Welcome to the

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Building a production Ready Application

The session will start shortly...

Questions? Drop them in the chat. We'll have dedicated moderators answering questions.

Full Stack Web Development Session Housekeeping

- The use of disrespectful language is prohibited in the questions, this is a supportive, learning environment for all - please engage accordingly. **(Fundamental British Values: Mutual Respect and Tolerance)**
- No question is daft or silly - **ask them!**
- There are **Q&A sessions** midway and at the end of the session, should you wish to ask any follow-up questions. Moderators are going to be answering questions as the session progresses as well.
- If you have any questions outside of this lecture, or that are not answered during this lecture, please do submit these for upcoming Academic Sessions. You can submit these questions here: **Questions**

Full Stack Web Development Session Housekeeping cont.

- For all **non-academic questions**, please submit a query: **www.hyperiondev.com/support**
- Report a **safeguarding** incident: **www.hyperiondev.com/safeguardreporting**
- We would love your **feedback** on lectures: **Feedback on Lectures**

Skills Bootcamp
8-Week Progression Overview

Fulfil 4 Criteria to Graduation

✅ Criterion 1: Initial Requirements

Timeframe: First 2 Weeks
Guided Learning Hours (GLH): Minimum of 15 hours
Task Completion: First four tasks

Due Date: 24 March 2024

✅ Criterion 2: Mid-Course Progress

60 Guided Learning Hours

Data Science - **13 tasks**
Software Engineering - **13 tasks**
Web Development - **13 tasks**

Due Date: 28 April 2024

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Skills Bootcamp Progression Overview

✅ Criterion 3: Course Progress

Completion: All mandatory tasks, including Build Your Brand and resubmissions by study period end
Interview Invitation: Within 4 weeks post-course
Guided Learning Hours: Minimum of 112 hours by support end date (10.5 hours average, each week)

✅ Criterion 4: Demonstrating Employability

Final Job or Apprenticeship Outcome: Document within 12 weeks post-graduation
Relevance: Progression to employment or related opportunity

SKILLS FOR LIFE
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Building Production Applications

June 2024

Session 1 Objectives

- Project Management
- Development workflow
- CI/CD Pipelines
- Project Set up
- Good Practices

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Disclaimer

The material covered in these sessions are not hard rules, different companies and groups will have their own ways of going about things. The goal of theses sessions is to get you familiar with concepts that will be shared between companies. Important concepts to focus on.

The Project

An events platform where promoters can post upcoming tours and regular users can view and like events.

- Promoters should be able to perform CRUD operations on their own events
- Website visitors who are not authenticated should be able to view basic event information
- Website visitors who are authenticated should be able to like events

First Step

Project planning and management

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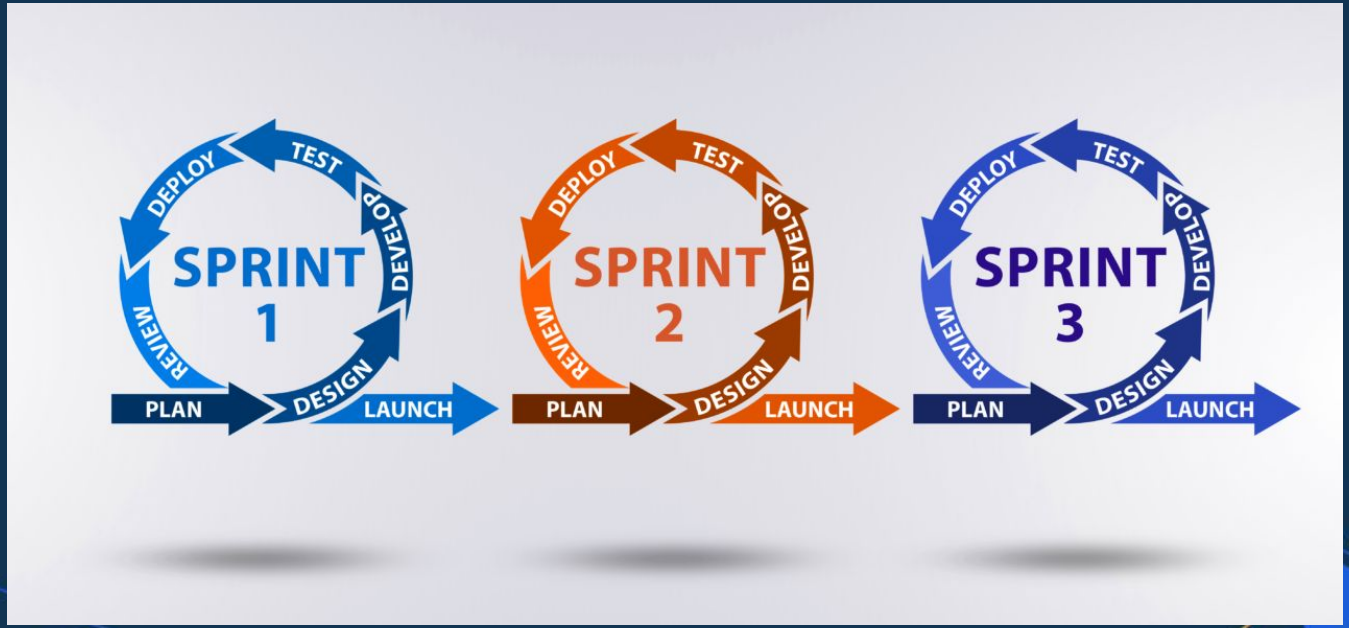
The Agile Process



