# CS 51 Computer Science Principles

## APCSP Module 3: Data, Internet, Computer and Programming

## Unit 3: Programming and Algorithms

LECTURE 10 APP LAB OVERVIEW

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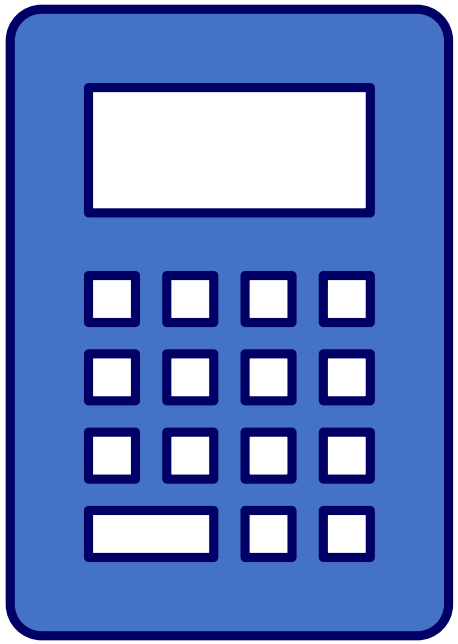
IEEE SENIOR MEMBER

# Overview

LECTURE 1

# Objective:

- Hackathon and Create Task Activity on Code.org

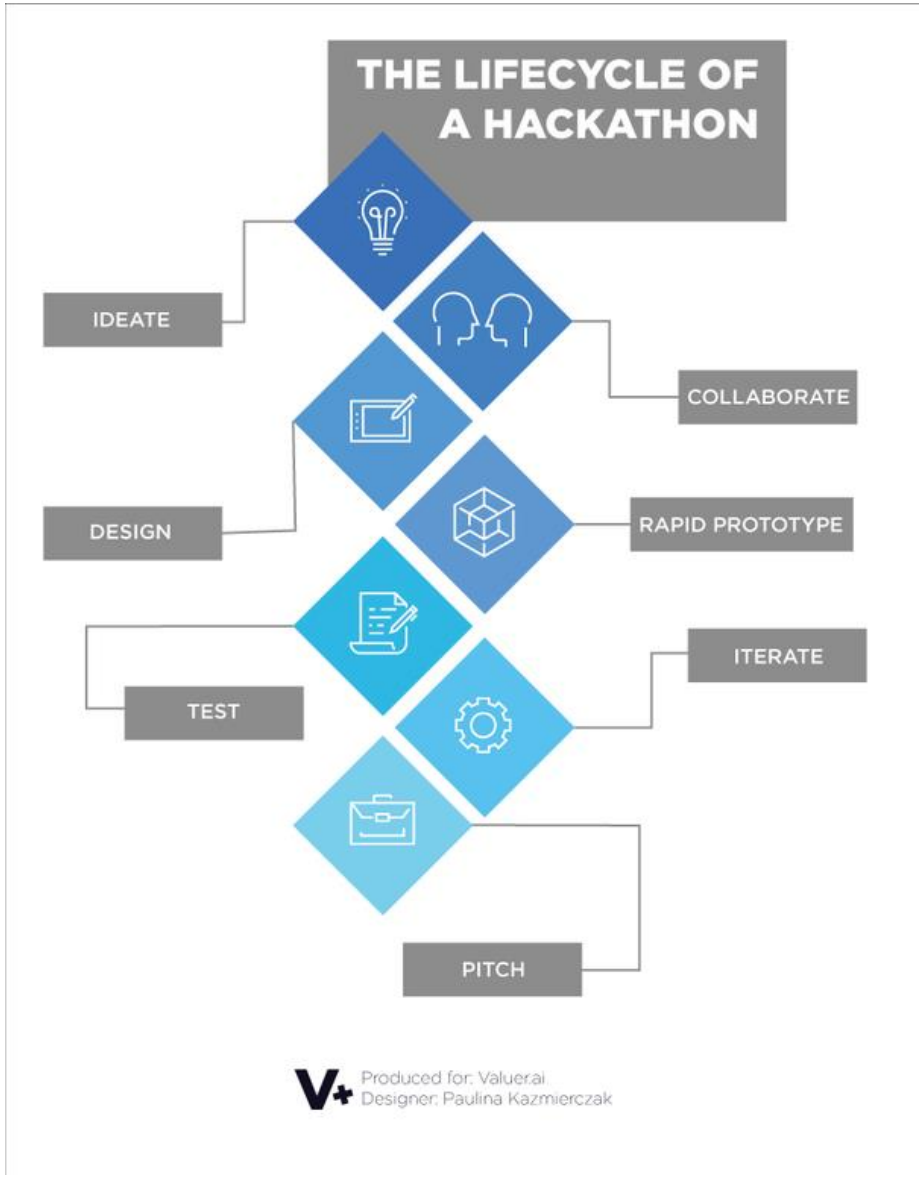


# Hackathon

SECTION 1 – [CODE.ORG] UNIT 5

# What is a hackathon?

- Hackathon is a tool to drive sustained innovation and crowdsource solutions to address pressing real-life business problems and social issues.
- A hackathon is typically a time-bound competitive event where participants collaborate to build proofs of concept and minimum viable products for a specific pre-defined problem or to innovate.

