ints  
    return a + b;  
}
```

# Why Should You Pair?

# Benefits of Pairing

- Collective Code Ownership
- Team Building
- Reduction in Calendar Time
- Knowledge Transfer
- Focus on Quality over Quantity
- Prevents Silos
- Constant Code Reviews
- Quick Turnaround on Feedback
- Prevents Technical Debt
- Reduces Poor Programming Practices

# What Makes A Good Partner?



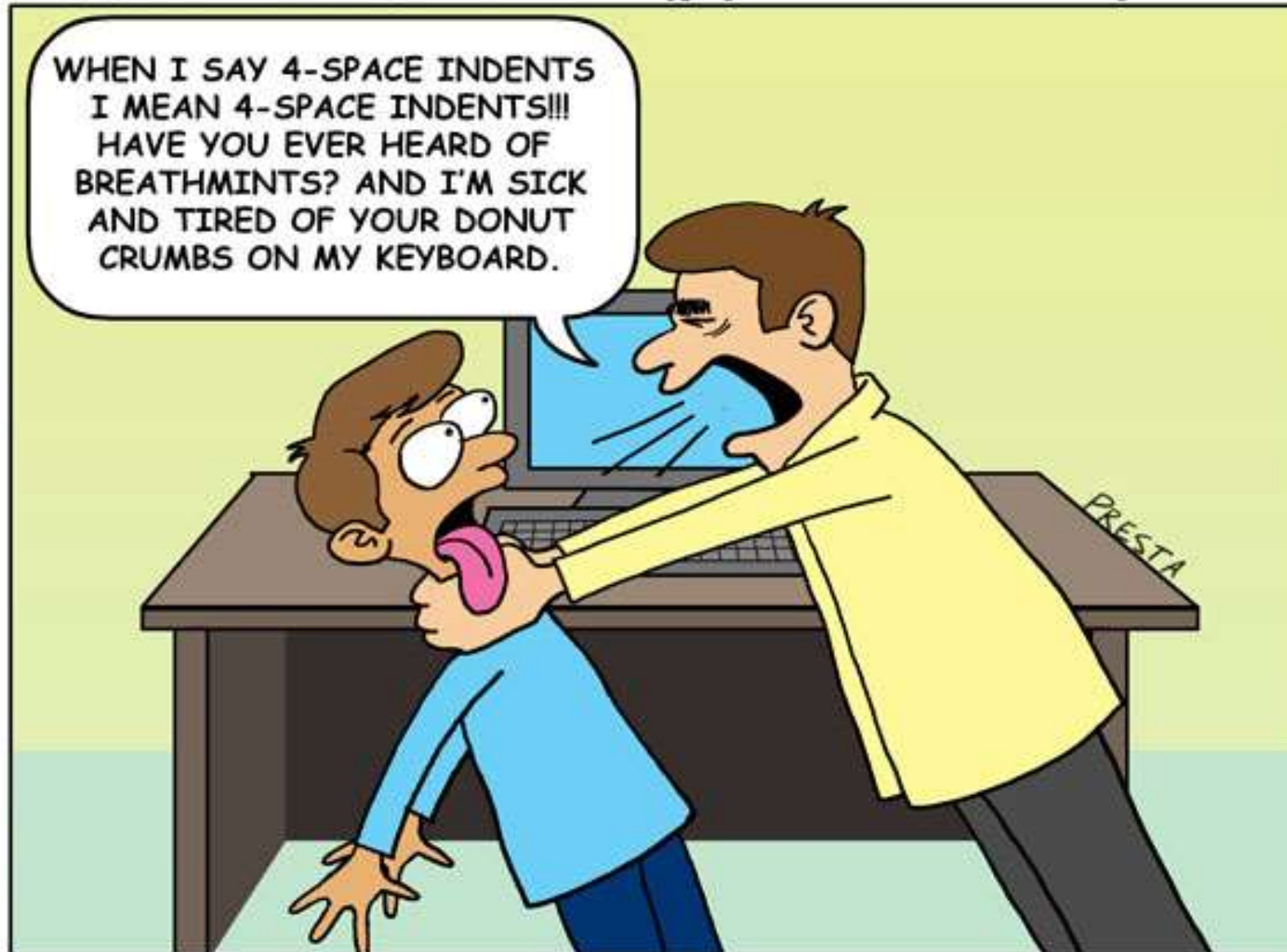
# Ideal Pairing Partner

- Good Communicator
- Willingness to Fail
- Asks Good Questions
- Accepts Productive Criticism
- Controls Ego
- Similar Schedules
- Trusts Partner

What Does NOT Make A  
Good Partner?

# Potential Issues with Pairing

- Personal Space
- Cultural Misunderstanding
- Scheduling
- EGO/Attitudes
- Change Resistant
- Control Freak
- Lack of Communication



The dark side of pair programming.

# What Do You Talk About When Pairing?

# Everything!

# Things to Discuss when Pairing

- Logic
- Design
- Refactoring
- Naming
- Order of Operation
- Requirements
- Estimates
- Anything related to System



# When Should You Pair?



# Complex Systems





# Mission Critical Systems





# Constant Change/ Volatile Systems





Shared Code\Libraries



# High Risk Deadlines



## Knowledge Transfer / Mentoring





# Onboarding Team Members

A person is holding a black clipboard with a silver clip at the top. The clipboard has a white sheet of paper with the word "RESUME" printed in bold, black, sans-serif capital letters. Below the title, there is some faint, illegible text. The person's hand is visible at the bottom of the frame. In the background, there is a wooden desk. To the left, a person's hands are typing on a laptop keyboard. To the right, there is an open notebook with a black cover. On the right page of the notebook, there is a black pen and a pair of black-rimmed glasses. The background is slightly blurred, showing other people in business attire.

**RESUME**

## Technical Interviews





# Technical Phone Screens

# Why Should You Pair?

# Common Reasons to Pair

- Fewer Defects
- Simpler Designs
- Faster Problem Solving
- Rapid Feed Back
- Knowledge Transfer
- Better Communication
- Enjoyable

When Should You NOT Pair?

# When Not To Pair

- Simple Tasks
- Non-Production Code Spikes
- Partner Is Sick (**Only Pair Virtually**)





Is Pairing is  
Instinctive?



# Code Reviews



A photograph of two men in a professional setting, likely a meeting or collaborative workspace. The man in the foreground is shown in profile, looking towards the left, with his hand resting on his chin in a thoughtful pose. He has a beard and is wearing a dark blue shirt. In the background, another man is visible, also in profile, holding a pen and looking at a whiteboard. The whiteboard contains some faint, illegible markings. The background is blurred, showing office lights and other equipment.

# System Architecture Design







Mentoring



# New Technologies and Methodologies





Production Support



Is There Only One  
Way To Pair?

