Deakin Simpsons AI Challenge 2021

Webinar on Tuesday, March 16th

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SCAN ME

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Please note:

This session is recorded

Outline

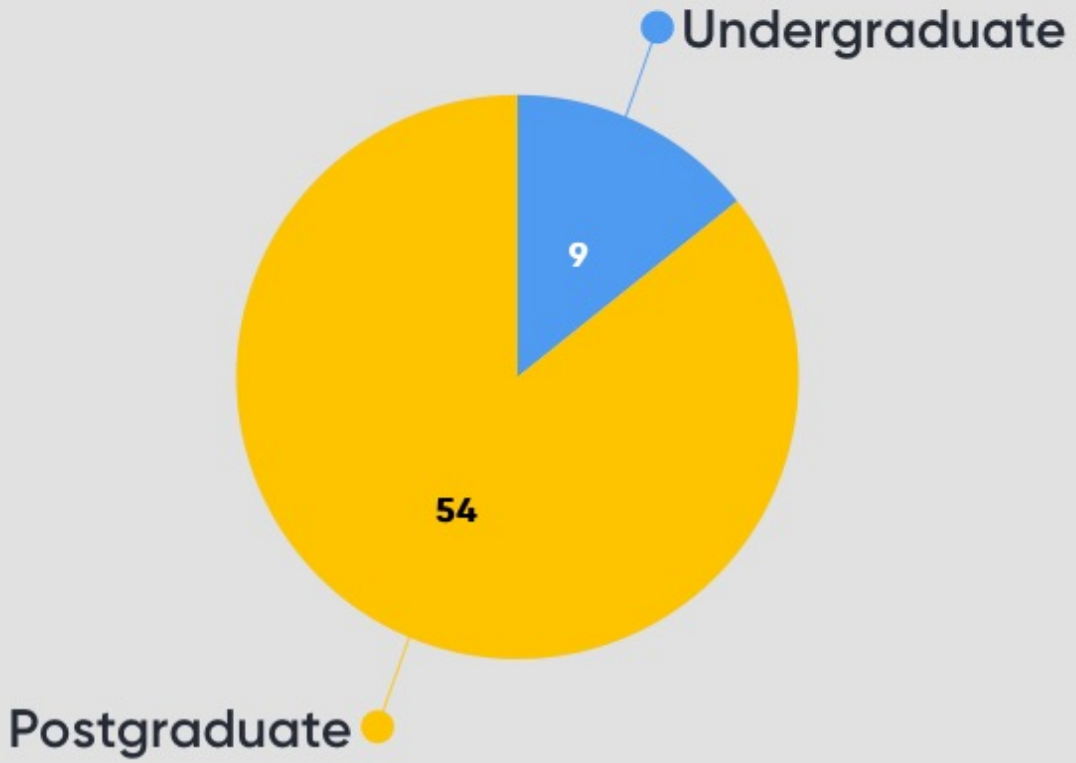
- What is the Deakin Simpsons Challenge 2021?
- About the task
- Timeline
- Eligibility
- Prizes and Sponsors
- Benefit
- How to participate?
- Questions

What is the Deakin Simpsons Challenge 2021?

- A computer vision competition for recognizing Simpsons characters
- The challenge is designed to:
  - Provide the opportunity to work as team members
  - Compete against each other
  - Enhance your learning experience by improving your AI modeling, problem-solving, and team-working skills
- **Designed with the same norms as any challenge organized in a top-tier AI conference**

Go to **www.menti.com** and use the code **7273 1864**

Are you .... student?