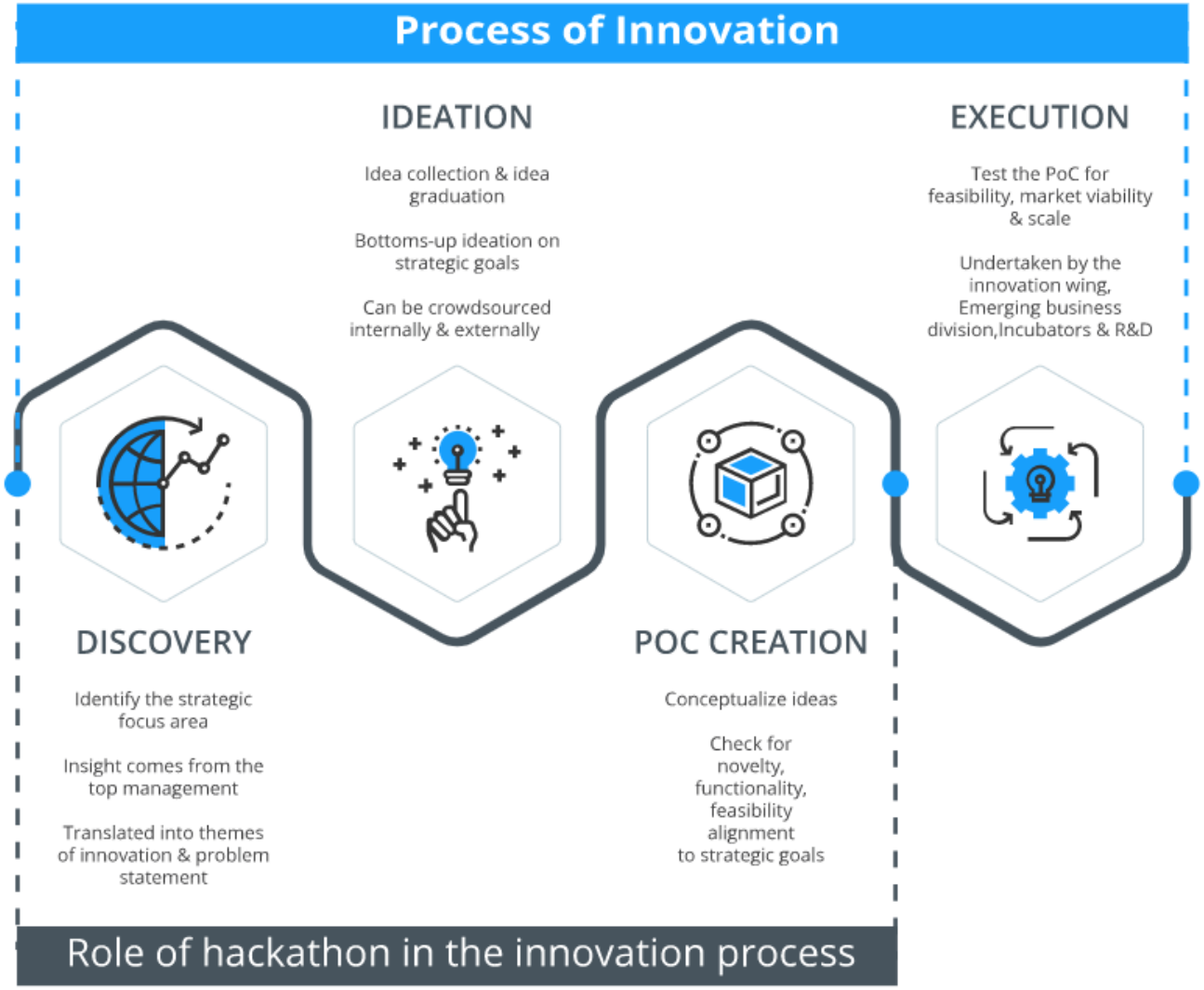



# What is a hackathon?

HACKATHONS ARE EVENTS IN WHICH COMMUNITY MEMBERS COLLABORATE TO SOLVE PROBLEMS.

# Why should you conduct a hackathon?

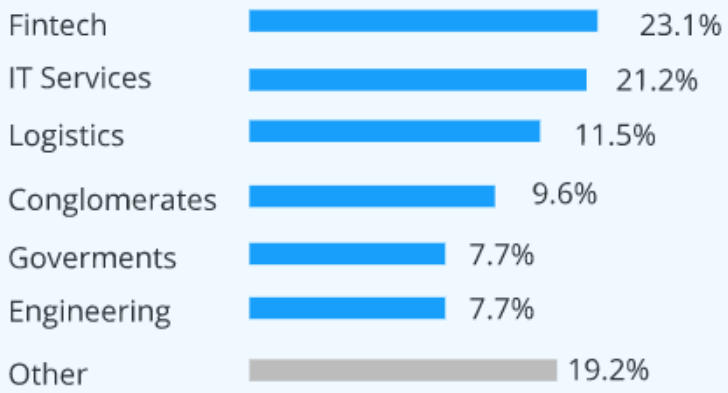
- Hackathons have some clear advantages over traditional innovation management processes. They are inclusive, agile, promote multidisciplinary collaboration, and have shorter innovation cycles that are better suited to addressing fast-changing consumer demands.
- Along with generating new ideas and future proofing a business, hackathons help de-risk product development, improve employee engagement and retention, find excellent talent, enable customer focused innovation and engagement, accelerate the speed of innovation and problem solving, enhance collaboration between teams, bring about cost savings through R&D, and build community, brand, and leadership.



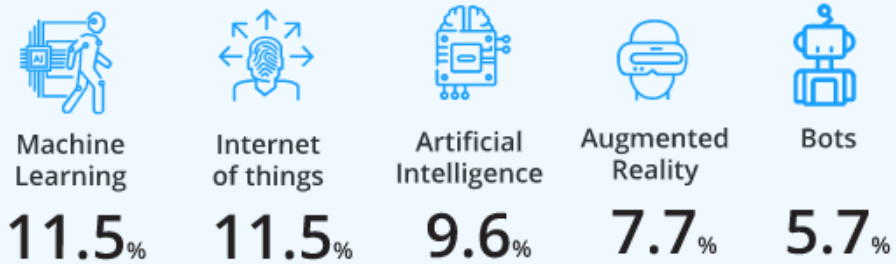

# Process of Innovation

# HACKATHONS BY SECTORS

In 2017, hackathons were a top innovation channel for fintech. Last year also saw more govts crowdsourcing solutions than ever before



