

DESIGN THINKING: HOW DO YOU DESIGN DEVELOPER PROGRAMMES?

ELISHA TAN, FOUNDER

TechLadies

@ELISHATAN



DESIGN THINKING: HOW I GOT MY SHIT TOGETHER.

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AGENDA

- Introduce myself
- Programme design thinking framework
- How to use framework

HI, MY NAME IS ELISHA

- Graduated with a Psychology degree
- Learned coding from the community
- Launched and failed said startup
- Where are all the women?
- Started TechLadies!
- Build dev communities for fun and profit

Check out my
mad tech skills yo



A large group of diverse women are gathered in a workshop or meeting room. They are smiling and engaged, with several laptops open on tables in front of them. The room has large windows and a bright, professional atmosphere. The women are dressed in a variety of styles, reflecting a diverse community. Some are sitting at tables with laptops, while others are standing and talking. The overall mood is positive and collaborative.

TechLadies is a community-led initiative for women to connect, learn, and grow in the tech industry.

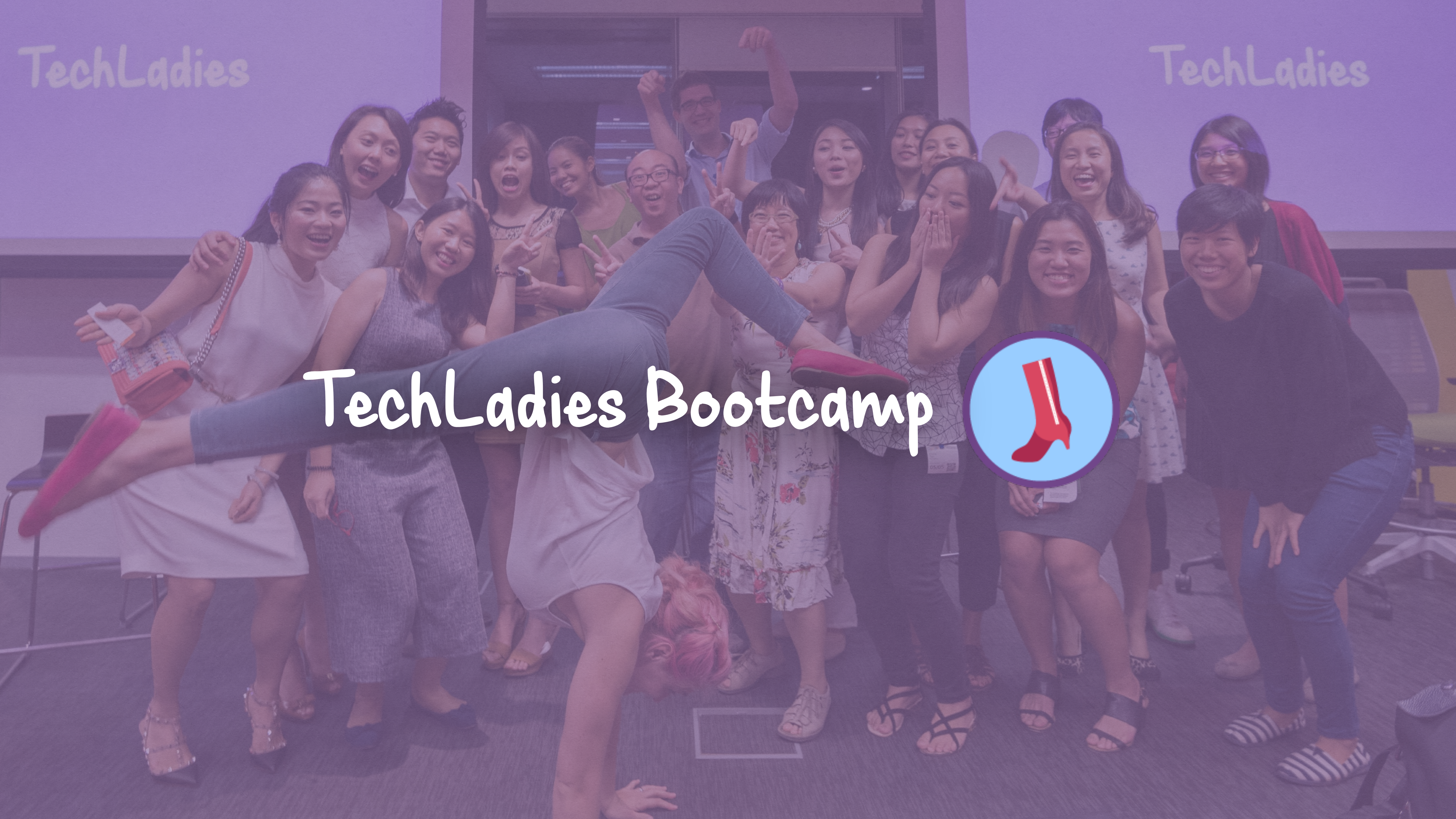


~4000 members in Asia
2 physical chapters
>500 ladies trained
>10 ladies in engineering roles

TechLadies

TechLadies

TechLadies Bootcamp



CREATE PRODUCTS FOR STARTUPS?

NETWORKING EVENTS?

TECH TALKS?

HACKATHONS?

PM BOOTCAMP?

MENTORSHIP?

AGILE?