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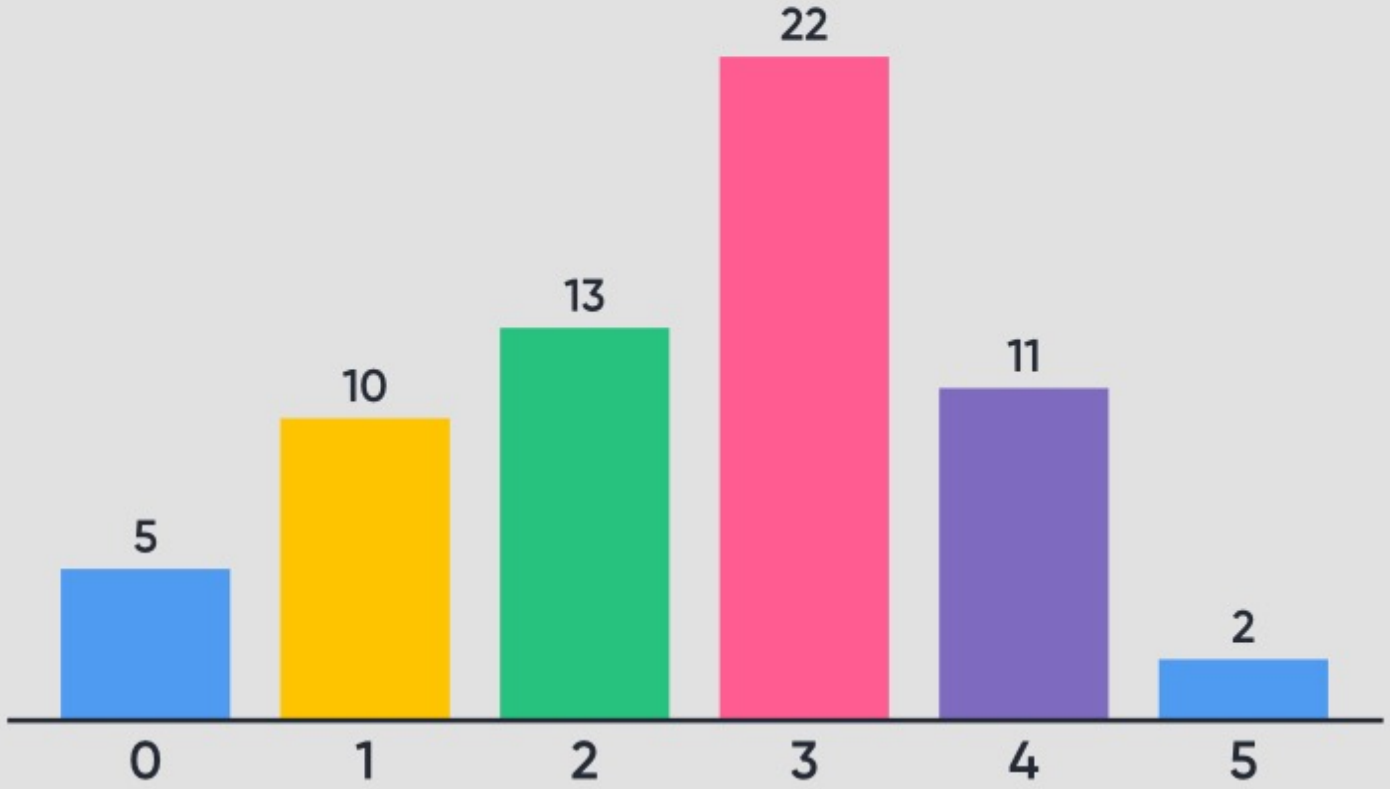
How much you know about AI?



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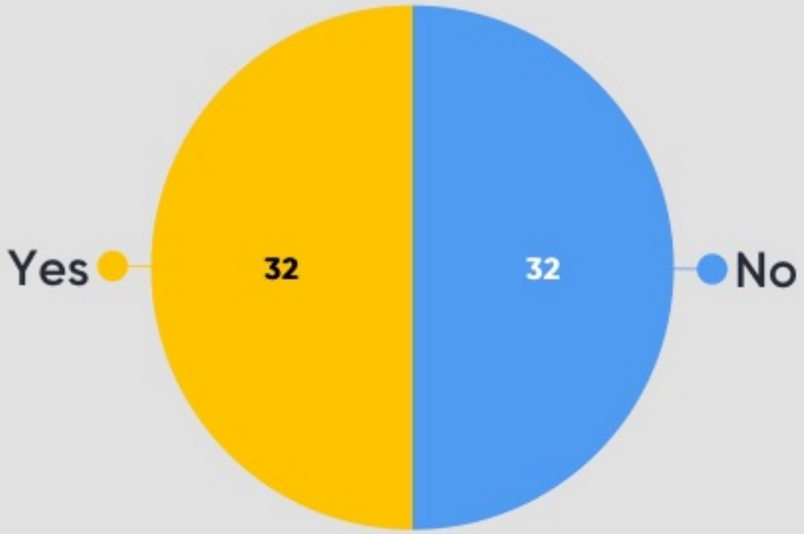
Do you think you can build an AI model for this competition without help?