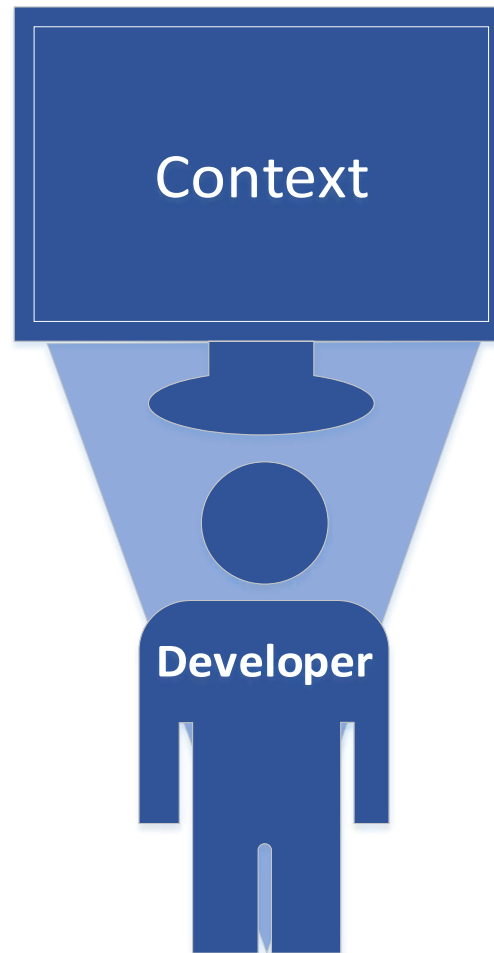
No, But Yes

What Are Some  
Styles Of Pairing?



Unpaired

# Unpaired





Unpaired

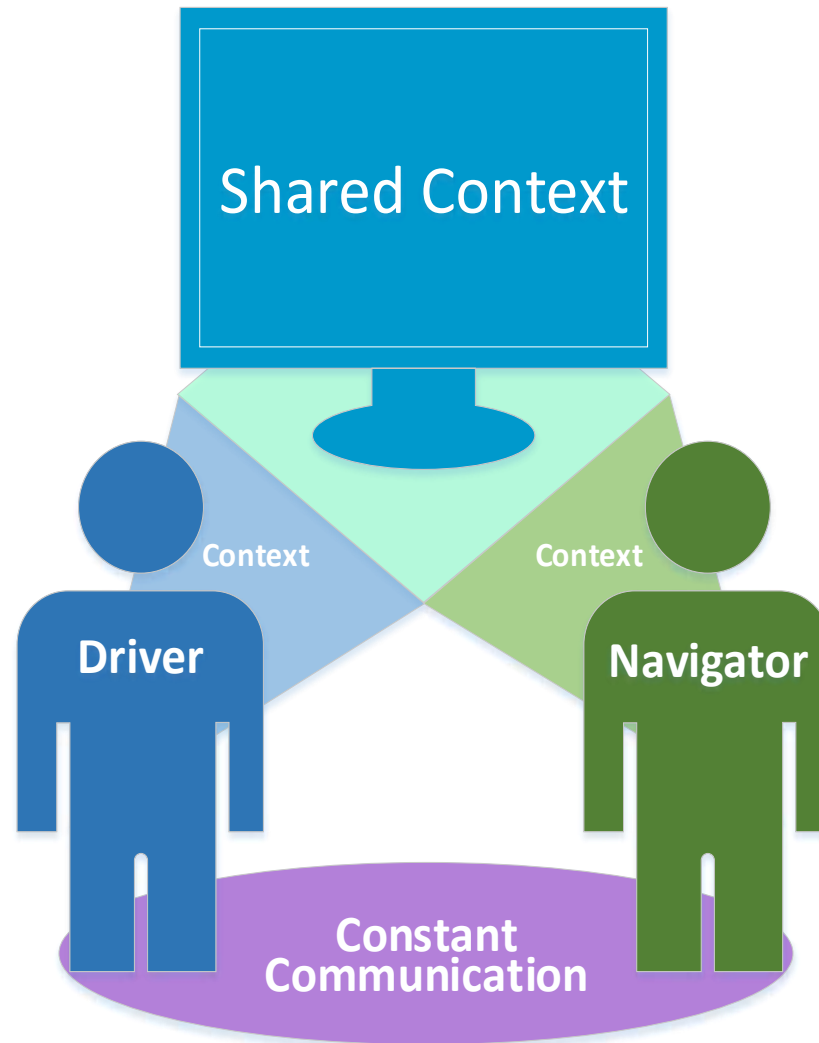




# Standard Pairing



# Standard Pairing





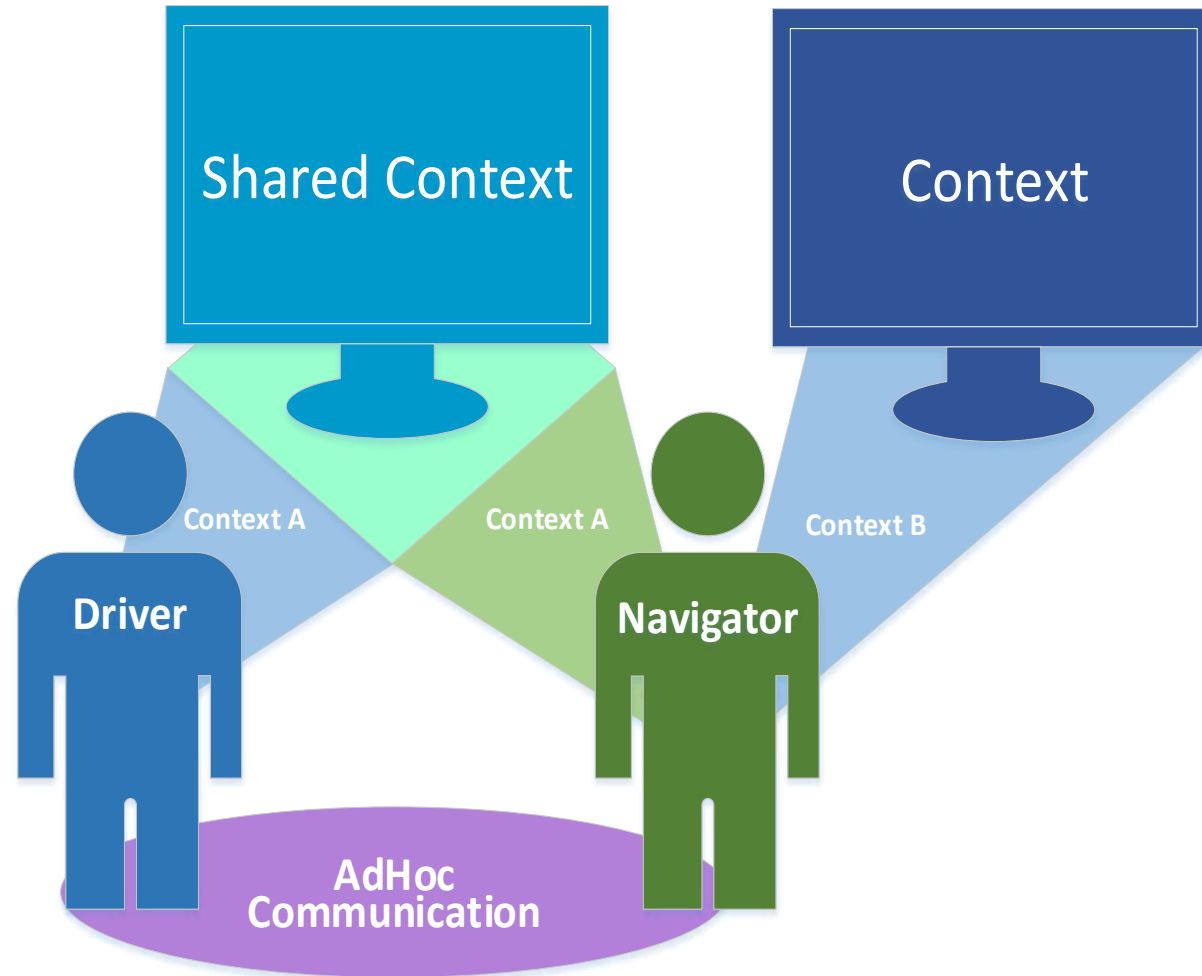
## Standard Pairing





## On Demand Pairing

# On Demand Pairing







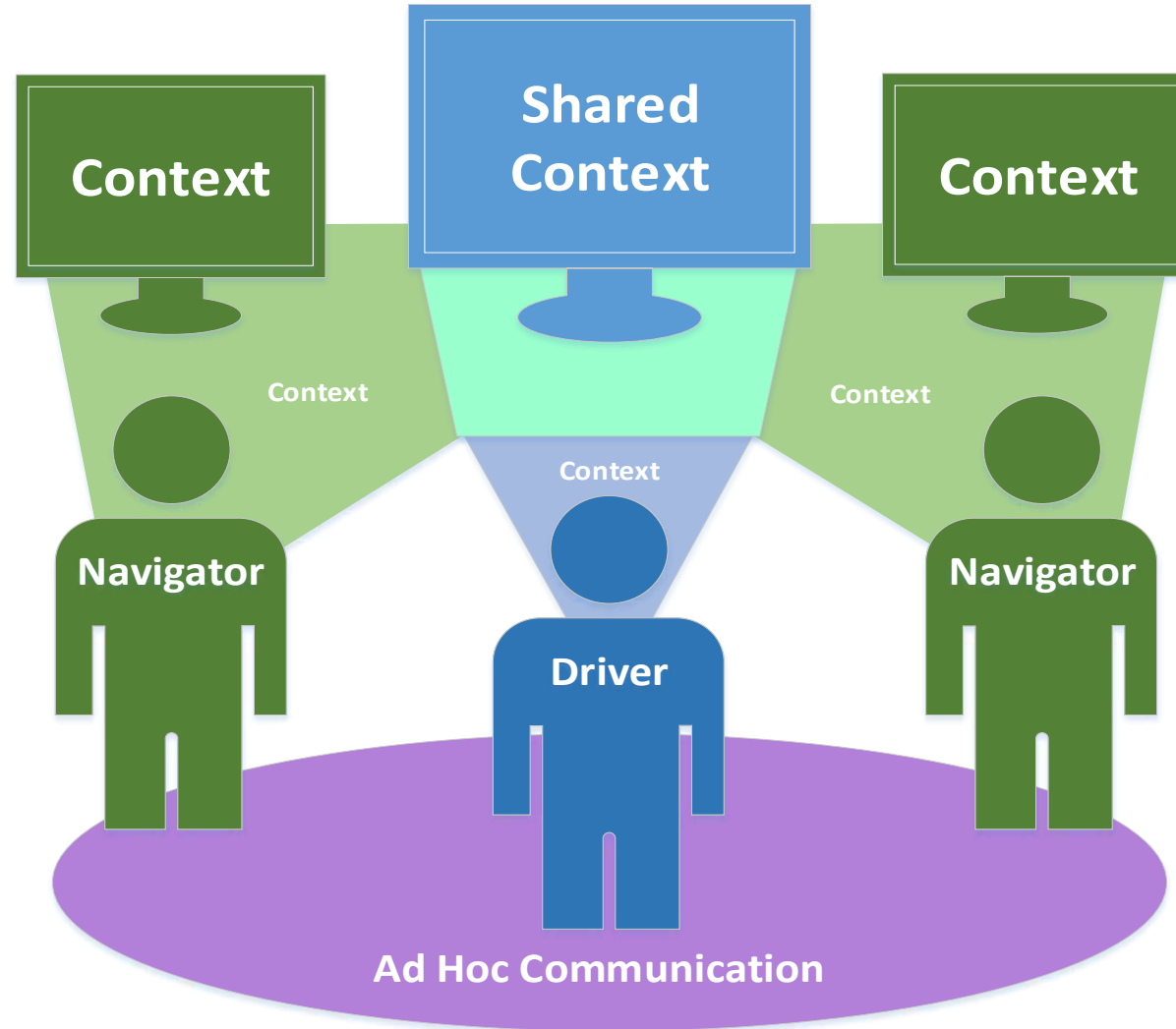
# On Demand Pairing





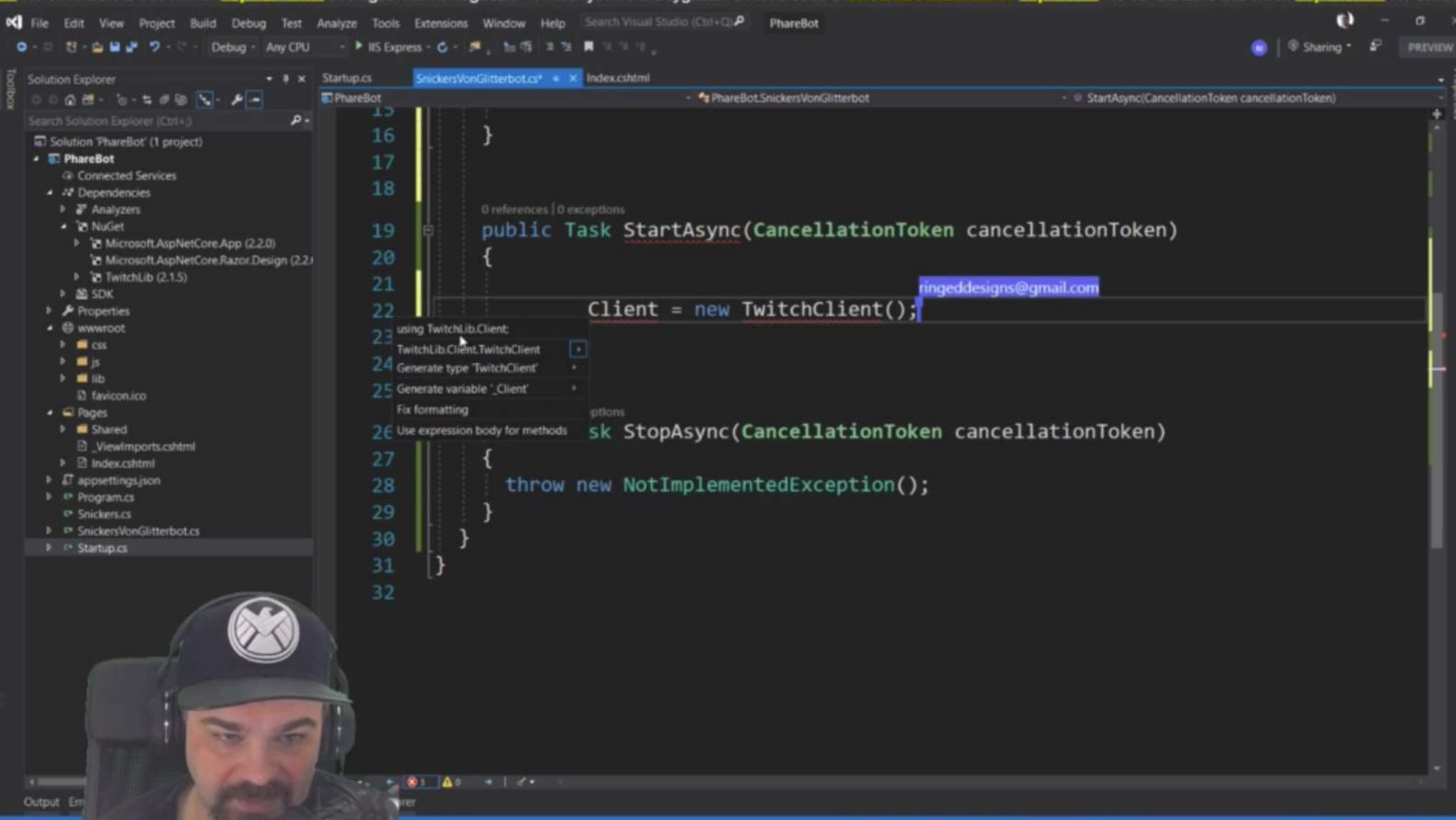