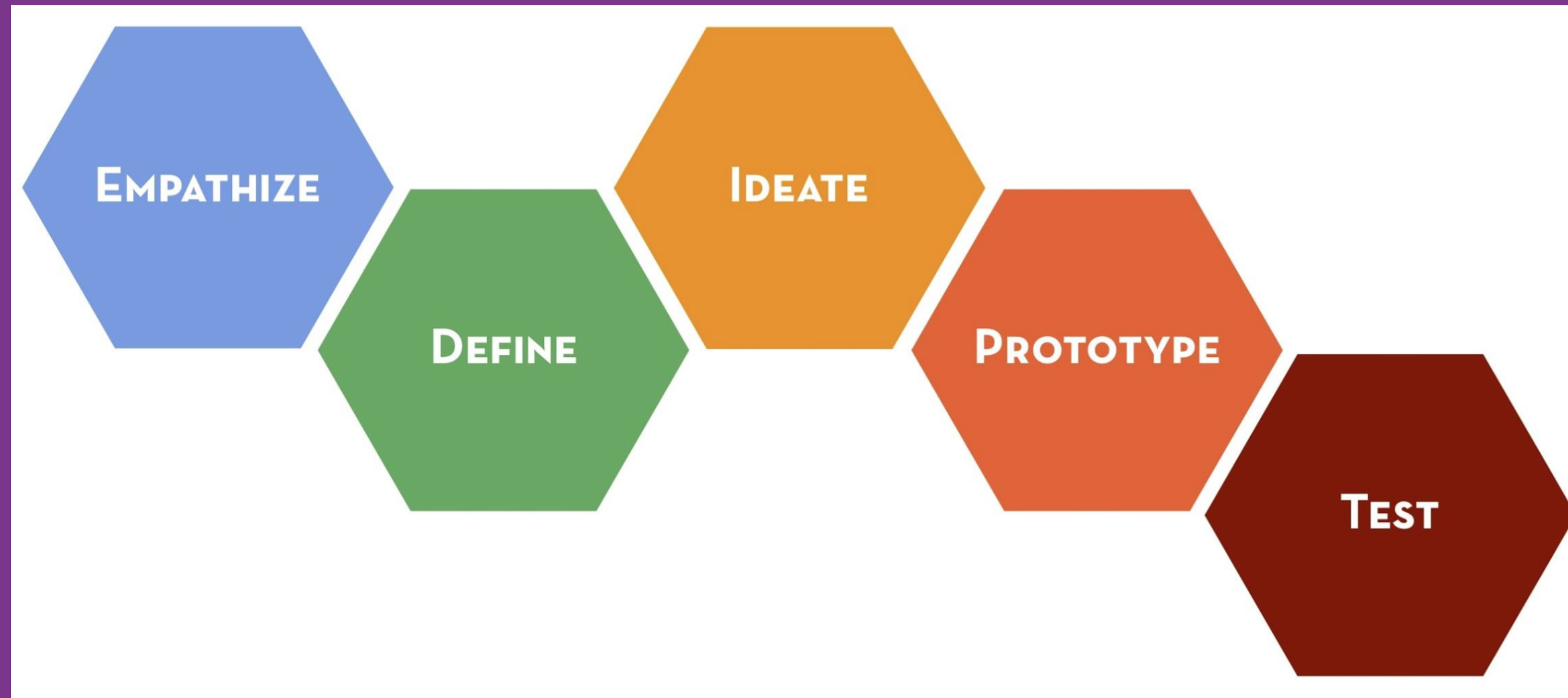
STUFF FOR GIRLS?

WORKSHOPS?

There's got to be a better way to design
programmes for developers!

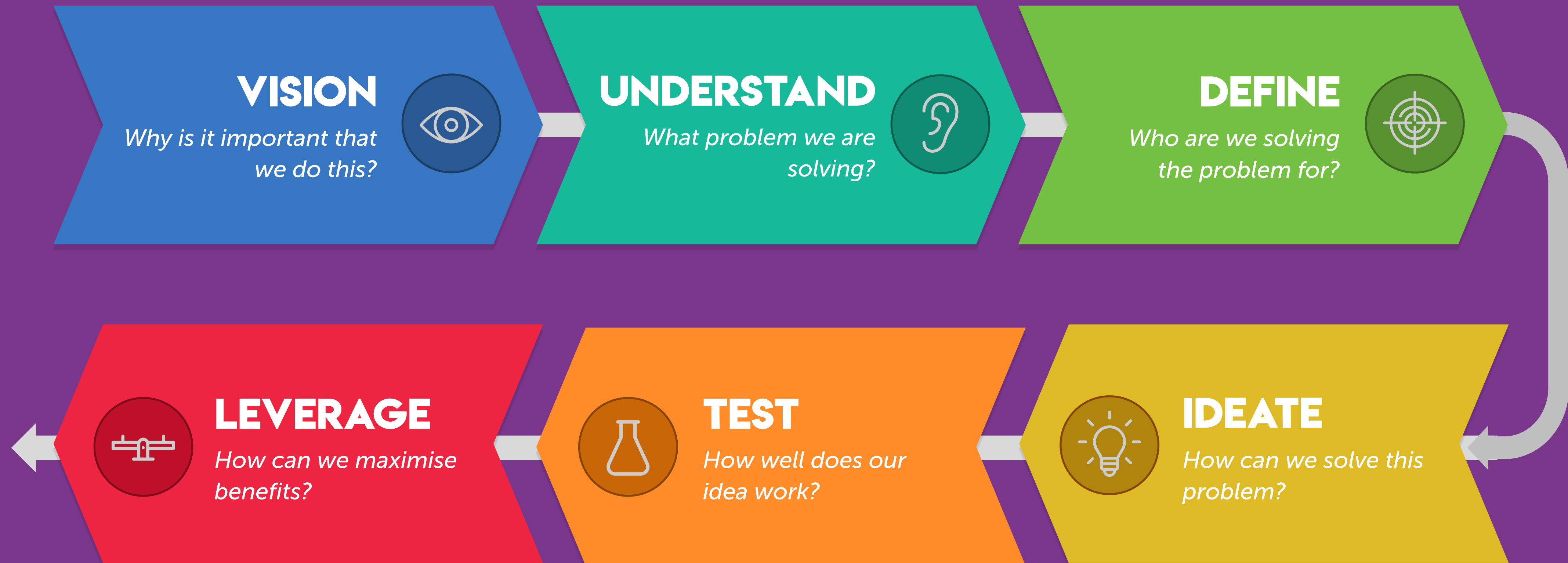
Product design thinking process
is well-defined

PRODUCT DESIGN THINKING



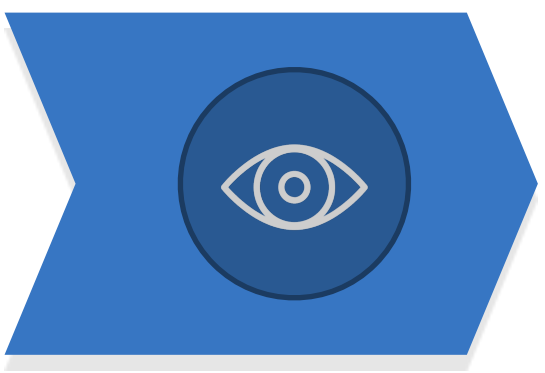
How might we adapt the product design thinking for programmes?

