AN INITIATIVE BY IIT & IIM ALUMNI

createlab

SINGAPORE'S #1 CODING & ROBOTICS SCHOOL

IMAGINE IT, CREATE IT

About Us

Create Lab works with educators from Oxford, MIT & Singapore's top universities to inspire children to create with technology and prepare them to become 21st Century Leaders.

Our popular coding, robotics, AI-ML, and design thinking courses have been recognized as leading Computational Thinking enrichment programs. Create Lab has been recognized as "Singapore's Best Coding School" by Parents World Magazine and as a Top- 10 start-up in Singapore by CLSA. The organization has operations in Singapore, India, Sri Lanka & Indonesia.

400+
hours of Curriculum

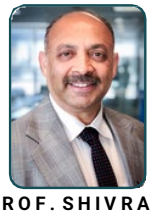
7+
years of experience

8000+
Students taught

Academic Advisory Board

PROF. KEN KAHN

Ken is a Senior Research Scientist at the University of Oxford and has held various teaching positions at MIT & other global institutions. He has also been a consultant to the Rand Corporation and IBM and a research scientist at Xerox PARC. Ken is a pioneer in Computational Thinking and modelling, artificial intelligence and technology enhanced learning with a particular focus on programming languages for kids.



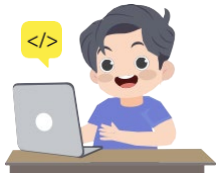
PROF. SHIVRAJ KANUNGO

Shivraj is Associate Dean for undergraduate programs at George Washington University. He has over 30-years of experience in IT management & software engineering. Prior to Washington, Shivraj was a professor at IIT Delhi. He has authored several best-selling books covering topics on business applications of technology. Shivraj is also a widely published author in prestigious scientific journals and a prolific public speaker

PROF. SURANGA NANAYAKKARA

Suranga is the Head of the Augmented Human Lab at the University of Auckland and is a Visiting Faculty at MIT Media Lab. He is also an inventor of several enabling devices for the visually impaired. His work has earned him several global awards including the Innovators Under 35 award by MIT Technology Review and the Research Excellence Award from UOA. He is a TEDx speaker & INK Fellow

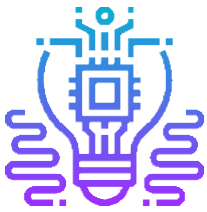
Course Details



Junior Coders & Creators (JCC101)
Age: 5 to 7 Years

BASIC COURSE	
MODULE 1 (15 HOURS)	• Understand what computers are, why we program them, and how it is done • Play unplugged games to learn the importance of algorithms, and how computer programs execute by following precise step-by-step instructions • Tackle team challenges of increasing complexity, aimed at consolidating computing knowledge and honing critical thinking, collaborative, and directional skills • Get introduced to Scratch Jr. ® programming environment, on individual tablets • Solve progressive learning exercises to understand computing concepts including, events, loops, parallelism, and sequencing
MODULE 2 (15 HOURS)	• Design traditional and digital art expressions (characters, music, animations, etc.), and learn to create an interface between them • Learn the Plan, Create, Test & Improve design process, through mini creative projects Design and develop a customized digital story using Scratch Jr. and present to class • Project based module, aimed at harnessing students' innate creativity and appreciating the power and fun of computing • Understand and apply higher computing concepts (messaging, alternative algorithms, functions, etc.), in a fun and interactive manner • Create Scratch Jr. programs to illustrate solutions to everyday problems faced by the students e.g. helping family members, learning math, getting to school, etc. • Design and program quizzes based on individual passion, e.g. numbers, animals, cars, flags, toys, etc., and share with the class.

Course Details



Introduction to Computational Thinking
Age: 7+ years

Basic Course	
MODULE 1 (15 HOURS)	• Understand how computers work and how humans communicate with them • Learn the importance of algorithms and how programs execute through precise step-by-step instructions • Appreciate alternative algorithms and use logical reasoning to compare their efficiency and utility • Get introduced to MIT's Scratch® programming environment through progressive learning exercises that will cover events, sequencing, loops, and messaging • Learn to create an interface between traditional and digital art expressions • Design and develop a digital story using Scratch, and present the result to the rest of the class
MODULE 2 (15 HOURS)	• Understand conditionals (IF, THEN, ELSE statements) and their use in computing • Understanding variables and their use in computing • Introduction to game design • Develop a simple computer game, using all the concepts learnt in the course • Get introduced to key Design Thinking concepts and their use in game/story design • Undertake a creative project to design and develop a computer game/story using the design thinking process and solve for real world constraints • Share the concept, game and the design process with the class through a Start-up-like pitching session
Advanced Course	
OPTIONAL MODULE **SCRATCH YODA: AI (10 HOURS)**	• Introduction to Artificial Intelligence (AI): What? Why? Where? How? • Appreciate how AI is developed, and its relative position to human intelligence • Appreciate the need for Machine Learning (MI), its importance, and use, by tinkering with multiple projects (Teachable Machine, Draw Check, Lip-Sync, etc.) • Understand how ML is developed, the steps involved, and the limitations faced, using age-appropriate IBM® based tools • Develop ML based image recognition projects, based on the student's interest. Using This will be done by integrating the IBM® tools with Scratch® • Create text-based AI-ML projects, including 'Chatbots', 'Intelligent Home', etc. • Conceptualize, create, and share an AI-ML based Capstone project, to solve a problem the student finds pertinent (e.g., image sorter, mood recognizer, mask recognizer, security system, etc.)

Course Details

App Design & Development (ADD)
Age: 10+ years

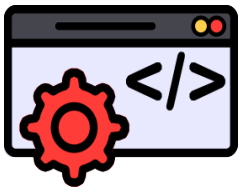
Basic Course	
MODULE 1 (15 HOURS)	• Appreciate the importance of Apps • Introduction to Interactive App Design • Understanding UX/UI components and their features • Applying computer science concepts like event handling, Loops, conditionals, data manipulation (variables & Lists) to Apps • Programming mobile design components like touchscreens, accelerometer, camera, button, clock etc
MODULE 2 (15 HOURS)	• Applying design thinking to conceptualize effective app design • Building app based quizzes and games • Understanding and coding animations • Conceptualizing a project with entrepreneurial mindset to solve a real life problem • Develop stand alone app and learn to publish it on app store.
Advanced Course	
OPTION 1: COMPETITIVE APP DEVELOPMENT (10 HOURS)	• Participate in MIT's app inventor of the month challenge • Conceptualization of App with different design aspects • Understand advanced concepts of App design like sensors, data storage and manipulation • Review and guidance for end to end app development
OPTION 2: APP INVENTOR : AI/ML (10 HOURS)	• Introduction to Artificial Intelligence (AI): What? Why? Where? How? • Appreciate how AI is developed, and its relative position to human intelligence • Undertake projects to develop and apply rule-based AI, for e.g., Intelligent Paper (unplugged), Chatbots, and Games (Human vs AI) • Appreciate the need for Machine Learning (MI), its importance, and use, by tinkering with multiple projects (Teachable Machine, Draw Check, Lip-Sync, etc.) • Understand how ML is developed, the steps involved, and the limitations faced, using age-appropriate IBM® based tools • Develop ML based image recognition projects, based on the student's interest. Using This will be done by integrating the IBM® tools with MIT App Inventor® • Conceptualize, create, and share an AI-ML based Capstone project, to solve a problem the student finds pertinent (e.g., image sorter, mood recognizer, mask recognizer, security system, etc.)

Course Details

Python
Course Outline
Age: 12 + years

Basic Course	
MODULE 1 (15 HOURS)	• Appreciating Text based languages • Understanding data types and related operation • Learning string functions and manipulations • Working with variables, Input and error handling and learning their applications • Building programs with Conditions – Single output, multiple output and nested • Using Loops (While, For & nested) to solve problems
MODULE 2 (15 HOURS)	• Working with complex data types like lists, dictionaries, sets and tuple • Understanding random and its implementation in Python • Building Chatbot using dictionaries and applying various concepts learnt • Understanding the need and usage of Functions including: - Function signatures - Parameter handling - Variable scope - Recursions
Advanced Course	
AI/ML USING PYTHON (20 HOURS)	• Introduction to Artificial Intelligence (AI): What, why where ? • Applications of Artificial Intelligence - Gaming ,NLP, Expert Systems, Vision Systems, Speech Recognition and Intelligent Robots • Data handling models – Colab, Numpy, Pandas etc. • Building projects like house price predictions, movie predictions etc. to understand the models and test their applications • Appreciating Machine Learning approaches: - Supervised Learning – Classification and regression - Unsupervised Learning – clustering

Course Details



Web Design & Development
Age: 10+ years

BASIC COURSE	
Module 1 (6 hours)	• Learn to install and use editors, like 'Brackets', and create beautiful feature-rich webpages in HTML5. • Learn about directory structures and get fluent at editing & navigating index.html files. • Understand the basic syntax of HTML and learn how the code flows.
Module 2 (6 hours)	• Get introduced to more advanced features and appreciate the power of HTML 5 at creating webpages. • Improve aesthetic designs of your websites, by getting introduced to tags like tables, divs etc. • Create and share multiple webpages of choice, be it travel blogs, catalogues, etc. assimilating the concepts learnt.
Module 3 (6 hours)	• Appreciate to modularize HTML code in an easy-to read & easy-to-debug fashion. • Get introduced to best practices for coding and website development. • Create complete webpages with advanced features of HTML 5, using Ids, classes, internal styling, etc.
Module 4 (6 hours)	• Get introduced to JavaScript and enhance websites by improving interactivity. • Appreciate and understand variables, data types, loops, functions and use them to show results on HTML web pages.
Module 5 (6 hours)	• Get introduced to event handling on webpages by adding functional programming in JavaScript. • Add animation or games to webpages and make them more appealing. • Explore the role of change agents, and design, code, & create websites incorporating the concepts learnt.

Course Details

C++ (Basic)

Age: 12+ years

BASIC MODULE
30 hours

- Introduction to a cross-platform language C++
- Getting started with the possible Editors and Compilers related directly to the language.
- Learning about Variables and Basic data types and practicing individual data types.
- Understanding operators to perform operations on variables and values.
- Learning conditions to perform different actions for different decisions.
- Using loops to save time, reduce errors and make code more readable.
- Introduction to Array (a data structure) and Array elements – used to store multiple values in a single variable.
- Storing the memory address of a variable as a value using POINTERS.
- Performing certain actions and reusing the code using Functions and its various concepts (parameters, overloading and recursion).

OBJECT ORIENTED C++
30 hours

- Introduction to Object Oriented Programming with C++ to create full reusable applications with less code and shorter development time.
- Learning about Classes, Objects, Attributes and Methods – the most important aspects of OOPs programming.
- Introduction to Access Specifiers – public, private and protected.
- Learning Encapsulation, Inheritance and Abstraction - concepts to increase security of data and for code reusability.
- Getting started with Exceptions and handling them using specific functions and keywords.

Course Details

Roblox:
3D Game Development
Age: 12+ years

Concepts

Learn and appreciate the attributes of 2 Dimensional and 3 Dimensional spaces
Design and manipulate various Roblox 3D component properties, including shapes, materials, welds, movement, digital colours, gravity, collision, transparency, etc.
Appreciate the importance of programming: Why and how is it done?
Understand the basics of Lua® programming language syntax and flow
Grasp programming concepts like, sequencing, syntax, variables, loops (infinite and finite), operators, debugging, etc.
Understand more complex concepts around 3D movement (teleporting & incremental) and how they can be programmed

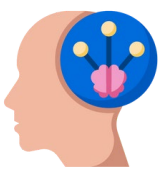
Projects

Build 3 mini-projects to design 3D parts and manipulate shapes, material, & colours
Ceate a simple self-concieved Roblox game using 3D design concepts and simulation of real-world features like gravity, transparency, mass, & collisions
Interact with Roblox projects to understand the need and importance of programming games & part behaviour
Solve upto 7 challenges of progressive difficultly to understand and apply programming concepts around co-ordinate systems (x,y,z), sequencing, variables, loops, functions, and event handling
Develop a complex Roblox game of choice, by programming all the concepts learnt in the course
Present the game to peers, to facilitate idea generation and improvement of the game
Publish Roblox games created, and share with friends and family

Skills developed


Problem solving


Creativity


Logical Reasoning


Project Delivery


Collaboration

OUR FOUNDERS

DHRUV VOHRA

CO-FOUNDER/GROUP PRESIDENT

Dhruv oversees Create Lab's business across strategy & learning engagement. He has more than 25-years of experience as an award-winning technology analyst & as Head of Research, CLSA. He has advised Global funds on strategy in markets including Taiwan, India, HK & Singapore. Dhruv has an MBA and is a chartered accountant.

SHIV CHANDRA

CO-FOUNDER / CEO – INDIA

Shiv is an Electrical Engineer from Delhi College of Engineering and has an MBA from IIT Delhi. He has over 20 years of experience in consulting & technology with GE, Ernst & Young, Fidelity and Aon Hewitt. In his last role he was Vice President, Technology Strategy & Architecture with one of India's leading IT enabled services companies.

"createlab *Stories*"

My experience with Createlab has been very satisfying. I have seen my kid falling in love with coding and waiting for lessons. The teachers are patient and very focused. I have recommended them to my friends.

★★★★★

Shruti Gogia
(Rudransh's Mom)

It's been a year long journey for me and my girls with Create Lab. Dhruv sir and Sangeeta mam's personal attention and guidance has gotten them interested to coding and that's how they kept going levels.The best part I like about Create Lab is that they are committed and flexible both.

★★★★★

Urmi Shah
(Kiya & Jeianna's Mom)

Create lab has a unique approach to bringing the best out of kids. Small group and one to one sessions ensure the child gets proper attention and learns at their own pace through customised modular learning. Our kid is associated with them for almost two years now and has developed excellent logical thinking skills thanks to their efforts.

★★★★★

Himanshu Sikka
(Rian's father)

It's been almost a year since both my children have been pursuing scratch programming courses at Create Lab and they are absolutely loving it. They teach a concept and they make the child come up with his/her own game and based on that they teach them how to enhance that game or how to make it even better.

★★★★★

Nandita

More details on:

Website
https://mycreatelab.lk

Facebook
www.facebook.com/CreateLabLanka

Our International Partners and Collaborators

Google

BLUEBELLS SCHOOL INTERNATIONAL

SoftBank

EXCELSIOR AMERICAN SCHOOL

INFOCOMM MEDIA DEVELOPMENT AUTHORITY

little Sparks MONTESSORI

NUS National University of Singapore

UWCSEA

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