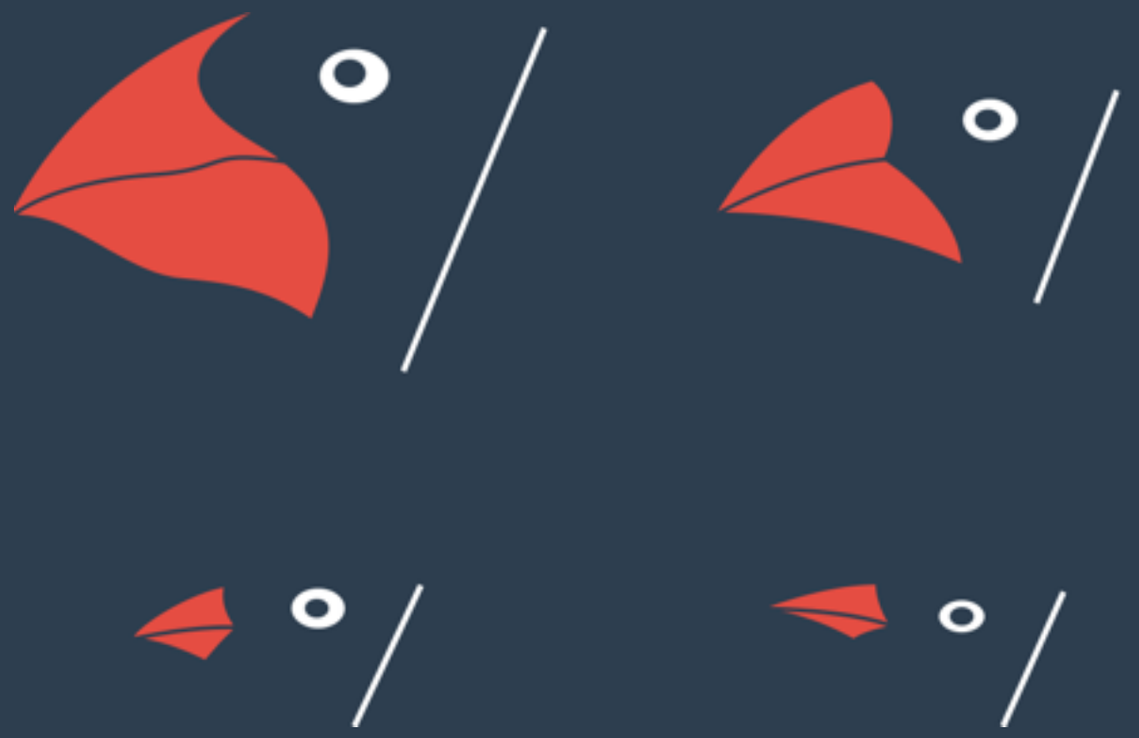
Finch



Natural selection for online education.