PROGRAMME DESIGN THINKING: 6-STEP PROCESS



PROGRAMME DESIGN THINKING STEP 1: VISION



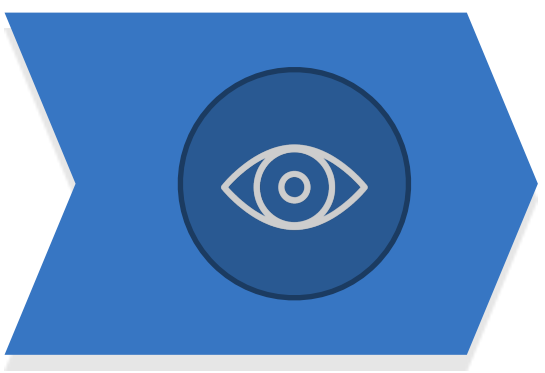


VISION

Why are you doing this?

What are your goals?

What are the desired outcomes?

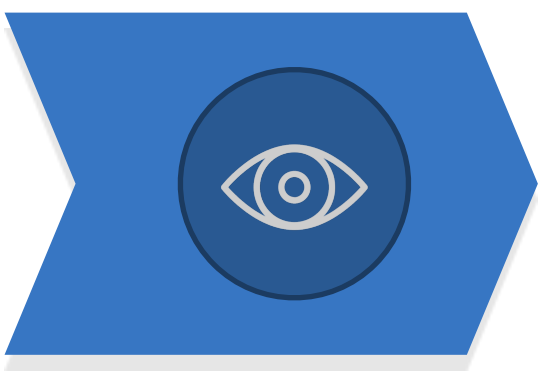


METRICS

- impressions
- signups
- downloads
- sentiment
- attendees
- mailing list
- jobs created
- MAU/DAU
- ARPU
- adoption
- commits
- PRs
- interviews
- people trained



We aim to increase women's participation by creating opportunities for women in the tech industry.

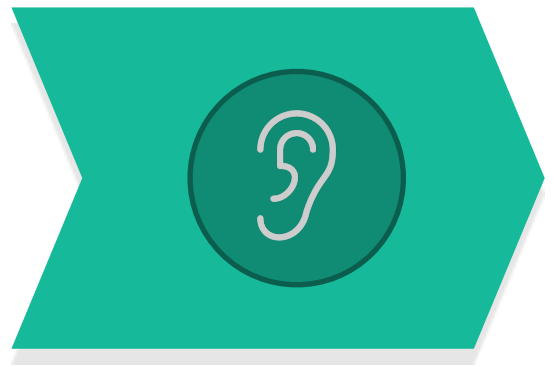


LET'S BUILD A BOOTCAMP!

VISION: Create opportunities that increase women's participation in tech.

PROGRAMME DESIGN THINKING STEP 2: UNDERSTAND



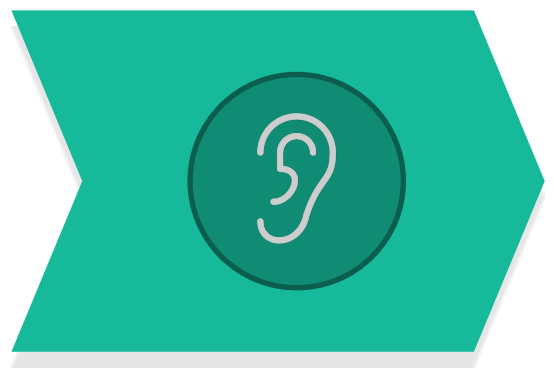


UNDERSTAND

What is the problem?

How are people solving the problem now?

Why are the current solutions inadequate?



RESEARCH

- Online
- Talk to “competitors”
- Participant Observation
- Surveys
- Interviews
- Focus Groups
- Experiments
- Secondary Data Analysis

CODING GIRLS

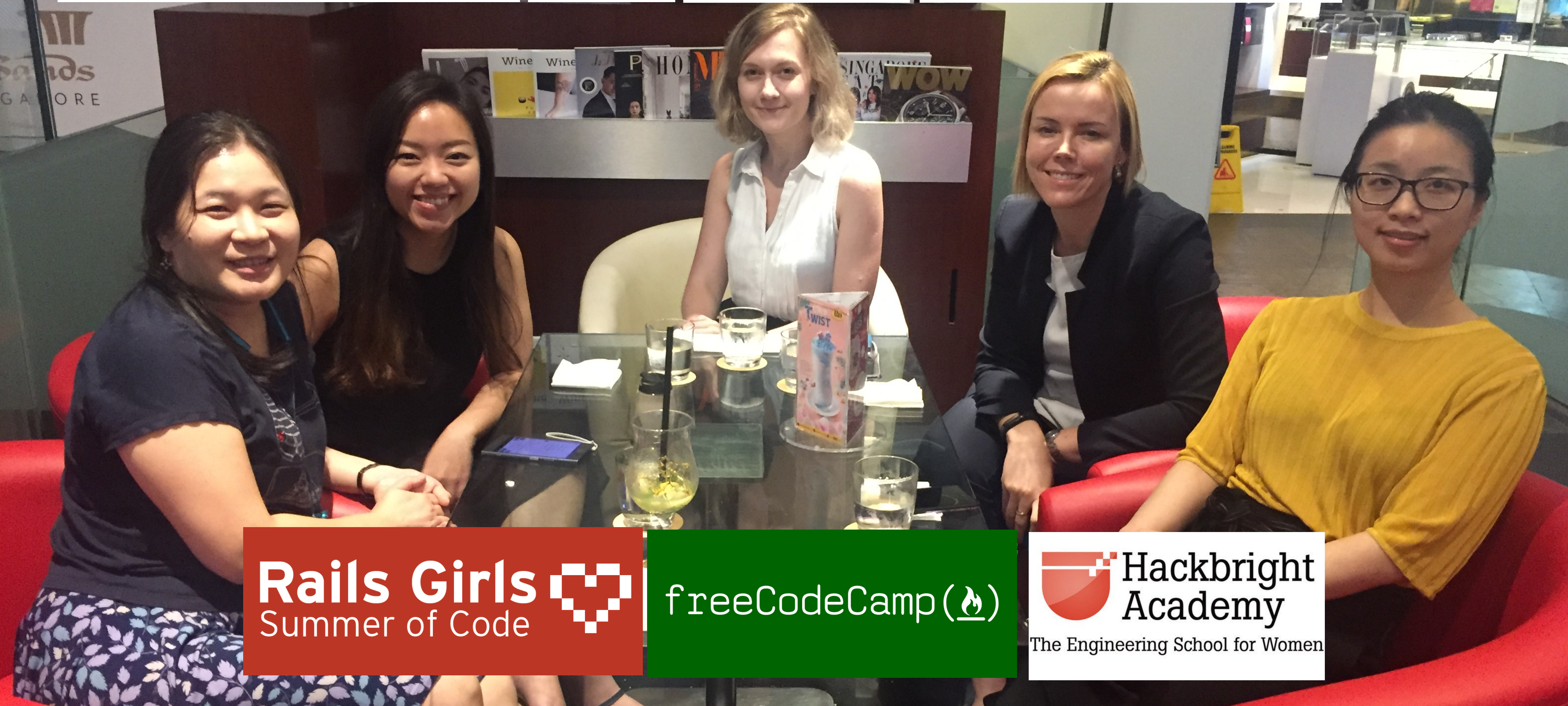
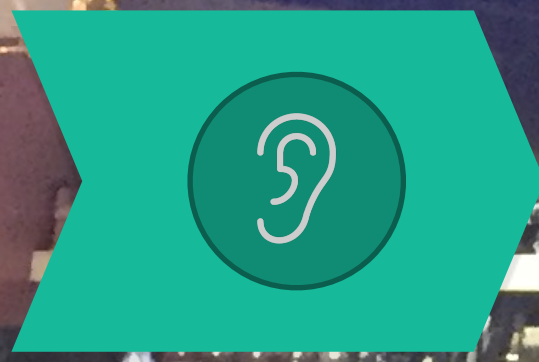