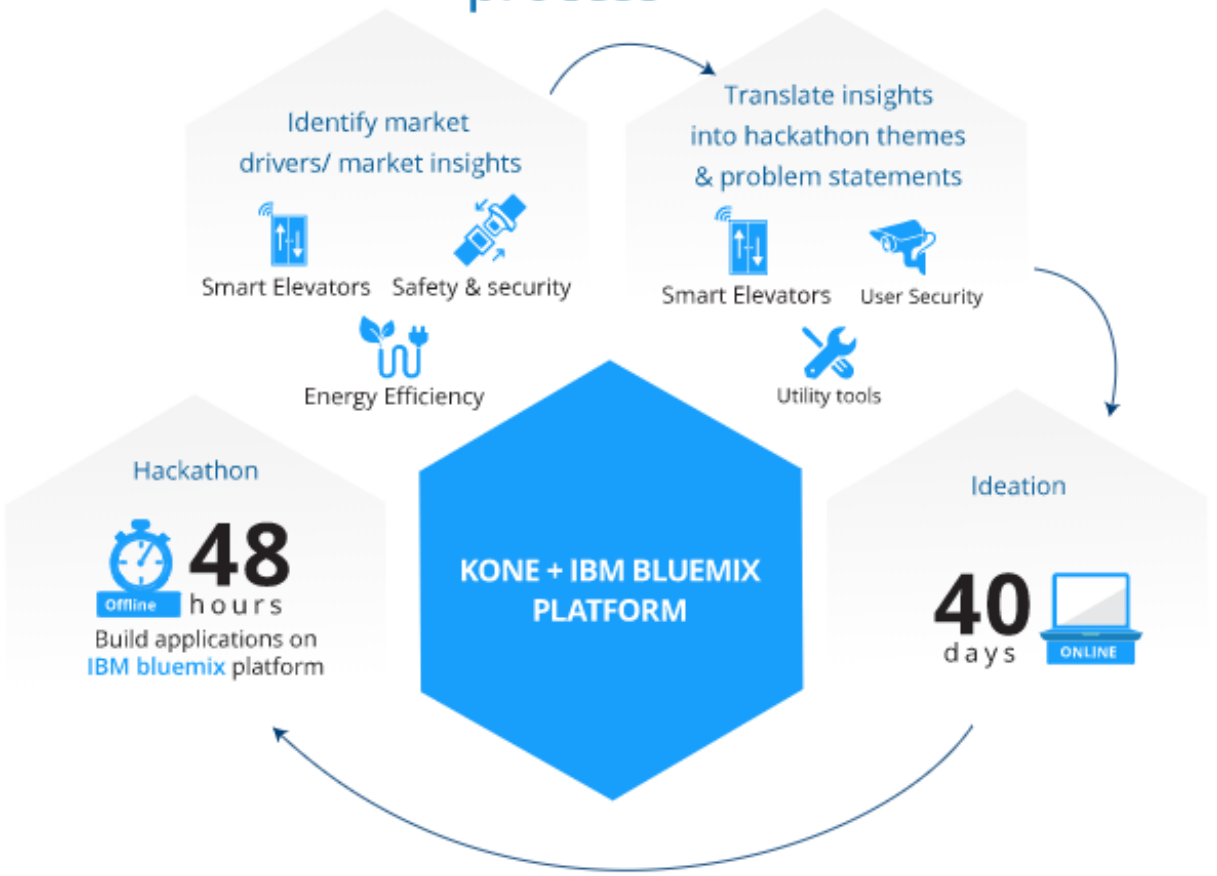

## TOP 5 TECHNOLOGIES



# What are the benefits of internal hackathons?

- **Establish a process of creative ideation:** The only way you can be consistently innovative is when the pace at which you are generating creative ideas and testing prototypes is higher than the pace at which your external factors are changing.
- **Rapid prototyping:** More experiments allow you to test out a large set of hypotheses and conducting not-so-perfect experiments also means that the cost of failure is low while giving you many insights. Internal hackathons are the perfect environment for rapidly prototype and test validity and feasibility before full implementation.
- **Jump start product roadmap:** Hackathons help to quickly check the feasibility of some of the ideas that can be taken up in the immediate roadmap. The dedicated time that one gets during the hackathon along with the competitive spirit and adrenaline rush can accelerate product development.
- **Come up with a future roadmap list:** Even though all ideas generated at a hackathon don't get implemented, they can become a good reference list for future road-map discussions.
- **Promote cross-functional collaboration across engineering and non-engineering teams:** This can facilitate collaboration between different teams but also give engineering teams a better perspective on the customer and make the non-engineering teams more vested in the product.

# Open Innovation process



# What are the benefits of external hackathons?

- Exploring new technologies
- Driving business innovation
- Sourcing incubation programs
- Creating potential startups
- Branding of products or an organization
- Creating solutions for social causes
- Analyzing data to make predictions
- Rewarding innovative thinking

# How do you choose to engage?

- In this type of hackathons, a company engages people within and outside the organization.
- The invites are often influenced by the themes and goals that are set.
- According to Gartner, “CIOs can use external hackathons to change culture, improve customer experience, find new revenue opportunities, reduce costs, engage new ecosystems, and improve talent management.”

Onsite Hackathon

Online Hackathon

Hybrid/ 2-Phase Hackathon

## Sample Timeline

It can be hard to know what to schedule into your hackathon, so here's a guide:

▼ Key times ▼ Team-related ▼ Host-related

**Friday**

The first day is all about laying the groundwork for a successful event; get everyone excited and on the same page.

- 6:00 PM — Registration and snacks
- 7:00 PM — Opening remarks
- 7:30 PM — Defining the problem
- 8:00 PM — Ideas pitch
- 9:00 PM — Form teams
- 12:00 AM — Building closes

**Saturday**

The second day is full of activity. Keep everyone on track with planned check-ins, breaks, and inspiring speakers.

- 8:00 AM — Doors open
- 8:30 AM — Breakfast
- 10:00 AM — Team check-in
- 12:00 PM — Lunch
- 12:30 PM — Speaker 1
- 5:00 PM — Dinner
- 6:00 PM — Mentor Feedback
- 7:00 PM — Speaker 2
- 12:00 AM — Building closes

**Sunday**

The third (and often final) day of a hackathon can fly by! Make sure everyone is aware of final presentation times, and be sure to announce the solutions at the end of the event.

- 8:00 AM — Doors open
- 8:30 AM — Breakfast
- 10:00 AM — Team check-in
- 11:00 AM — Lunch
- 3:00 PM — Presentations due
- 4:00 PM — Dinner
- 6:00 PM — Presentations start
- 7:30 PM — Winners announced
- 8:00 PM — Event ends

*Source: Booz Allen Hamilton*

## Most Popular Gifts


Gift Certificate


Tablet


Smart Watch


Go Pro


Amazon Echo

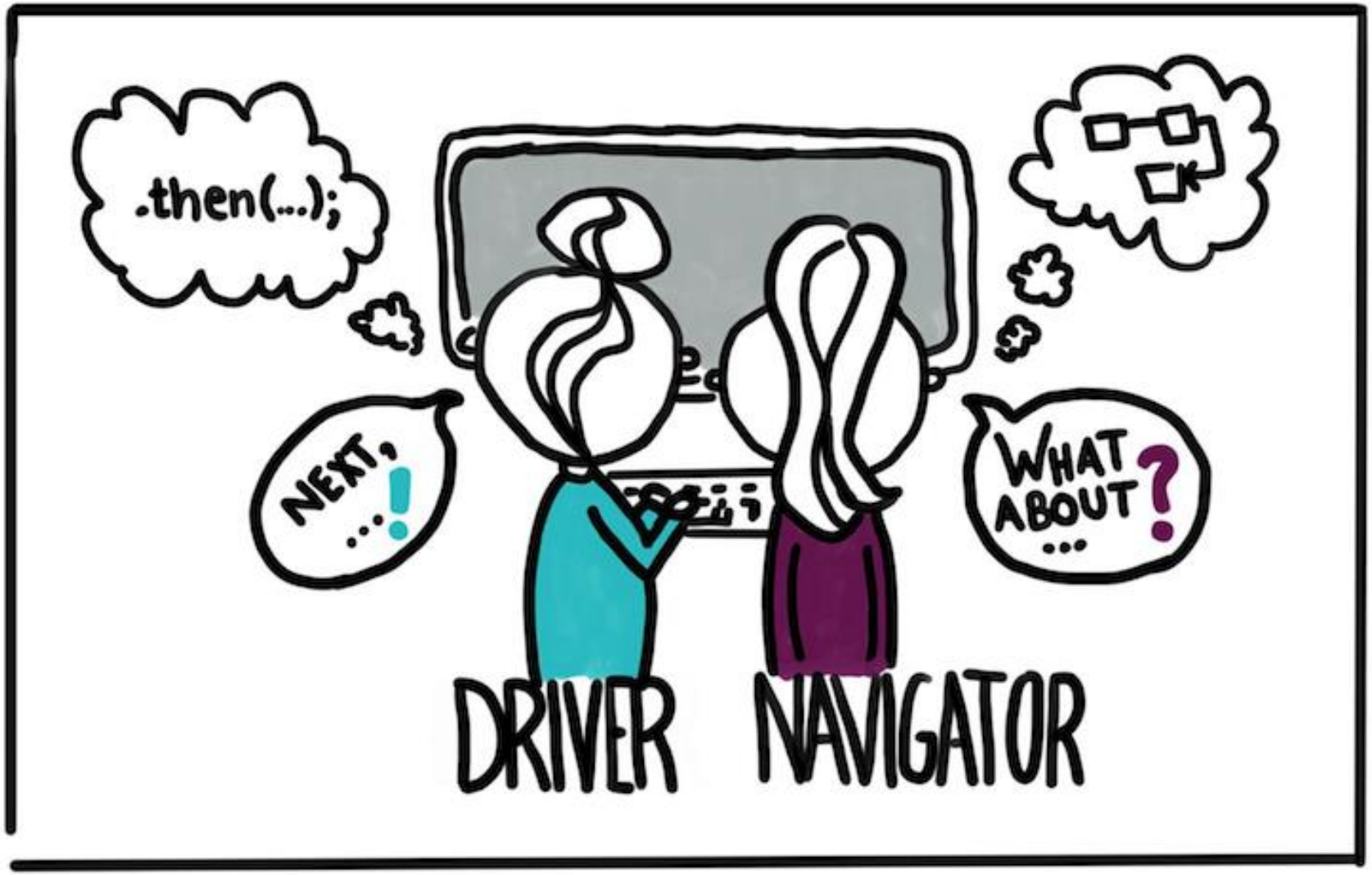

Gaming consoles


Drones


Portable hard drives

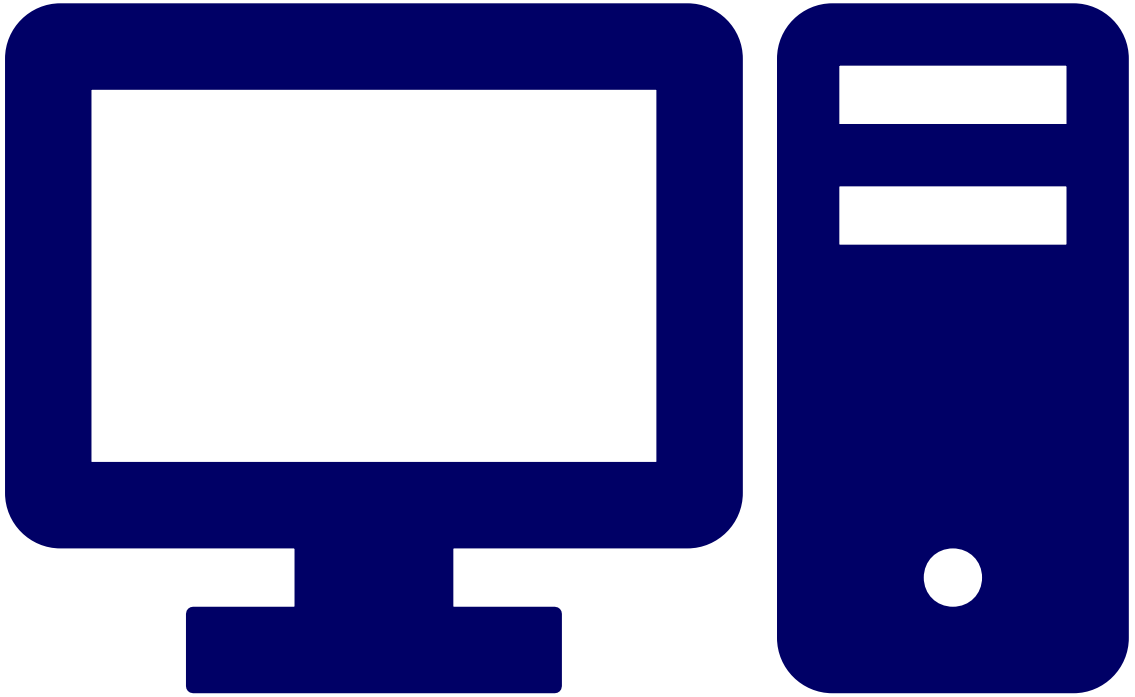

Apple MacBook


Paid Holidays


.then(...);
NEXT, ...!
WHAT ABOUT ...?
DRIVER
NAVIGATOR

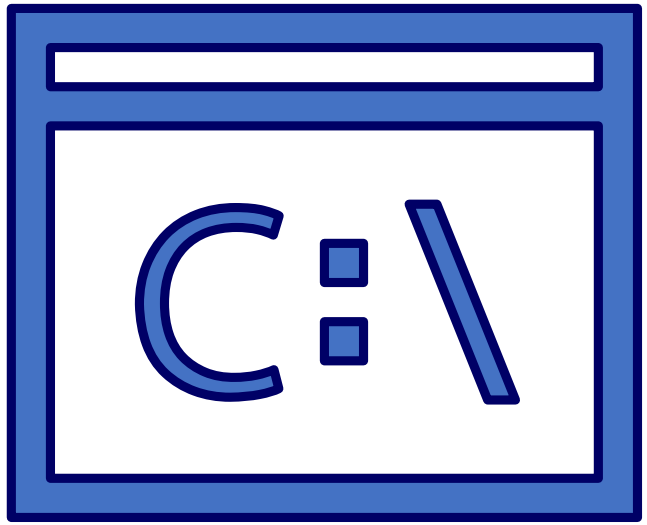
# 5 ROLES NEEDED ON EVERY HACKATHON TEAM


# Collaboration



# Hackathon

LESSON 13-17 [CODE.ORG]




# Create Task

SECTION 2 – UNIT 8 [CODE.ORG]

# Unit 9 - Data

LECTURE 1

# Unit 9 - Data ('22-'23)

In this unit learn how data analysis helps turn raw data into useful information about the world. Learn how to use data visualization to find patterns inside of data sets and learn how this data analysis process is being used in contexts like open data or machine learning to help make decisions or learn more about our world. In the unit project, you'll analyze a dataset of your choosing and present your findings.

Teacher resources | Printing Options | View calendar

For your owned section:

APCSP 2023 Banana ✔ Assigned

## Unit 9: Data

### Lesson 1: Learning from Data

In this lesson students explore the "What's Going on in this Graph?" site in order to tell a "data story" which explains both what the data shows and why that might be. Following this, students are introduced to the concept of metadata and look for the metadata of datasets on App Lab.

1 Exploring Metadata

2 Check For Understanding

View Lesson Plan

Student Resources

Send to students

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