Source kruschecompany [LINK]

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Agile on Solo Projects

Agile is commonly used in teams, but it can also be applied to solo projects

- You don’t know everything, requirements are more likely to change
- You don’t have enough time to figure out the full vision of the project
- You want results fast to keep the fire going
- You need to be able to hop in and out of the project whenever you have time

Example Project Management Approach

Using Sprints

- Each major part of the application will be broken up into a sprint
- Each sprint will focus on achieving A SINGLE goal

Kanban Board

- Each sprint will have its own board
- Each card should cover a single unit of work
- Tasks on a card should be small enough that they can be done quick, but big enough that you don't have a lot of cards for a simple task
- If the task is not on the board, it should not be done.

Sprint Planning

Planning

- Decide what's important for the sprint
  - What's required for the MVP
  - Which feature is being implemented
  - Which bugs need to be focused on
- Break the big goal into medium sized tasks
  - What parts contribute to the final goal
- Be explicit about what constitutes a successful sprint
  - What should the feature be able to do
  - What insight is important to have after this sprint.

Working Through the Sprint

Managing the Kanban Board

- Every feature/unit of work should have a card
  - NO CARD, NO WORK!
- New ideas or overlooked parts should have cards created
- Card titles should be referenceable
  - Unique IDs
  - Part of the project it contributes
- Cards should be detailed
  - Provide good information about the problem that needs to be solved
  - Provide resources that might help achieving the goal if possible
- Cards can be used for tracking progress
  - Document key findings
  - Store links to resources that helped complete the card

Popular Tools

- Jira
- GitHub Projects
- Basecamp
- Trello
- Notion

Let’s Plan a Sprint!

If you have questions, drop them in the questions section

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First Step

Workflow and CI/CD

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Git Workflow and CI/CD

Having a good Git workflow will make the development process smoother, you can enforce a lot of rules on what constitutes good code, this will

- Ensures the build process is consistent and easy for new developers to hop in if required
- Makes bug tracking easier
- Makes it easy to rollback changes

A good CI/CD process will get rid of a lot of manual repetitive tasks allowing us to test and deploy our applications a lot easier

- Faster builds and deploys encourages more frequent builds and deploys
- Automated testing encourages more tests being used, ensuring quality applications

Simple Git Flow and CI/CD

LINK

Let’s Breathe!

Let’s take a small break before moving on to the next topic.

If you have questions, drop them in the questions section

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Development

Environment Setup

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Steps

1. Setting up GitHub Repository (CI/CD left out for now)
2. Setting up project dependencies
    a. .files
    b. File structure
    c. Dev dependencies
    d. Project Dependencies
3. Setting up project dependencies
    a. Setting up third party tools (databases, etc)
4. Not required, but good to do
    a. Test configurations
    b. Test external connections

Development

Test Driven Development

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Software Testing : Problem

Manual Testing

High quality products go through intensive testing, high quality software needs to be tested well. Traditionally, manual testing was the way to go, but there are a few issues.

- Not everyone has a dedicated team of testers (especially if you're solo)
- Testing takes time
- Developers are lazy and like shifting responsibility
- Testing well all the time is hard even if you are well intentioned