she loves data

WOMEN WHO
CODE
SINGAPORE



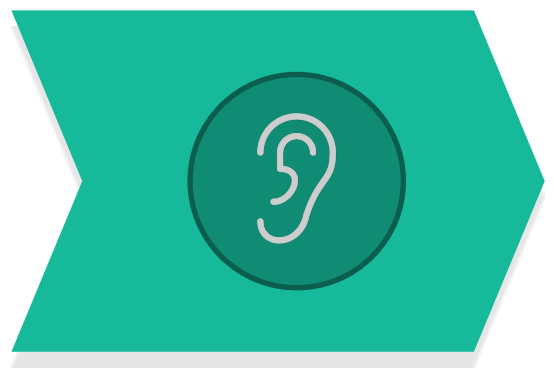
FEMALE
FOUNDERS



Rails Girls
Summer of Code

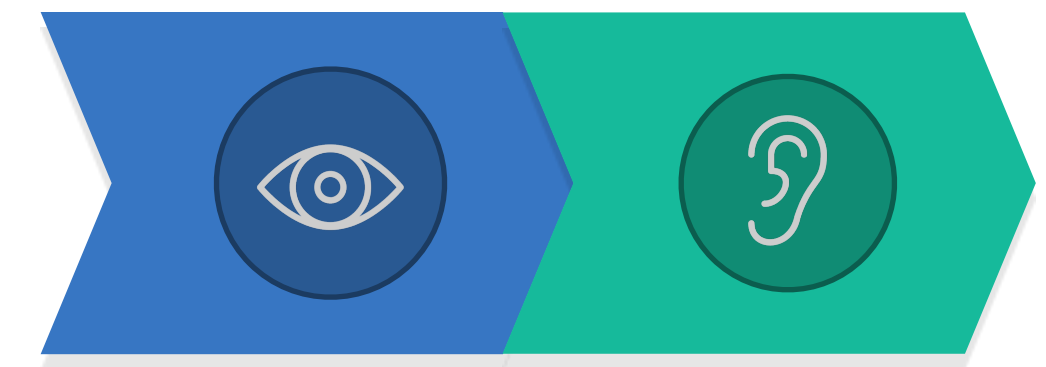
freeCodeCamp

 **Hackbright
Academy**
The Engineering School for Women



RESEARCH

- Not everyone learns to become software engineers
- Hard to stay disciplined learning from online sources
- Workshops don't go in-depth
- "Free" leads to low completion rates
- Programming bootcamp requires people to quit their jobs