Online Education

Increasingly accessible to all demographics

Effectiveness can vary significantly

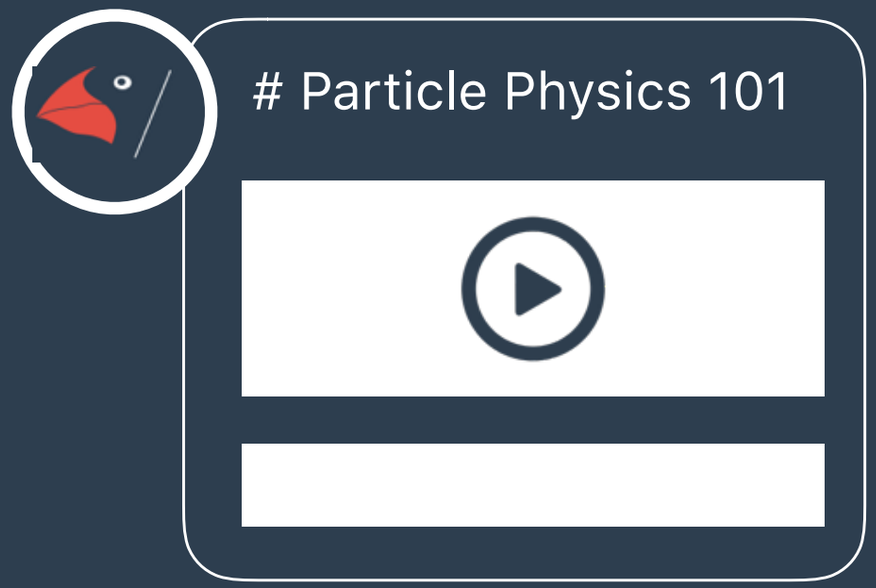
Online Education

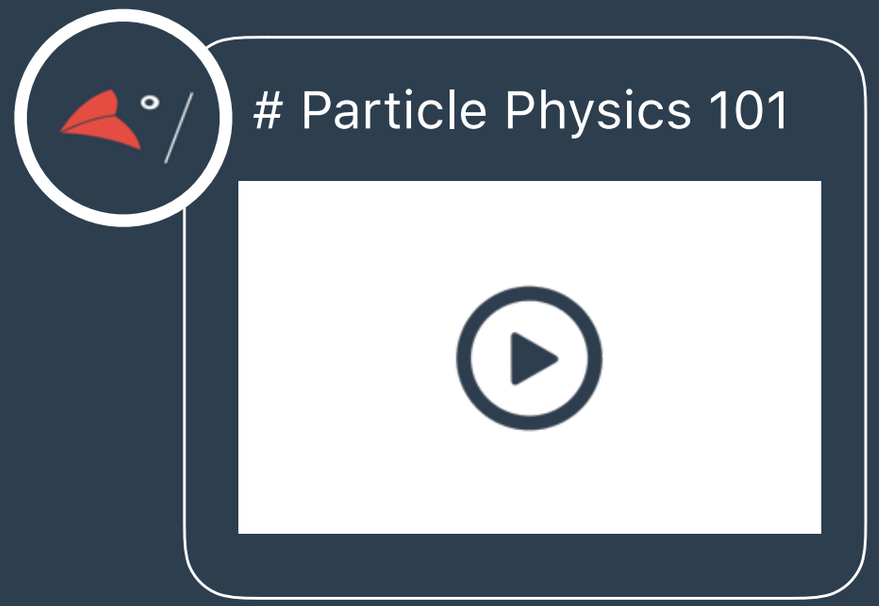
Increasingly accessible to all demographics