# Mob Paring

# Mob Pairing





0 contributors this month Top All Time: codingbandit 18 hugodahl 17 NotMyself 8 bradygaster 8 i-love-code 3 StreamDeckEmulator Top week: No contributors this week Top month: No contributors this month



PhareWings  
@pharewings

instances of VS/vscode share extensions/snippets?  
jaf1021 Good Morning!  
swiftress It's like watching my mother program  
svavablount (she doesn't use these often)  
spacecato everyone starts somewhere  
swiftress true enough  
ahoeftling this reminds me of a coding dojo  
codermat We are all with you -

DEVLEAD	731 BITS
PERRYATDIGITALOX	100 BITS
DEVLEAD	1500 BITS
DEVLEAD	1000 BITS



Jeffrey T. Fritz

5873 69 70.0↓

Rainbow Beard Build 2019

5873

7000

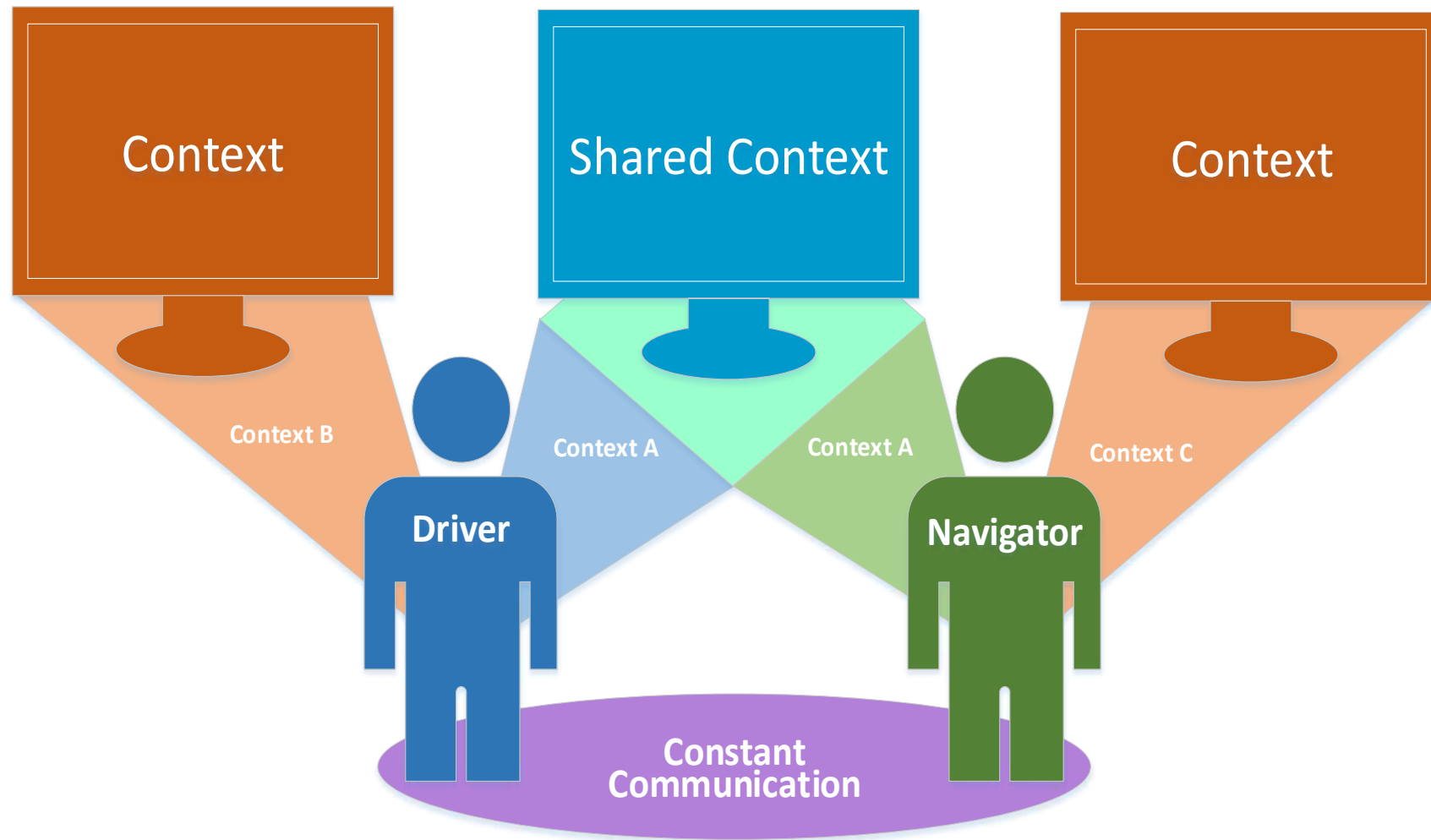
codestock

71



# Asynchronous Paring

# Asynchronous Pairing



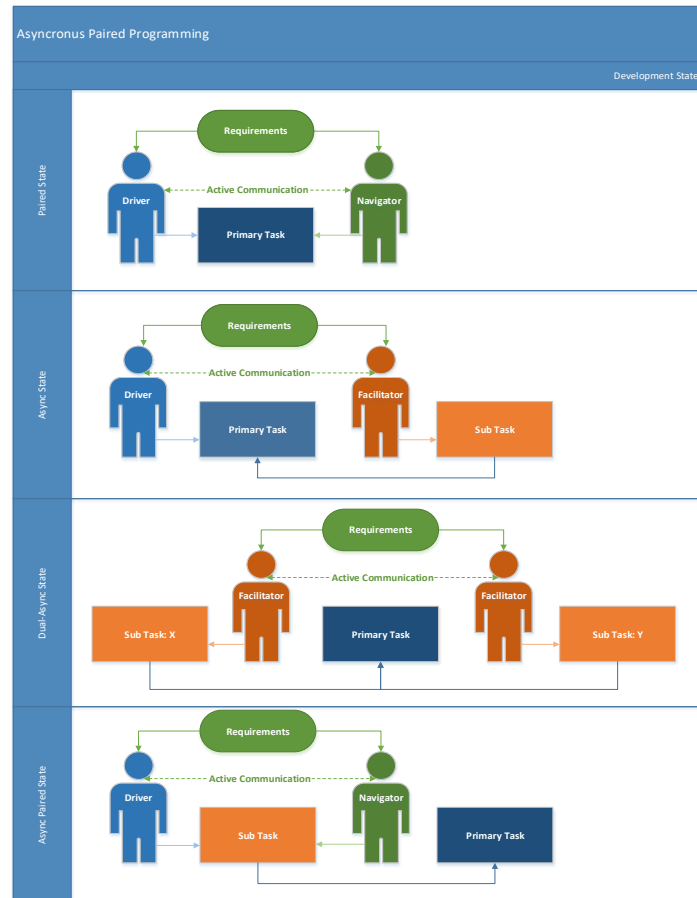




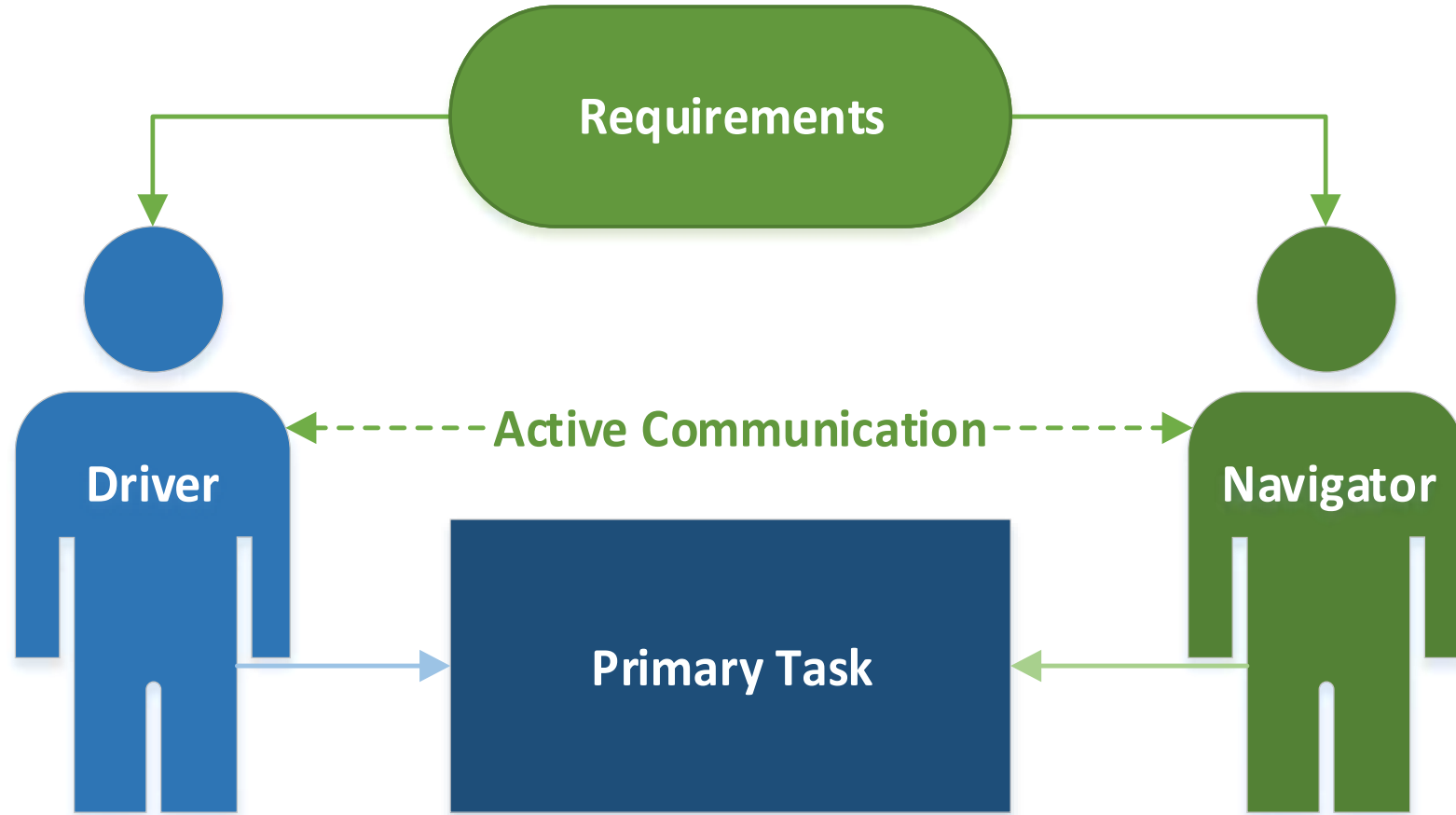
# Asynchronous Paring



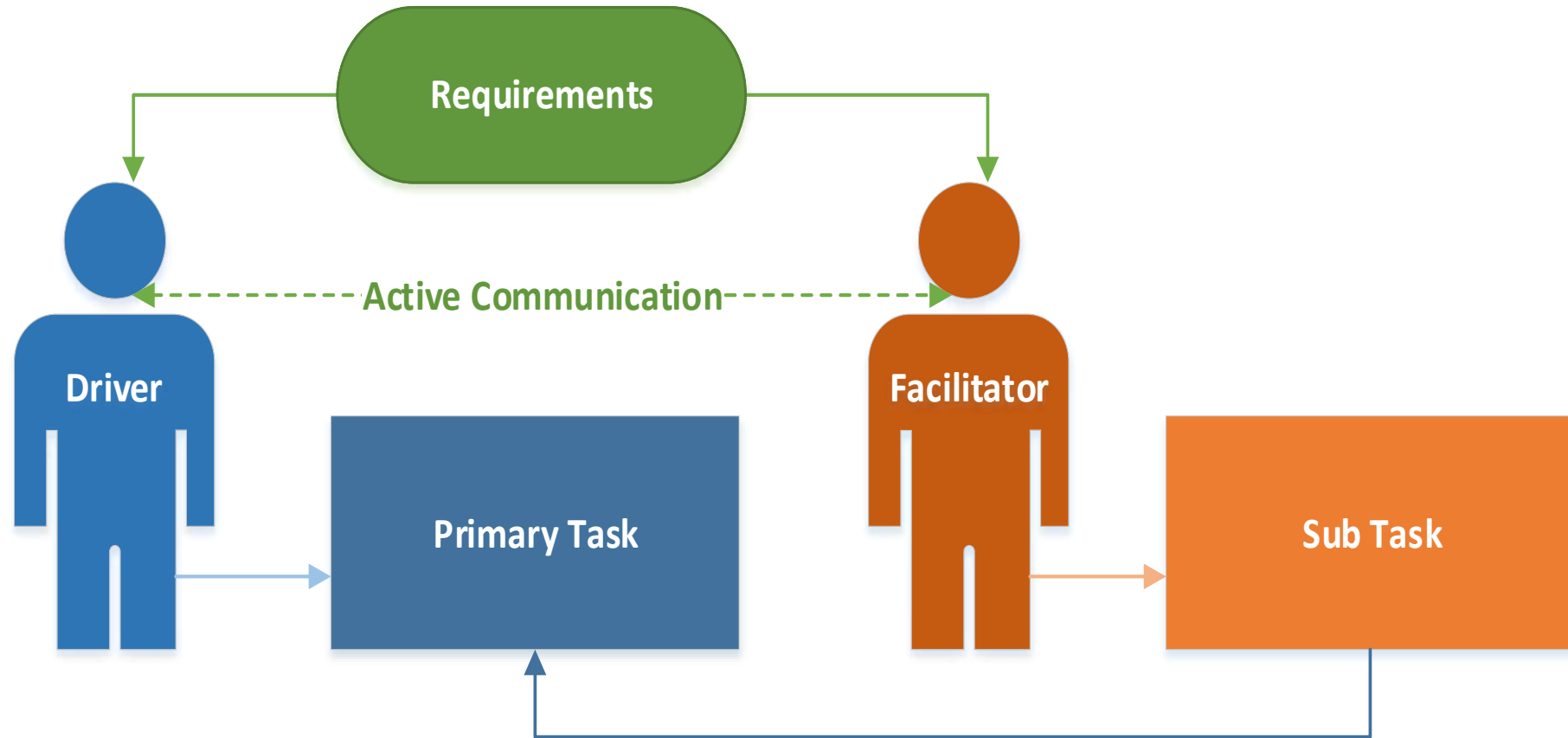
# Asynchronous Pairing States



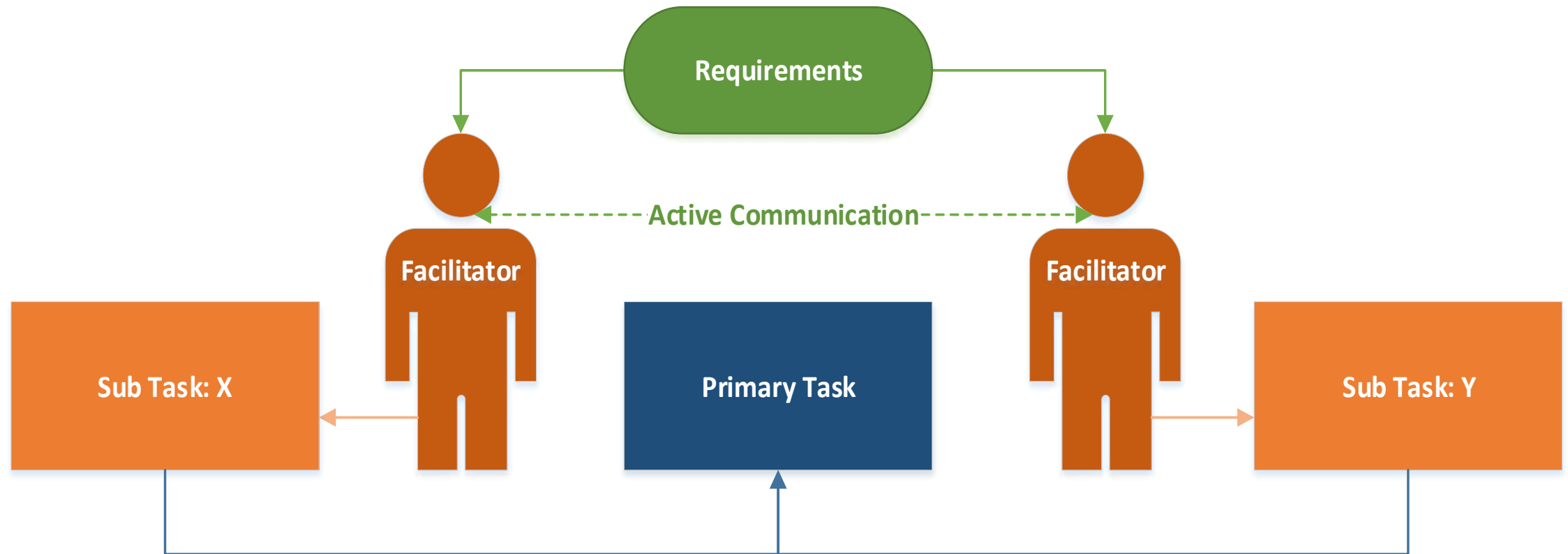