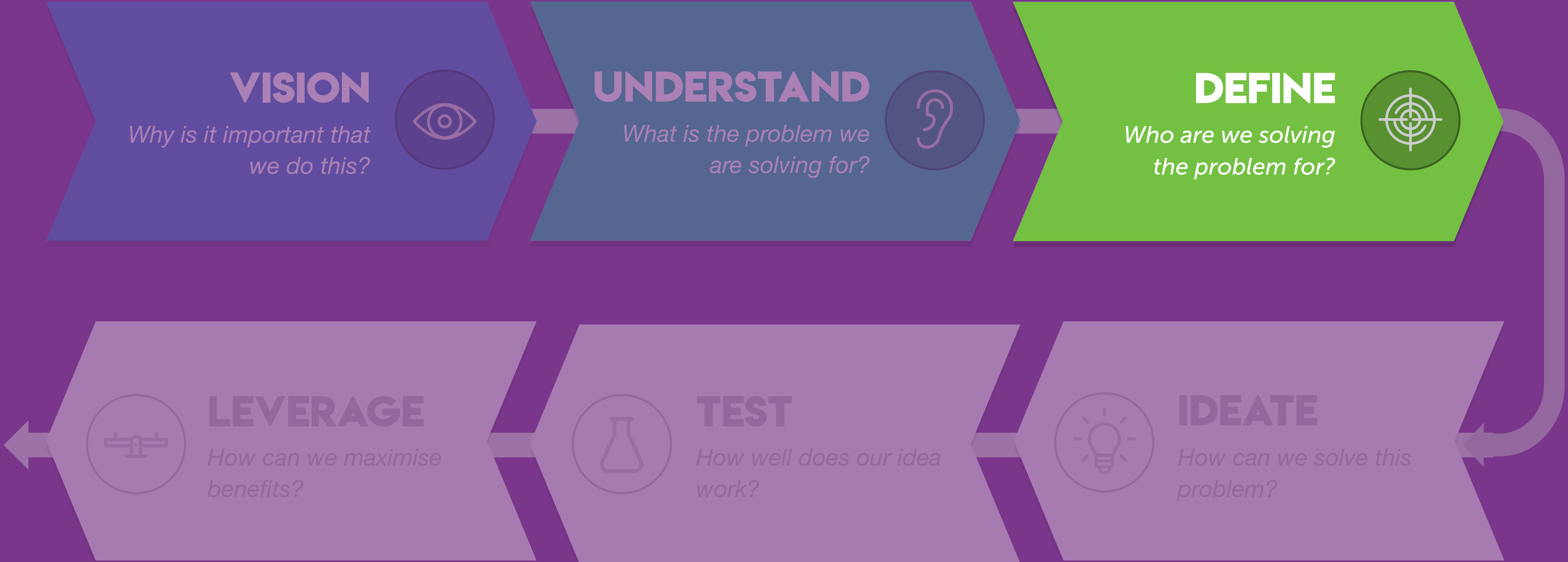


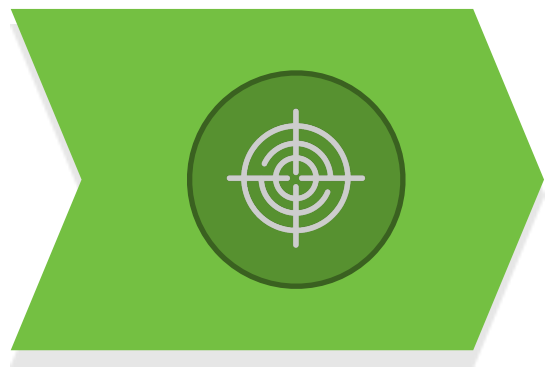
LET'S BUILD A BOOTCAMP!

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UNDERSTAND: Market gap exists for women who want to switch careers.

PROGRAMME DESIGN THINKING STEP 3: DEFINE



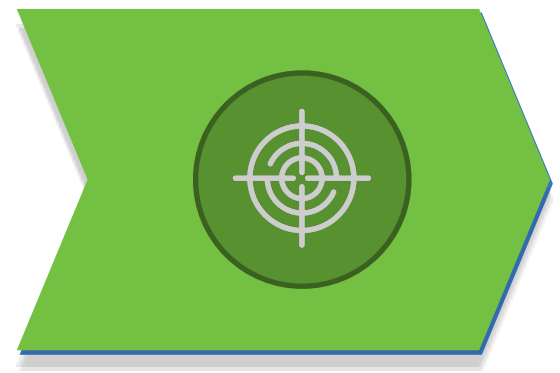


DEFINE

Who is the target audience?

What are their dreams and challenges?


Where can you reach them?



USER PERSONA

- Name
- Photo
- Bio
- Demographics: Age, sex, income, location
- Personality Traits
- Motivations
- Goals and frustrations
- Preferred social media channels
- Tech skill
- Myers-Brigg personality types
- Hobbies and interests
- Education level
- Job responsibilities/duties
- Shopping and product research habits

Jill Anderson



"I'm looking for a site that will simplify the planning of my business trips."

AGE: 35
WORK: Regional Director
FAMILY: Married, 1 Child
LOCATION: Austin, Tx
ARCHETYPE: The Frequent Flyer

Organized Practical
Protective Hardworking

Bio

Jill is a Regional Director who travels 4-8 times each month for work. She has a specific region in which she travels, and she often visits the same cities and stays at the same hotel. She is frustrated by the fact that no matter how frequently she takes similar trips, she spends hours of her day booking travel. She expects her travel solutions to be as organized as she is.

Personality

Introvert Extrovert
Analytical Creative
Loyal Fickle
Passive Active

Preferred Channels

Chrome
Mobile
Email
Traditional Ads

Goals

- To spend less time booking travel
- To narrow her options quickly

Frustrations

- Too much time spent booking - she's busy!
- Too many websites visited per trip
- Not terribly tech savvy - doesn't like the process

Motivations

Price
Comfort
Convenience
Speed
Loyalty/Miles

Brands

KAYAK Expedia
ACE HOTEL Lyft

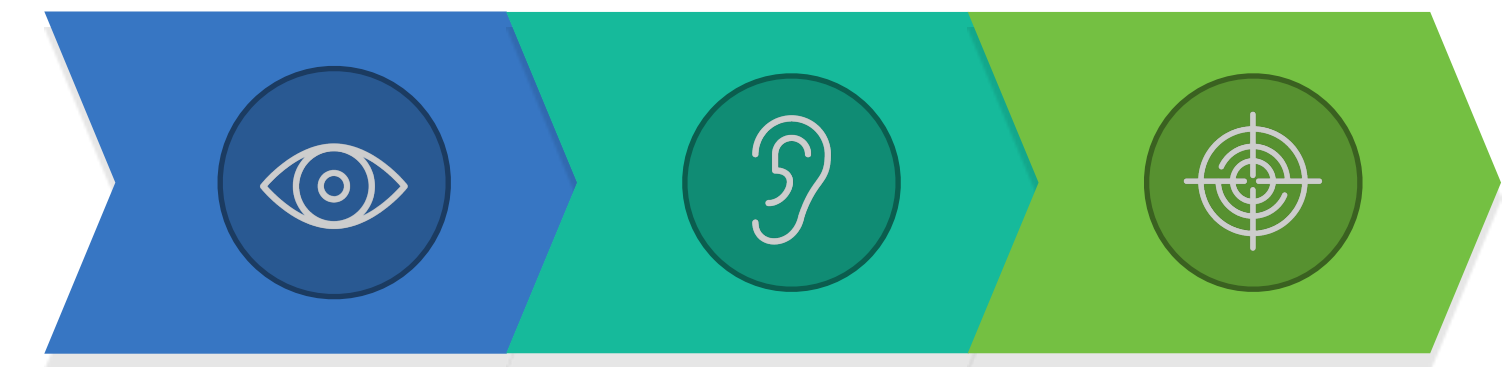




USER PERSONA

- Clara Cheung
- 32 year old
- Currently works full-time in a non-tech industry
- Wants to make a career switch into the tech industry
- Not formally trained in CS
- Unable to quit her job to join a programming bootcamp
- Learning programming online (books, MOOC) and workshops, but need something more intensive
- Uses Github, Stack Overflow





LET'S BUILD A BOOTCAMP!

VISION: Create opportunities that increase women's participation in tech.

UNDERSTAND: Market gap exists for women who want to switch careers.