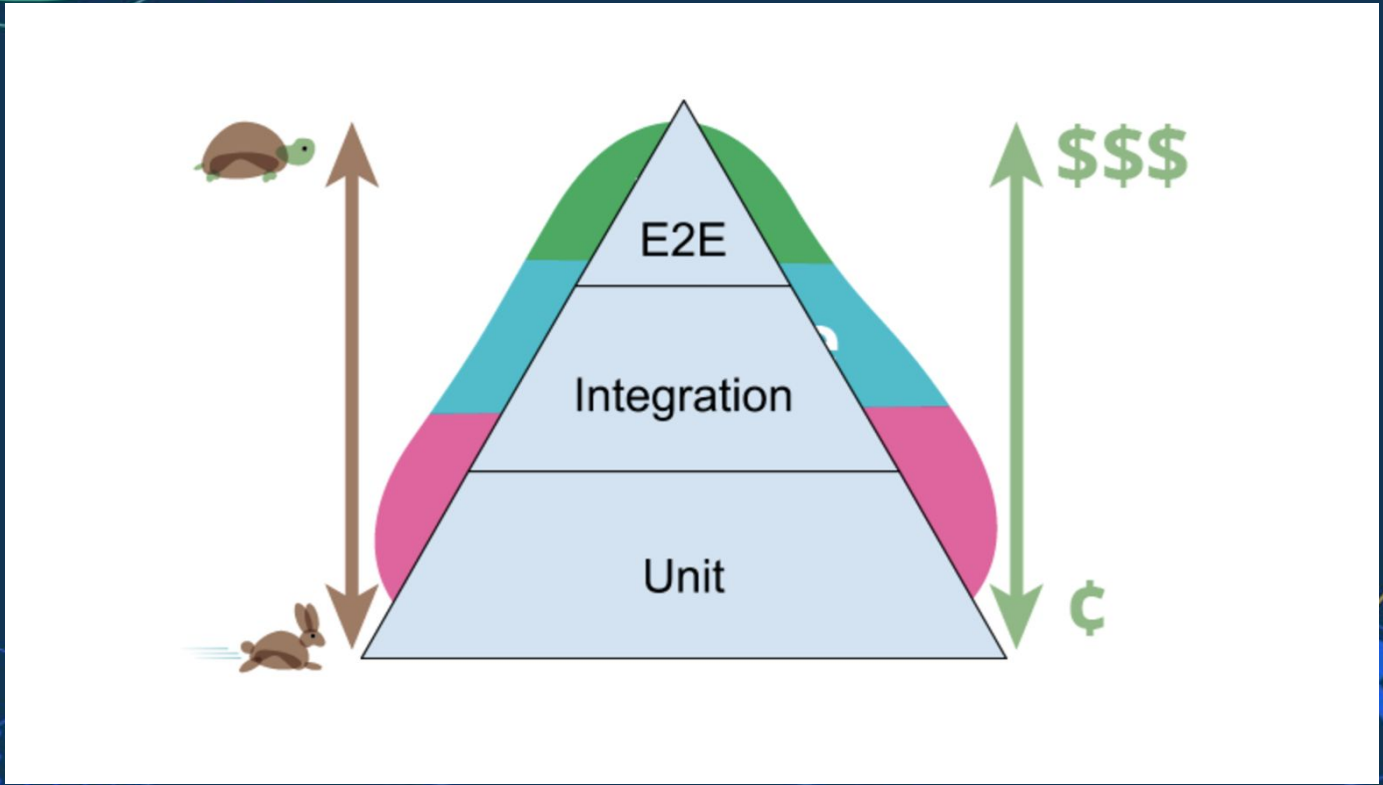
Software Testing : Solution

Automated Testing

Automated tests allow us to run a simple script which will run a set of predefined operations on our applications,

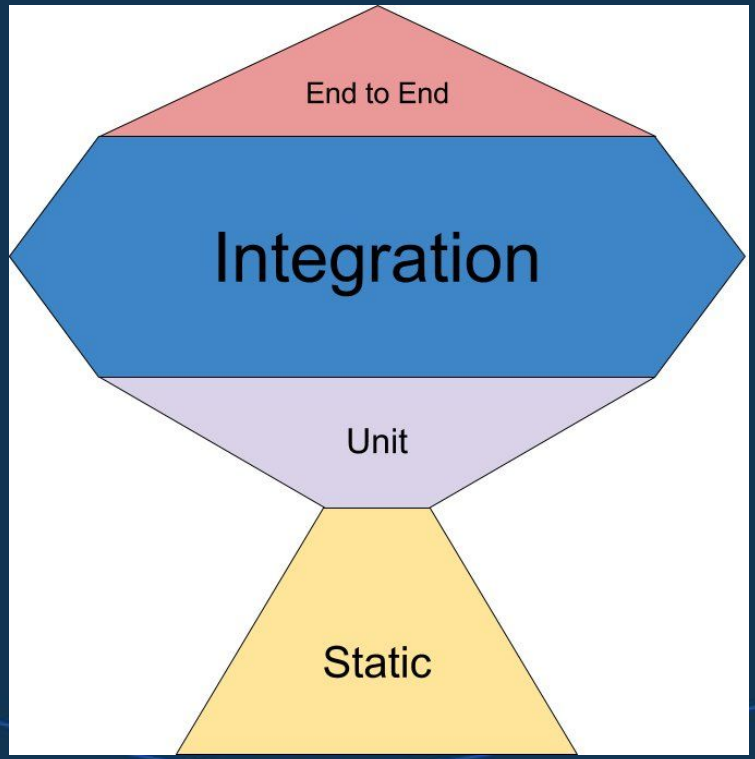
- Speeds up the testing process, no one has to manually enter input and wait for outputs
- Provides good insight into requirements
- When using Test Driven Development, it sets goals that your code should achieve
- Allows us to run tests in our CI/CD processes, providing insight about where good and bad code comes from

Testing Triangle



https://android-ui-testing.github.io/Cookbook/basics/testing_theory/

Testing Trophy



https://kentcdodds.com/blog/the-testing-trophy-and-testing-classifications

Questions and Answers

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Thank you for attending

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