# Paired State



# Async State

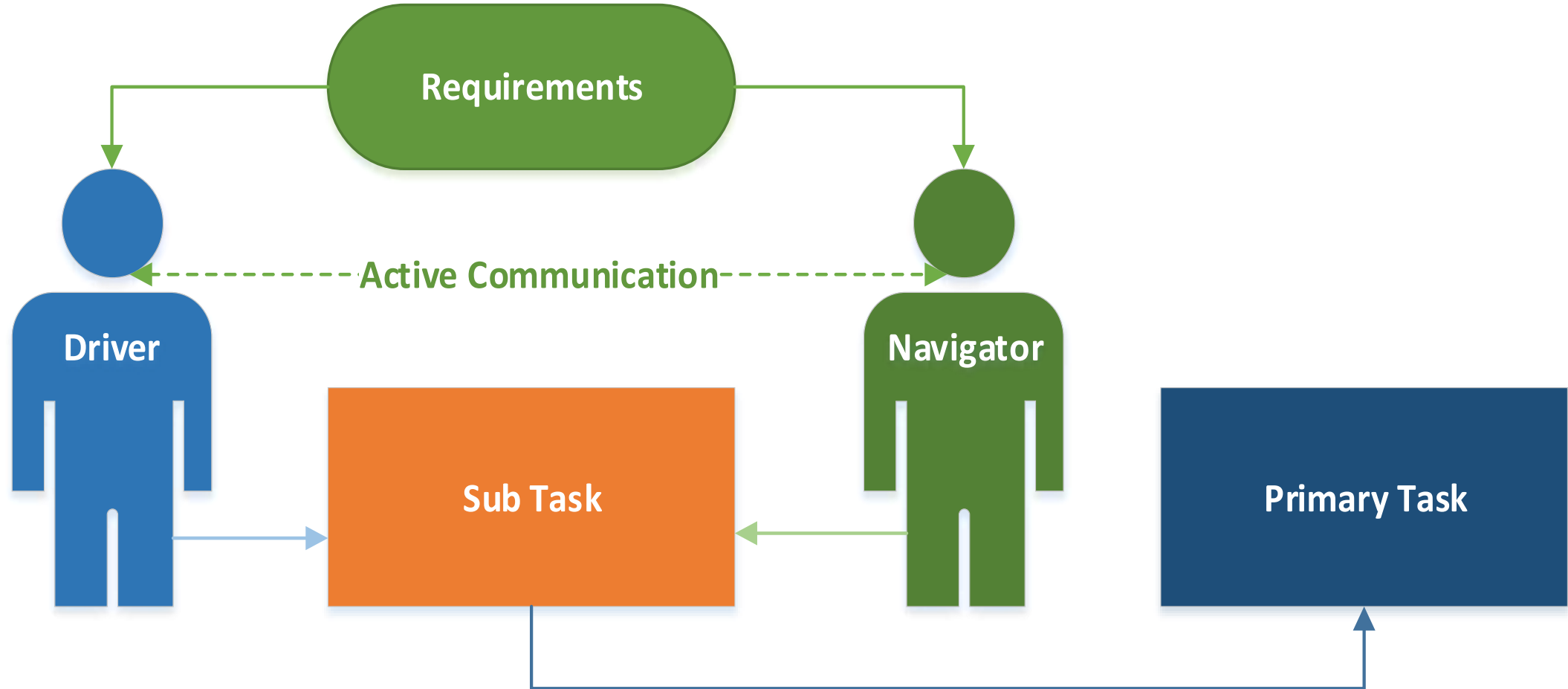


# Dual-Async State





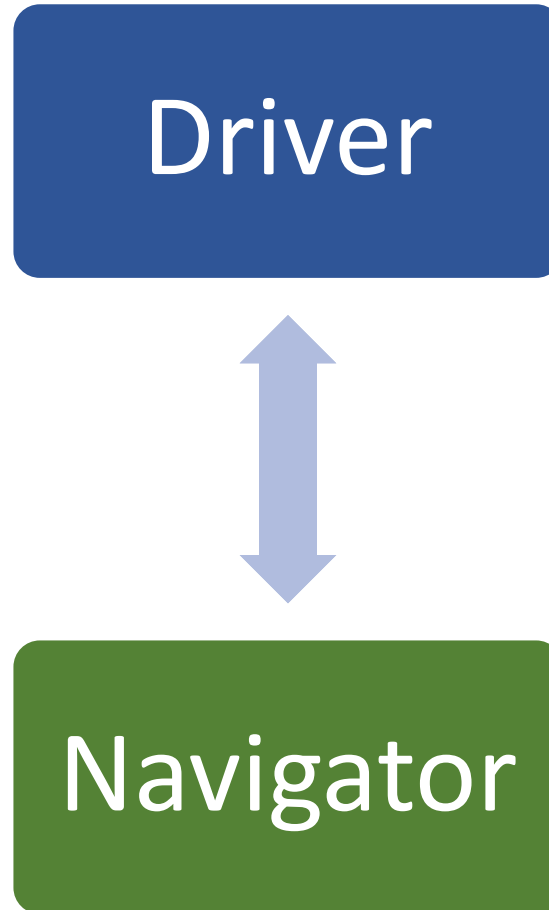
# Async Paired State



A photograph of two women in an office environment. The woman in the foreground, with blonde hair and wearing a blue and red plaid shirt, is looking down at a laptop screen with a slight smile. Another woman with blonde hair is leaning over her shoulder, also looking at the screen. In the background, a man with dark hair and glasses is working on a laptop. A semi-transparent blue horizontal band is overlaid across the middle of the image, containing the text 'Pairing Roles' in white.

# Pairing Roles

# Pairing Roles



# Pairing Roles

Driver

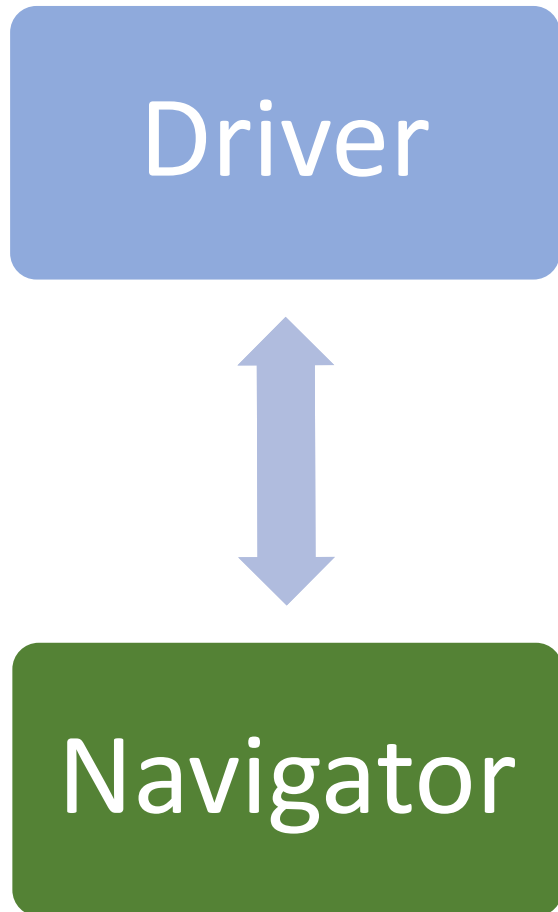


Navigator

- Controls Keyboard and Mouse
- Discuss Ideas and Concepts being coded
- Constantly communicating with Partner

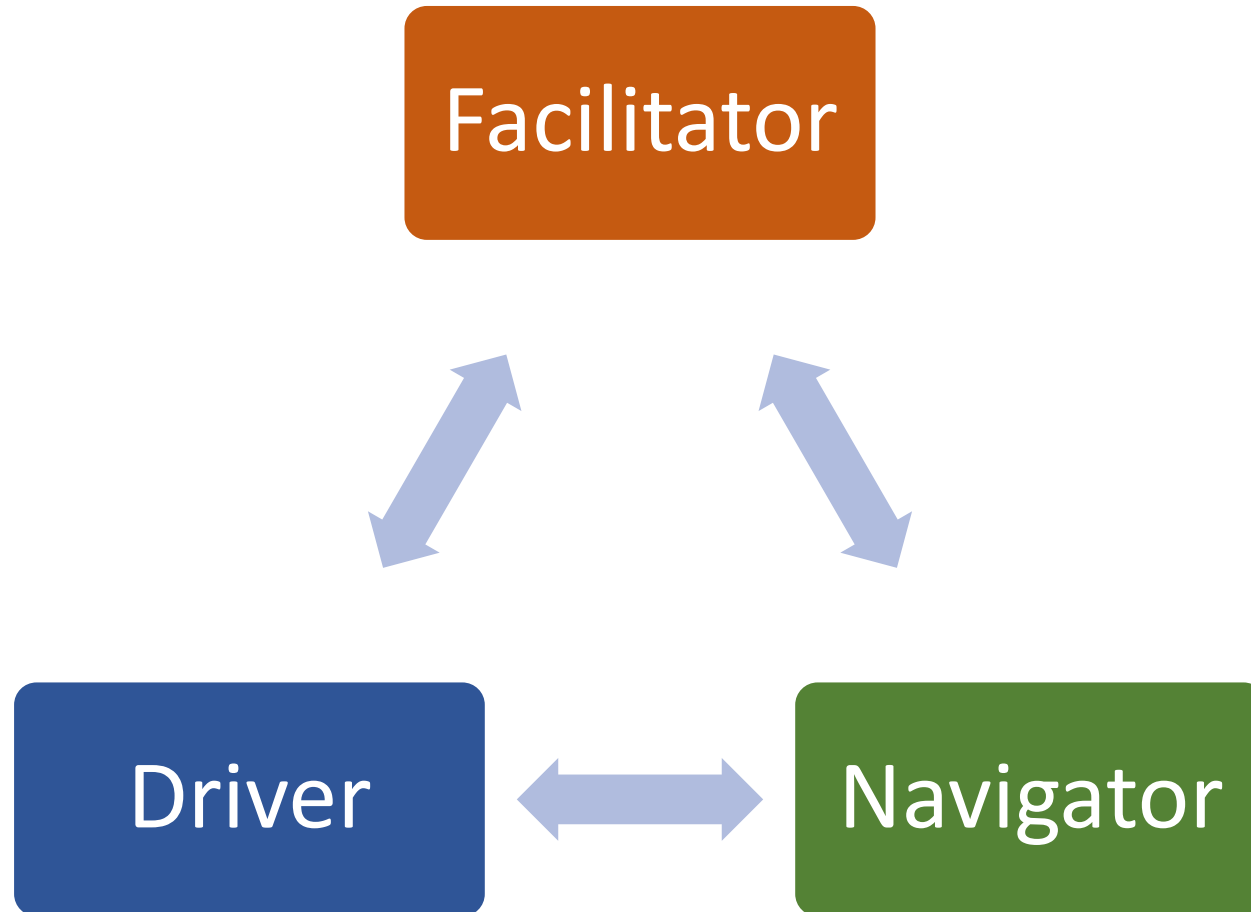


# Pairing Roles

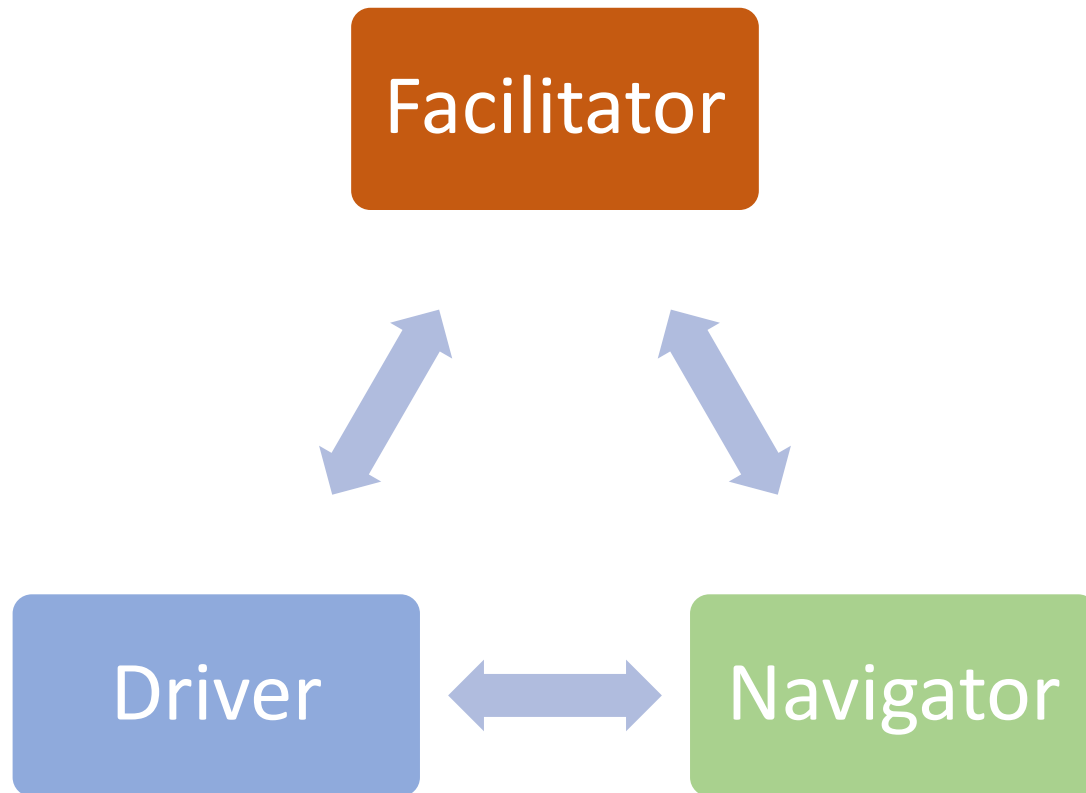


- Reviews Code
- Thinks Big Picture
- Discuss Ideas and Concepts being coded
- Constantly communicating with Partner

# Asynchronous Pairing Roles



# Asynchronous Pairing Roles



- Performs sub tasks related to the primary development task.
- Constantly communicating with Driver
- Constantly communicating with Partner

# Can Your Role Change?



## Time Box Switching





# Ping Pong Switching



# Ad Hoc Switching

# What Do I Need To Pair?





## Basic Environment for Pairing



Basic Environment for Each Asynchronous Pairing Partner






Take A Ways

(Pairing  $\neq$  )

(Pairing  $\equiv \equiv$  )

A hammer with a black head and a wooden handle with a red band.

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Questions? Comments?

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- Over 16 years of Development Experience
- Over 6 years Pair Programming Experience
- Worked with Small Startups to fortune 500 companies
- Interests:
  - App Design/Development
  - Database Development
  - DevOps – Sometimes