DEFINE: Women, without formal CS education, who are actively trying to switch careers into tech.

PROGRAMME DESIGN THINKING STEP 4: IDEATE





IDEATE

What are all the possible ideas?

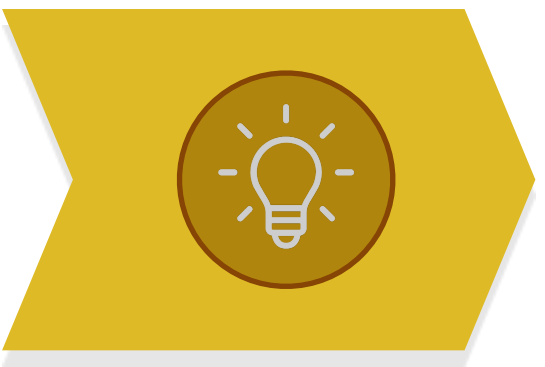
Which is the "best" idea?

What idea gives you the shortest feedback loop?



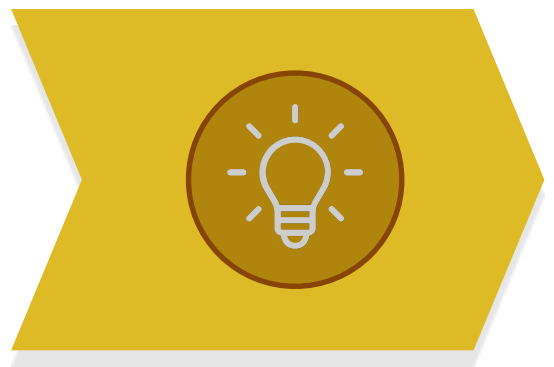
IDEATION METHODS

- Encourage a brain dump of ideas then vote
- Everyone writes an idea down and have the team evaluate/add onto an idea
- Each participant brainstorms individually and merge all the ideas into one large idea map.



DERIVING THE BEST IDEA

- Help women become software engineers
- Learn by doing
- Create a real product, not small prototypes
- Something more intensive than workshops



TechLadies Bootcamp is a 12-week part-time **accelerated learning programme** designed to help **women with some basic programming background** become professional programmers. Ladies are **guided by industry experts to create products for non-profit organizations.**





LET'S BUILD A BOOTCAMP!

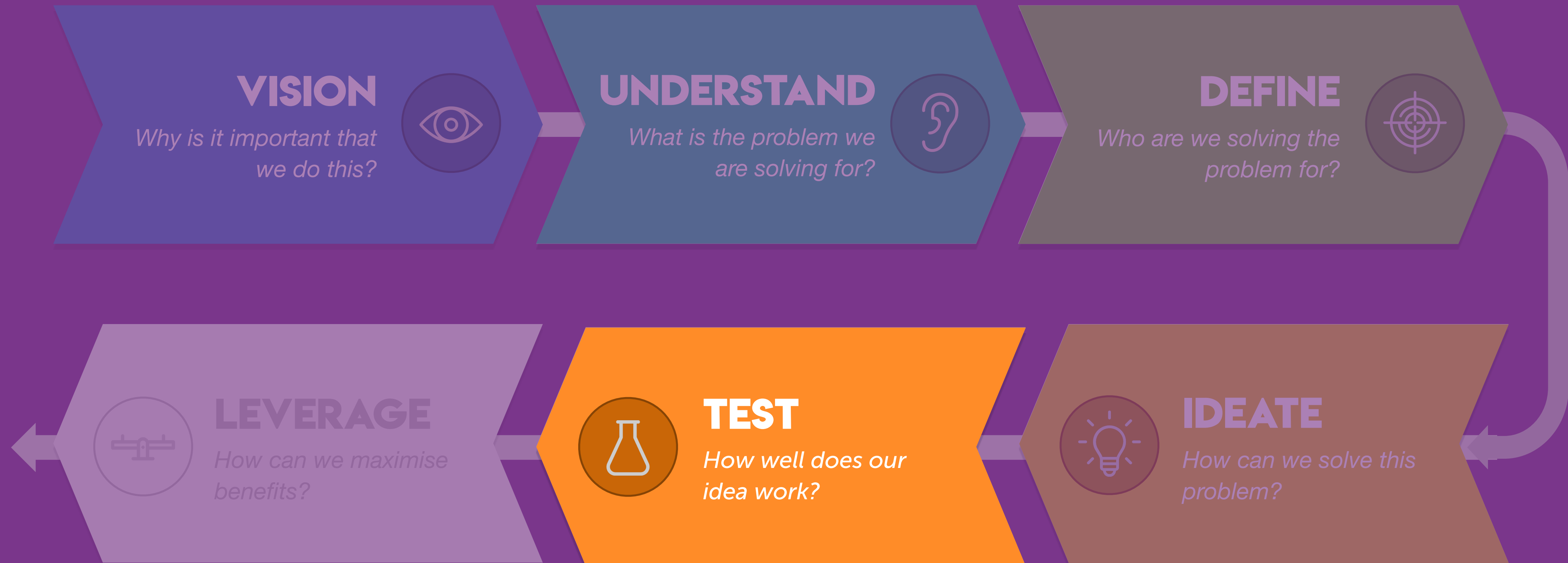
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PROGRAMME DESIGN THINKING STEP 5: TEST





TEST

What is the best way to test this?

What are the risks involved?

What did you learn?



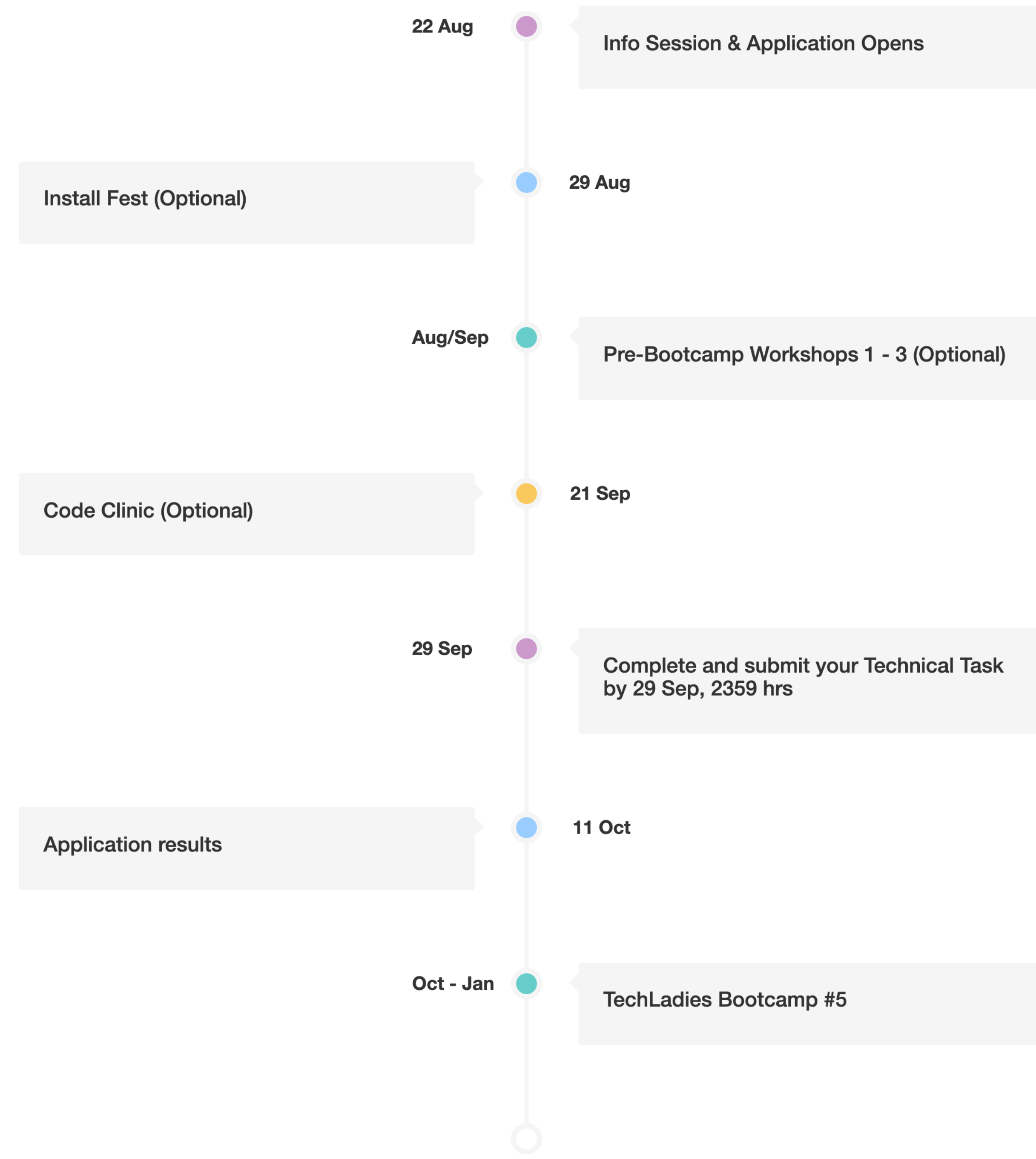
TESTING METHODS

- Solicit feedback from users
- Run a small event
- Create a prototype
- Call it a pilot



TechLadies

Bootcamp #3 Grad Party + Birthday BASH!





Meet Clara – Fashion Businesswoman, Curious Introvert, TechLady

by Elisha | Nov 3, 2016 | Interviews, Team TYA | 0 comments

The TechLadies Bootcamp is a 10-week part-time accelerated learning program designed to help women with some basic programming background become programmers. Participants are guided by industry experts, creating products for non-profit organizations. 15 ladies were chosen for the TechLadies Bootcamp #2. In this blog series, we will be sharing more about their backgrounds and learning journeys. Hopefully that'll inspire you to start learning how to code!



LESSONS LEARNED

- It works! 30% of graduates found software eng jobs and internships
- Secret sauce? Objective + Structure + Community
- People want to help but need direction



If you could tell a story about yourself in one or a few sentences, what would it be?

A very socially awkward but curious introvert, that asks 'why?' too much. It is hard to convince me not to do something once I've set my mind on it.

Oh also, I like puns and I struggle with mornings.

What are you currently working as?

I have been running my online boutique selling self-designed apparel for about 5 years now. It is extremely challenging to manage all facets of the business and be 100% self-disciplined/motivated, but has been a fantastic learning experience. I don't think any office job would have given me the experience and knowledge I gained whilst struggling without guidance through these years.

What sparked your interest in learning how to code?

I guess some part of me always loved web development. When I was a teenager, I built websites on Geocities for my adopted virtual pets to 'live' in. I promise this is cooler than it sounds. What got me hooked on web development was the immediate gratification programming provided — I could insert a code snippet and have the result rendered on the page instantly. To this day, I'm still awed by the magical process of transforming semi-gibberish into functional and useful websites that anyone can see on the WWW.

I wasn't exactly a model student in school, and performed dismally for my A Levels. This severely limited my options in university and I ended up studying Project & Facilities Management – something I had neither passion nor interest in. After graduation, I worked at a desk job for an unfulfilling year before deciding to take the leap and start my own business.

Again, fashion wasn't an industry I had particularly keen interest in. After 4+ years, my motivation to persist started waning quickly. I



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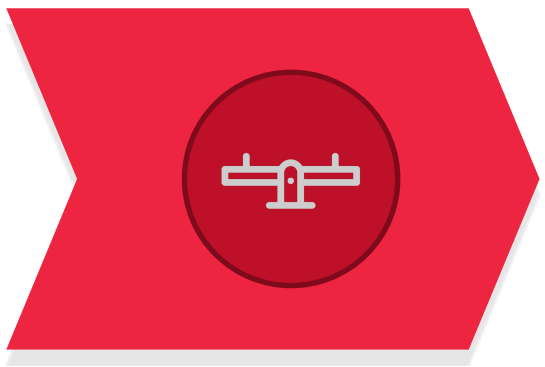
DEFINE: Women, without formal CS education, who are actively trying to switch careers into tech.

IDEATE: Paid part-time programming bootcamp building products for NGOs.

TEST: Yay it worked!