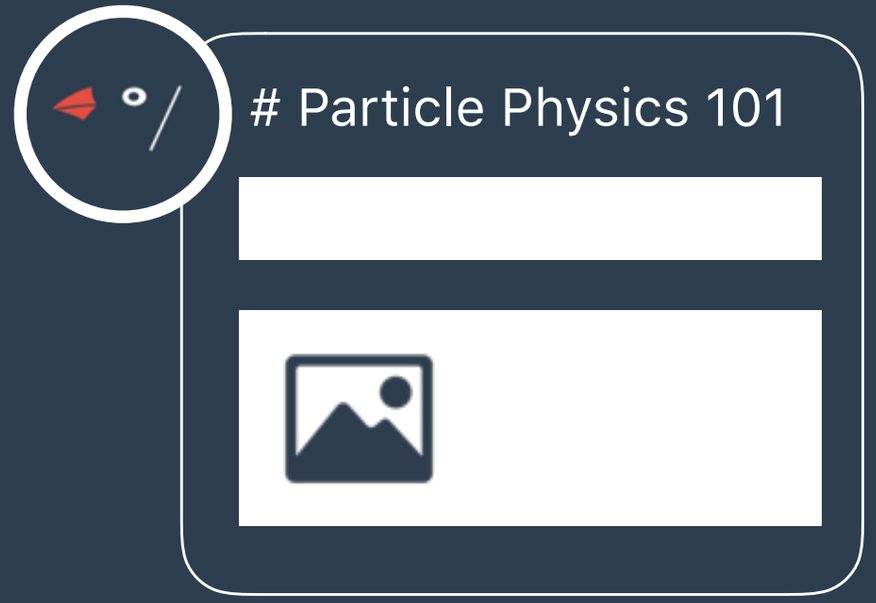
Effectiveness can vary significantly

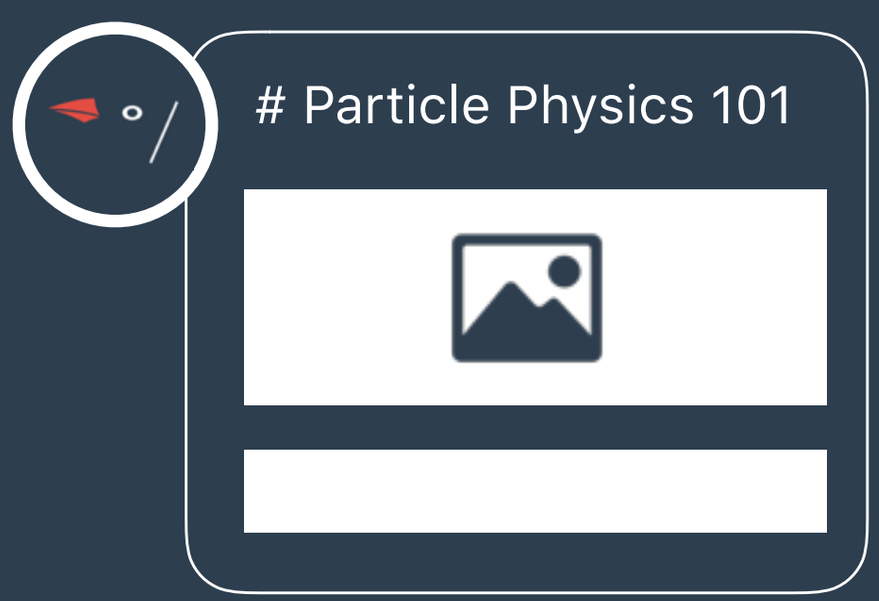
Particle Physics 101

Teacher varies educational material







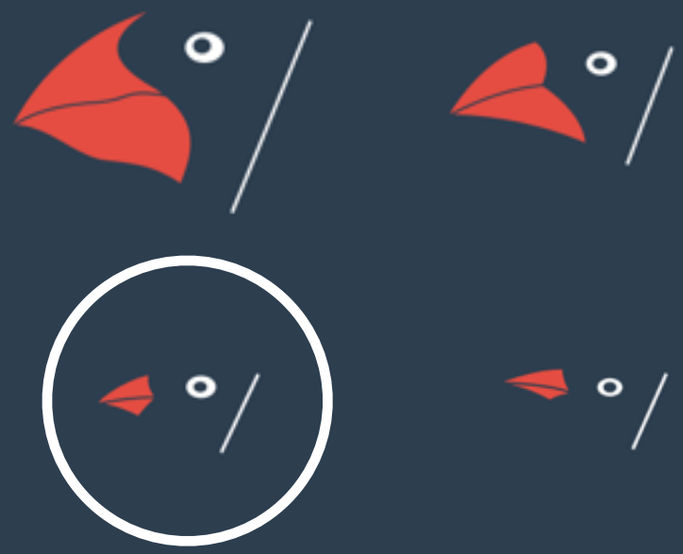


Teacher varies educational material

Student enrolls in course

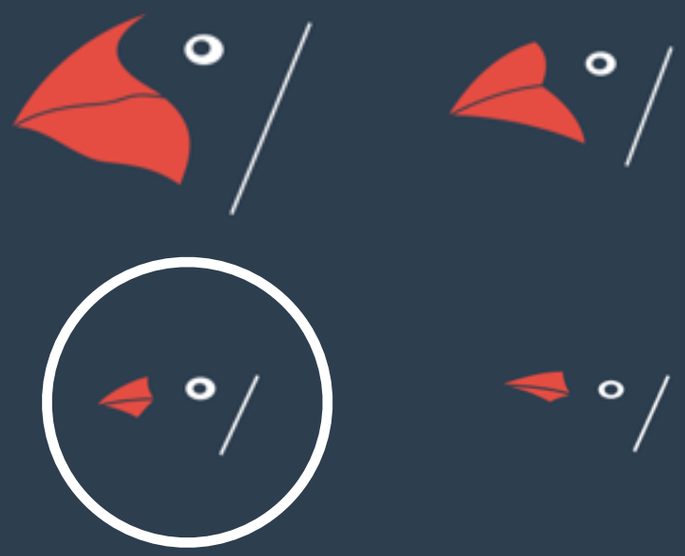
Student enrolls in course

predictors



algorithm
chooses variation

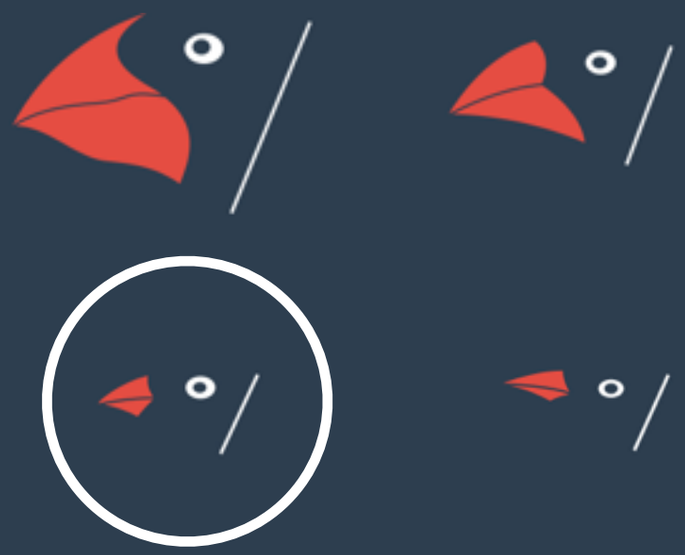
Student enrolls in course



algorithm
chooses variation

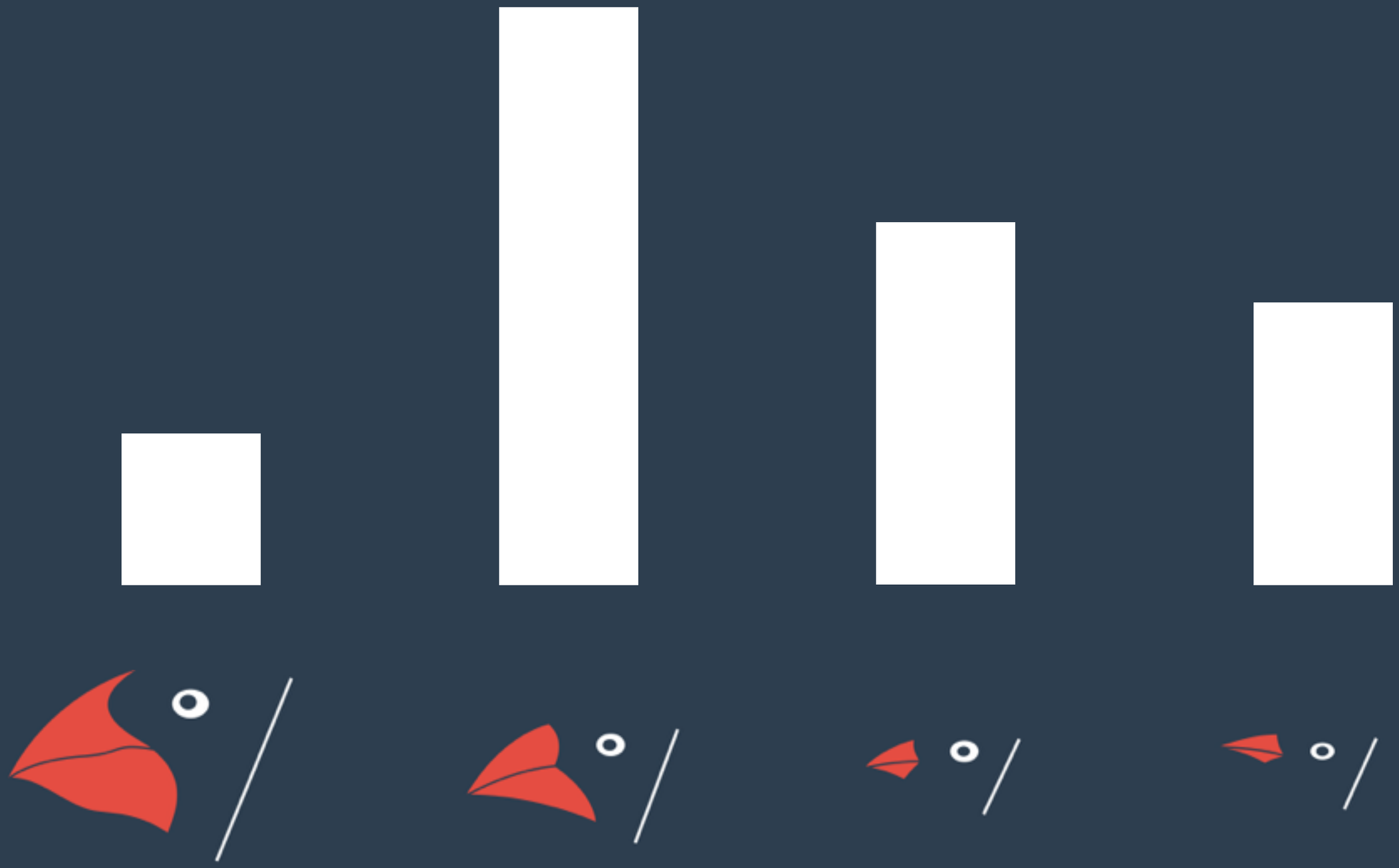
Tests determine student’s success