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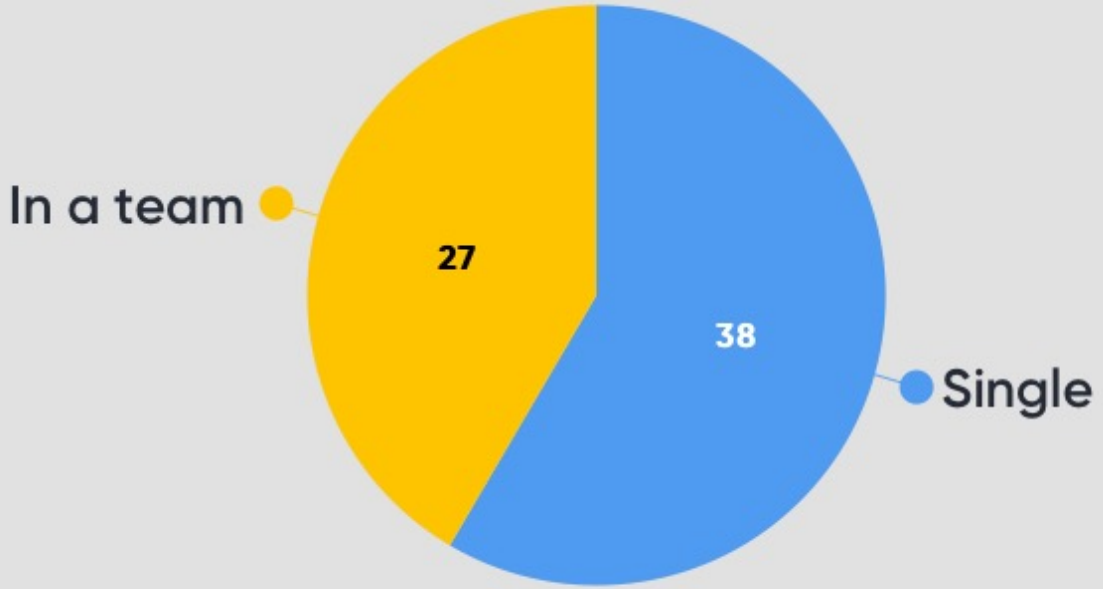
How do you plan to participate?



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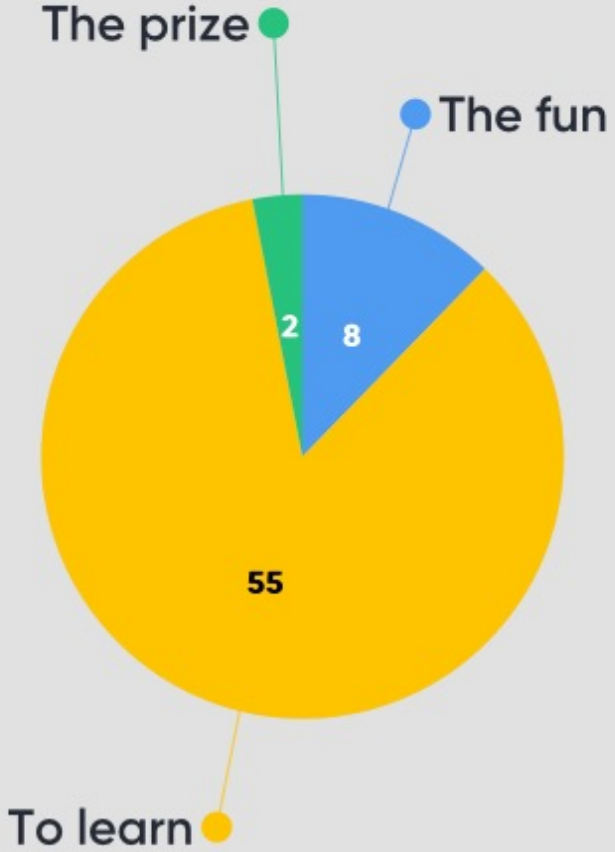
What motivates you to participate to this competition?



What do you have to do?
The machine learning framework

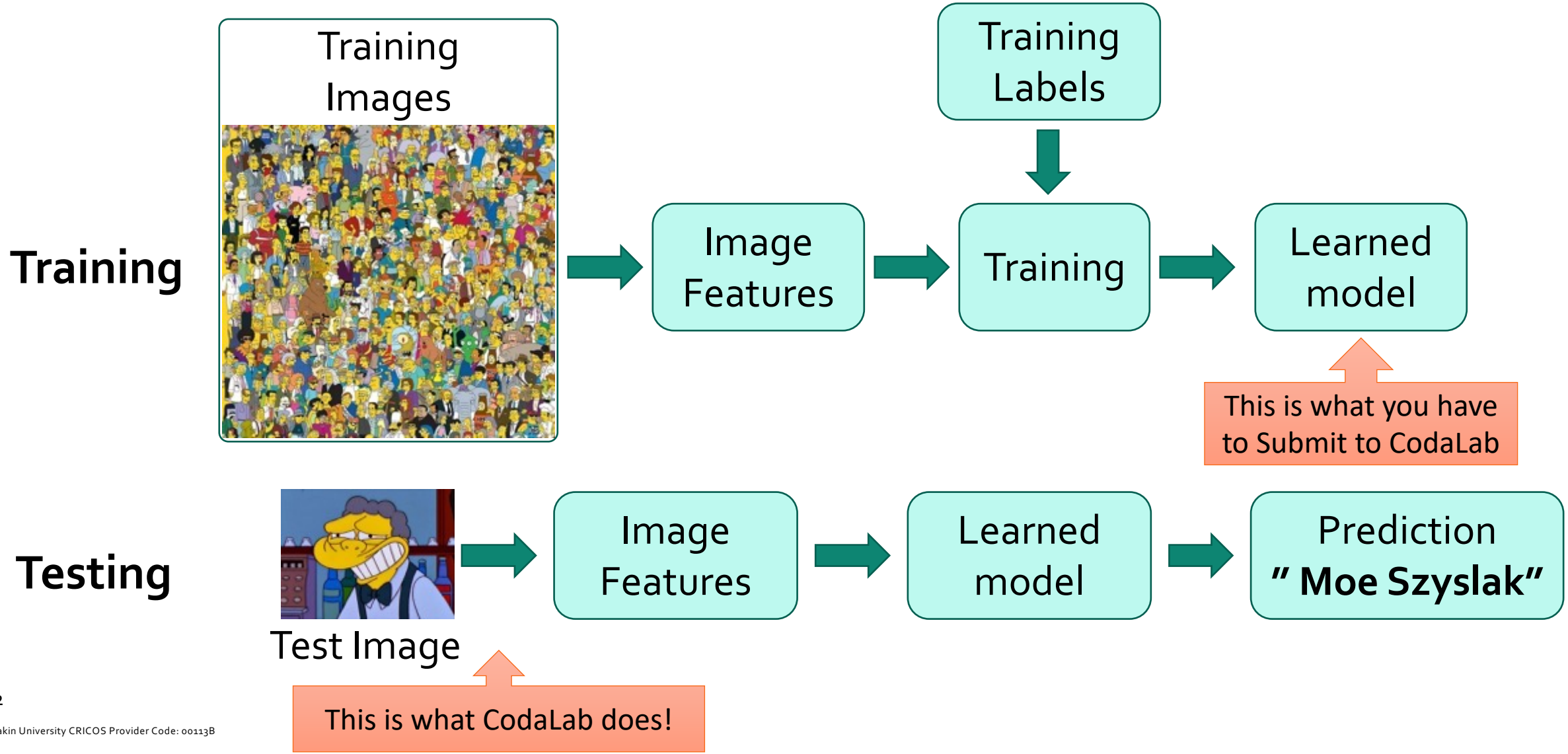
- Apply a prediction function to a feature representation of the image to get the desired output:

f() = “homer Simpsons”

f() = “principal skinner”

f() = “Moe Szyslak”