PROGRAMME DESIGN THINKING STEP 6: LEVERAGE



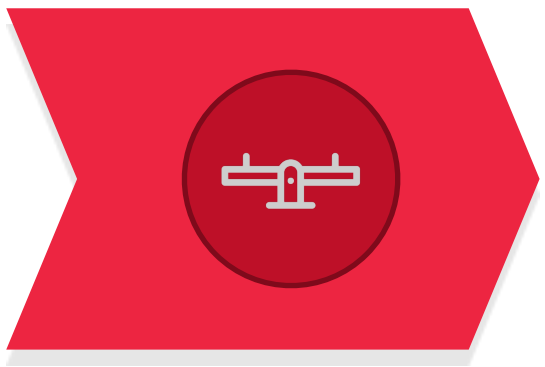


LEVERAGE

What other value can you extract?

What other goals can you achieve?

What momentum can you continue?



WHAT TO LEVERAGE FOR?

- Marketing: Create content
- Comms: Supplement narrative
- Product: Drive adoption and feedback
- Social good: Contribute back to society
- Continuity: Plan for succession, fund other activities
- Innovation: Source for new ideas

SUPPORTING GROWTH

- Surface new ideas to grow TechLadies
- Contribute as mentors, coaches, and speakers
- Inspire fellow community members



Women changing the face of tech

Community organisations set up by women for women aim to bridge the tech industry gender gap by starting young

Lester Wong

Volunteering as a kids' basketball at a community centre here six years ago, Dr Ayesha Khanna was given a visceral reminder of a deep-seated bias when it comes to women and tech.

"I was working with kids on a small electric robot and, at some point, the mother of one girl took her daughter away and replaced her with her son, saying he was better suited to the activity," said the co-founder and chief executive of artificial intelligence (AI) firm Adishi.

"Later, the girl's grandmother brought her back and it was obvious she was really interested. That really resonated with my experience as a software engineer my whole career.

The unhealthy stereotype prompted Dr Khanna, 43, to start 21st Century 21C Girls, which now organises two programmes - a coding initiative targeted at girls aged eight to 10 and an AI pilot initiative for youth aged 16 to 22.

It is among a handful of community organisations here that aim to bridge the gender gap by working with children.

"Not everyone is going to be a data scientist, but nearly everyone will be working with one in the future," she said.

"As a country, Singapore can't afford to have half the population unaware of the impact of programming. We need everyone to participate."



Ms Tan Hui Min (far left) got her job in the finance industry to become a developer after attending a coding boot camp by the TechLadies community which Ms Elaine Tan (left) founded.

Programmes focus: There are two main ones: Code to the Core is a single-session initiative to bring in Chinese-speaking Singaporeans from well-to-do backgrounds. Launched in 2017, it targets girls aged eight to 10. The second, Enabling AI, is a national initiative to help young women connect AI to their business goals and the principles of good governance and AI.

The pioneer has been from Singapore's first programme last month.

COOLING GIRLS (www.coolinggirls.com)

Established: 2016

Mission: To inspire and empower more girls to pursue careers in computer science.

Number of participants: 500, with 3,000 community members.

Target age group: Programmes focus on girls aged eight to 10 and 16 to 22.

Website: www.techladies.com





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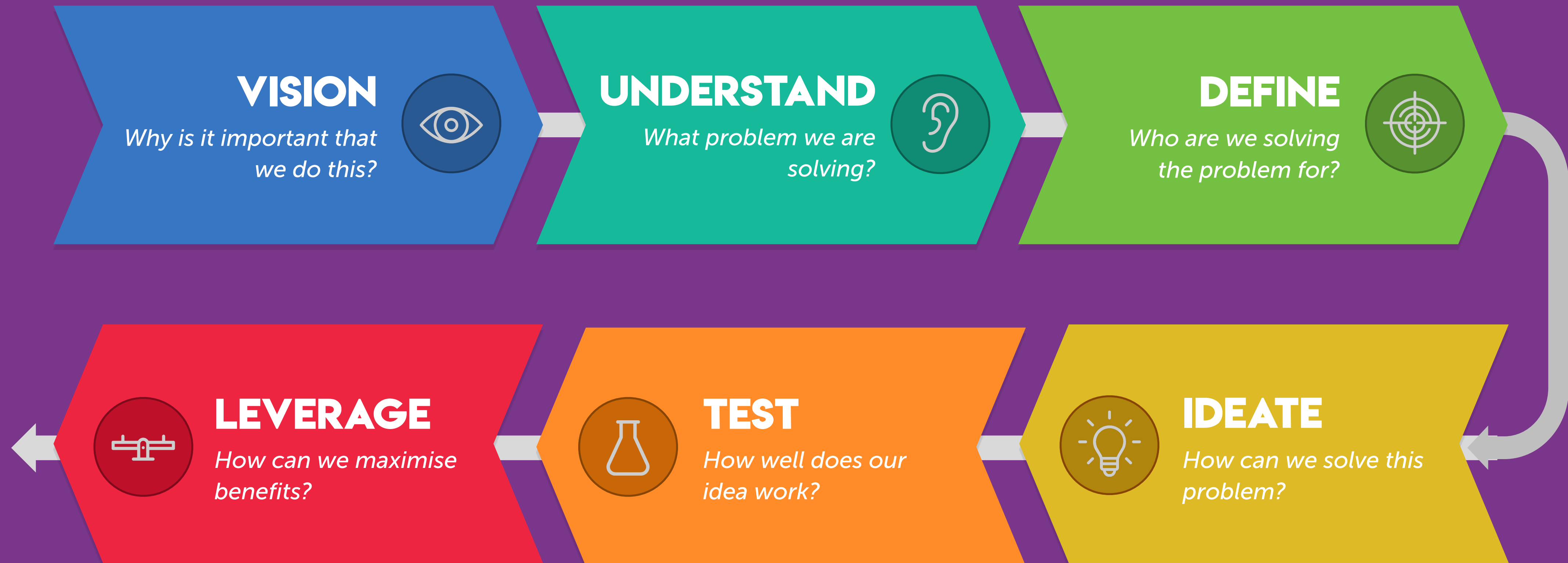
TEST: Yay it worked!

LEVERAGE: Invite grads as speakers, mentors, and organisers.

PUTTING IN ALL TOGETHER



PROGRAMME DESIGN THINKING: 6-STEP PROCESS



Oon Xin Tian

Software Engineer, Airhost

“I felt extremely lost after being expelled from a Masters programme two years ago. My self-confidence was at an all-time low.

Today, I am here standing up again to pursue my new-found dream.”



KEEP IN TOUCH!

@elishatan

elisha@techladies.co