Student enrolls in course

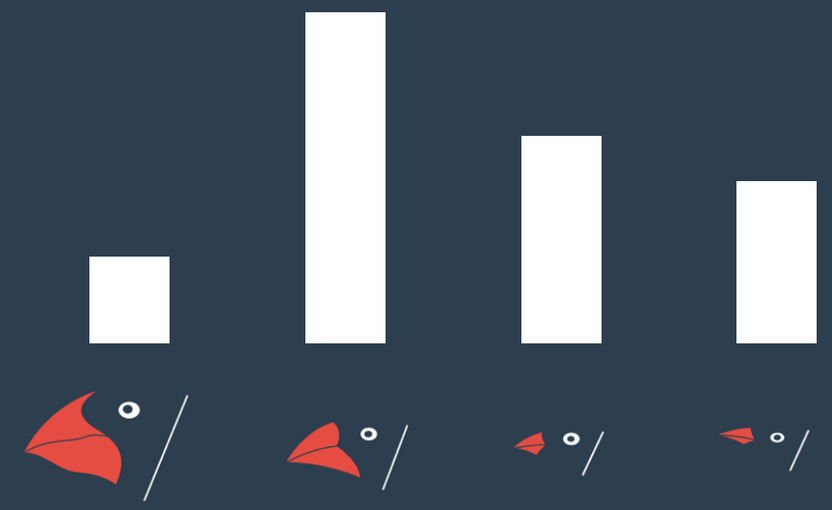


algorithm
chooses variation

Tests determine student’s success



for given age, gender, cultural background etc. of student



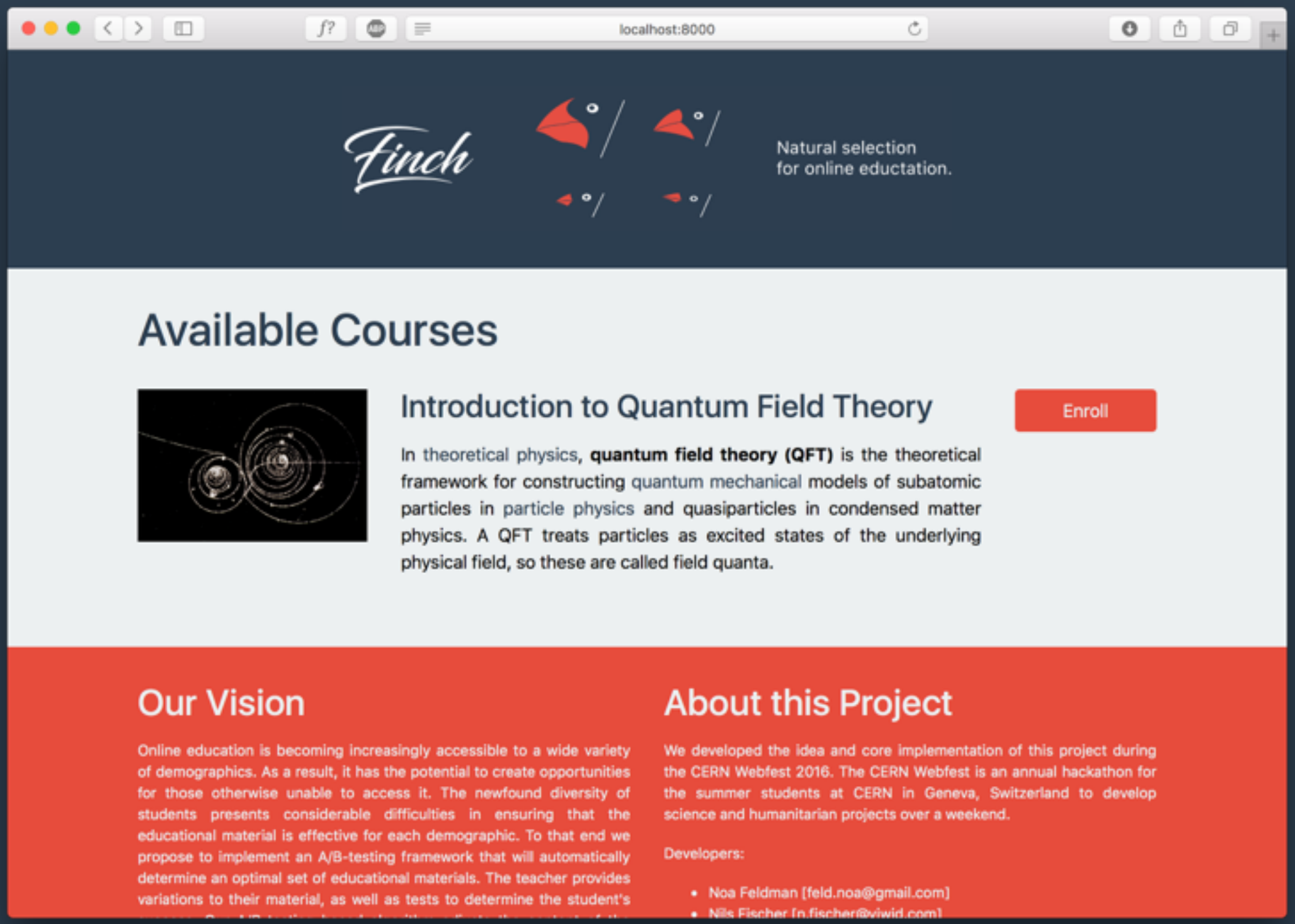
Alice

Bob

Particle Physics 101

Particle Physics 101

Demo


localhost:8000
Finch
Natural selection
for online eductation.
Available Courses
Introduction to Quantum Field Theory
Enroll
In theoretical physics, quantum field theory (QFT) is the theoretical framework for constructing quantum mechanical models of subatomic particles in particle physics and quasiparticles in condensed matter physics. A QFT treats particles as excited states of the underlying physical field, so these are called field quanta.
Our Vision
Online education is becoming increasingly accessible to a wide variety of demographics. As a result, it has the potential to create opportunities for those otherwise unable to access it. The newfound diversity of students presents considerable difficulties in ensuring that the educational material is effective for each demographic. To that end we propose to implement an A/B-testing framework that will automatically determine an optimal set of educational materials. The teacher provides variations to their material, as well as tests to determine the student's
About this Project
We developed the idea and core implementation of this project during the CERN Webfest 2016. The CERN Webfest is an annual hackathon for the summer students at CERN in Geneva, Switzerland to develop science and humanitarian projects over a weekend.
Developers:
Noa Feldman [feld.noa@gmail.com]

Where can we go from here?