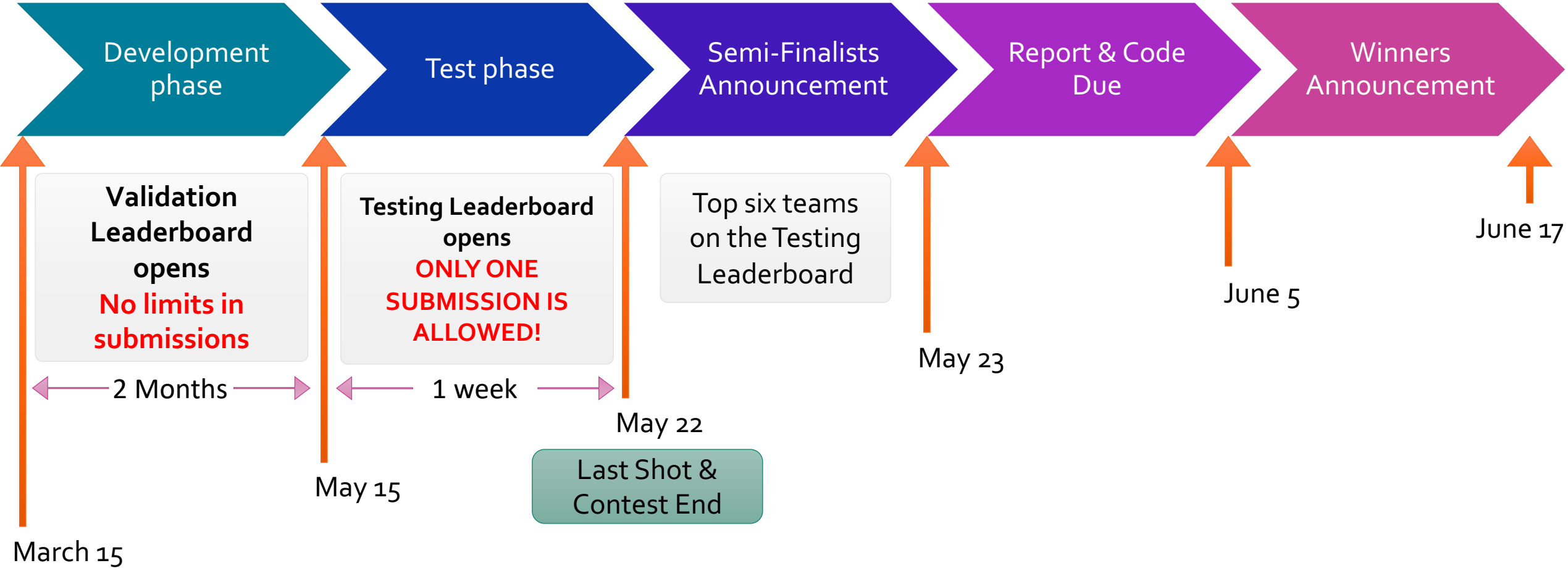
What do you have to do?
Steps



The performance is evaluated using the Accuracy!

$$\text{Accuracy} = \frac{\#\text{correctly classified test images}}{\#\text{test images}}$$

Timeline



Test sets

- **Development phase**
  - 20 characters x 50 images = 1,000 test images
- **Test phase**
  - 20 characters x 50 images = 1,000 test images
- Images in the test sets are collected and labeled from TV show episodes
- Although images are different in each test test, they come from the same distribution

You never have access to the images in the test sets!
Only CodaLab does!

Eligibility

- **All participants need to be enrolled in a course within the School of IT**
- The semi-finalists are required to:
  - Achieve at least **80%** accuracy for the test phase
  - Submit a report, which describes the solution
  - Provide a link of the Github repo of the solution
  - The submitted codes and reports may be inspected to check the validity of the solution!

Prizes and Sponsors

Funded by
Community Bank
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Deakin University
School of Information Technology

Award for

1st Prize Winners of the Deakin Simpsons AI Challenge 2021

Presented to

John Doe, Dale Nixon, and Karen Eliot

in recognition for their excellent achievement

XX June 2021

Funded by Community Bank at Deakin University

Dr. Mohamed Reda Bouadjenek
Lecturer, School of Information Technology

Professor John Yearwood
Head, School of Information Technology

deakin.edu.au

Why should you participate?

- **The school official award that will be given to you provides an invaluable recognition for your achievement**
  - An award is critical when you apply for a job or a PhD scholarship!
- The perfect place to learn best practices in AI, accrue feedback on your work, and augment your skills
- A channel for problem-solving and brainstorming
- An opportunity to push boundaries and encourage creativity
- The experience you get is invaluable in preparing you to understand what goes into finding feasible solutions for big data

How to participate?

- Register to the CodaLab platform, then register to the competition on CodaLab
- **You can participate individually or in a team**
  - There cannot be more than 3 students in a team
  - To find team members or join a team, you can post a message on the discussion forum
  - Once you have built your team, the team leader needs to contact me and provides:
    - Names, CodaLab usernames, the Deakin course in which they are enrolled, and the name of the team

All you need is a Google account to use Google Colab!

Demo

Things to try

- Collect more data from tv show episodes
- Make the model deep
- Try data augmentation
- Try pre-trained models, e.g., VGG16/19, MobileNet, ResNet, etc.
- Try to tune hyper parameters on the validation set, e.g., learning rate, dropout value, L2 reg, etc.
- **Do something different!**

Wish you all the best!

Questions?