- generalize predictors and tests
- integrate into existing online education platforms

https://github.com/knly/finch

In theoretical physics, **quantum field theory (QFT)** is the theoretical framework for constructing quantum mechanical models of subatomic particles in particle physics and quasiparticles in condensed matter physics. A QFT treats particles as excited states of the underlying physical field, so these are called field quanta.

To optimize the course for you, we first need to get to know you a little better.

Name:

Alice

Birthday:

January

1

2016

Gender:

Female

Mother tongue:

DE

Start Course!

Finch

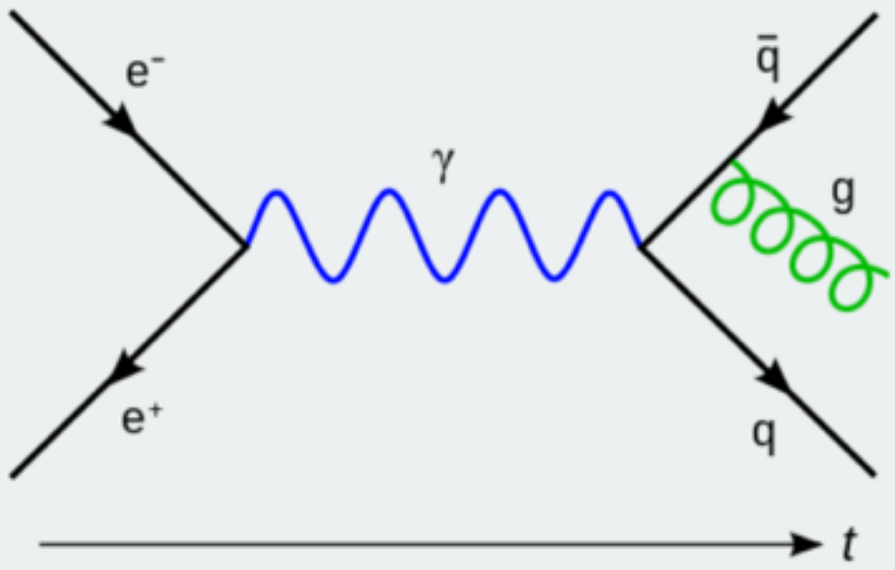
Natural selection
for online eductation.

Introduction to Quantum Field Theory

You're doing great, Alice.

Lesson 1

In theoretical physics, **quantum field theory (QFT)** is the theoretical framework for constructing quantum mechanical models of subatomic particles in particle physics and quasiparticles in condensed matter physics. A QFT treats particles as excited states of the underlying physical field, so these are called field quanta.



In quantum field theory, quantum mechanical interactions between particles are described by interaction terms between the corresponding underlying quantum fields. These interactions are conveniently visualized by Feynman diagrams, that also serve as a formal tool to evaluate various processes.

In quantum field theory, quantum mechanical interactions between particles are described by interaction terms between the corresponding underlying quantum fields. These interactions are conveniently visualized by Feynman diagrams, that also serve as a formal tool to evaluate various processes.

Historically, the development began in the 1920s with the quantization of the electromagnetic field, the quantization being based on an analogy of the eigenmode expansion of a vibrating string with fixed endpoints. In Weinberg (2005), QFT is brought forward as an unavoidable consequence of the reconciliation of quantum mechanics with special relativity.

Test yourself!

What is QFT about?

a) Swiss Cheese

b) Subatomic Particles

c) 1974 movie by Steven Spielberg

Your answer:

Complete Course!

Finch

Natural selection
for online eductation.

Course Title: Introduction to Quantum Field Theory

Lesson 1:

Wikipedia x	
Peskin-Schröder x	
+	

Finch

Natural selection
for online eductation.

Visualization

Thank you for taking this course! Here's how the average results vary with your specified predictor: