



ITU-TRCSL training on
Developing Digital Skills for Job Creation
“Modern Application Design & Development for Achieving SDGs”
10-14 December 2018
Colombo, Sri Lanka
AGENDA

Objectives

A large opportunity exists for countries to embrace modern application design and development tools and methods. Adopting such tools and methods allows them to innovate faster and deliver technology solutions that make a powerful impact towards socio-economic development.

Artificial Intelligence is one of the most important emerging technologies that will greatly impact employment and the delivery of services. It is critical that Governments look at policies to guide and support development and considers the potential implications of AI.

Blockchain and decentralised ledgers provide many benefits to many organisations and industries. Distributed ledgers present a new paradigm for how information is collected and communicated, and are poised to revolutionize the way individuals, enterprises and governments transact.

Keeping these opportunities in mind, ITU and TRCSL initiated a training course, for selected government agencies in Colombo, Sri Lanka.

The main objectives of the training course are to:

- Introduce job oriented practical digital skills for web development and coding;
- Inculcate a greater capability to innovate using emerging technologies such as AI and Blockchain;
- Learn the processes and skills to design, develop and deliver a modern web application prototype that solves an important problem and delight users
- Be exposed to modern development tools and methodologies like Test Driven Development, Continuous Integration and Agile development
- Understand the current state of AI research and policy
- Learn how Blockchain and decentralised ledgers can be leveraged to improve services

Experts

Name	Expertise	
Mr. Peter Argent	Ruby on Rails developer, Innovation and digital skills educator Brisbane, Australia	LinkedIn
Mr. Chim Himidumage	Founder and CEO, Fidenz Technologies & Radical Ledger Technologies Colombo, Sri Lanka	LinkedIn



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Mr. Nik Dawson	PhD Candidate at University of Technology, Sydney Artificial Intelligence researcher, author, international development technologist Sydney, Australia	LinkedIn
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Target Audience

Ideal participants have some working knowledge of web design and development as well as databases and web infrastructure.

Tentative participants' arrangements for training program are follows:

- 12-15 Participants – (Nominate by Ministry of Education – ICT Branch)
- 12-15 participants (Nominate by Dept. of Agriculture
- 12-15 Participants (Nominated by Small Enterprises Development Division.
- 05- other (Related institutions)

Who should attend?

This multi-stakeholder workshop targets all stakeholders involved in nurturing and building digital innovation environment, favourable to entrepreneurship and creation of start-ups, growth and expansion of small firms, public service transformation, and sector specific digital transformation. In particular, its agenda has been customized for the needs of the ICT policy makers, regulators, national innovation agencies, development agencies, entrepreneurs, ecosystem builders, Financial stakeholders, academia as well as institutions willing to accelerate their digital transformation journey fostering ICT centric innovation and developing coherent approaches to move countries towards an innovation driven economy.

Medium of Instruction

English

Evaluation

The assessment of the participants shall be based on the - time spent on the training and the following parameters:

Evaluation Parameter	Weightage (in %)
Quizzes/ presentations/ Group Exercise	60 %
Attendance	10 %
Participation	30 %



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10 December 2018– Day 1		
08:30 – 09:00	Registration	
09:00 – 09:30	Opening Ceremony Opening Remarks: Mr. Sameer Sharma, Senior Advisor, ITU Welcome Remarks: Director General, TRCSL	
09:30-09:40	GROUP PHOTO	
09:40 – 10:00	Introduction to Training Program What you will learn, build and be tested on. The Power of Ruby on Rails What is Ruby on Rails and how can it be used to deliver powerful applications quickly? What type of technology solutions can Ruby on Rails be used for?	Mr. Peter Argent
10:00 — 10:30	Building Technology Capability Hiring and developing talent in Sri Lanka Blockchain in the real world Practical applications for Blockchain	Mr. Chim Himidumage
10:30 - 11:00	Morning Break	
11:00 –11:30	Artificial Intelligence Introduction How AI will impact your world	Mr. Nik Dawson
11:30 — 12:30	The Importance of User Experience Design Design thinking Human Centred Design	Mr. Peter Argent



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	Group Activity 1.1 Design thinking challenge	
12:30 – 13:30	Lunch Break	
13:30 – 15:00	User Experience Design UX design processes and best practice UX tools and templates Group Activity 1.2 UX design challenge	Mr. Peter Argent
15:00 – 15:30	Afternoon Break	
15:30 – 17:30	User stories How to create quality user stories Group Activity 1.3 User stories challenge Database Design Choosing a database management system Designing the database for your web application Group Activity 1.4 Database design challenge	Mr. Peter Argent



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11 December 2018 – Day 2		
09:00 – 10:30	Impacts of Artificial Intelligence Implications of AI on emerging economies Current state of research in AI AI Safety Collaboration with Academia	Mr. Nik Dawson
10:30 - 11:00	Morning Break	
11:00 – 12:30	Class Activity Explore Artificial Intelligence capabilities in this practical workshop	Mr. Nik Dawson
12:30 – 13:30	Lunch Break	
13:30 – 15:00	Introduction to the Ruby language Development environment setup Object Oriented Ruby development Discover Ruby on Rails Creating your first application Understanding the Rails folder structure Class Activity Using Rails commands to build functionality quickly Create a simple web application together	Mr. Peter Argent
15:00 – 15:30	Afternoon Break	
15:30 – 17:00	Explore Ruby on Rails Deep dive into how Ruby on Rails works Model View Controller software design pattern	Mr. Peter Argent



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12 December 2018– Day 3		
09:00 – 10:30	Application Security: Authentication with Ruby on Rails Authentication options and methods Class Activity Install and implement authentication into a Ruby on Rails application	Mr. Peter Argent
10:30 - 11:00	Morning Break	
11:00 –12:30	Test Driven Development What is TDD? How TDD works with RoR Agile Development Agile methodologies and tools Group Activity 2.1 Assign Agile development roles to the group Build the sprint Use a Kanban board Have a stand-up meeting	Mr. Chim Himidumage
12:30 - 13:30	Lunch Break	
13:30 –15:00	Ruby on Rails API development Ruby on Rails architecture and API tools Options for creating mobile applications with Ruby on Rails infrastructure Cloud Services & Tools Deploying RoR applications: Options and methods Optimisation tools Continuous Deployment/Integration	Mr. Chim Himidumage
15:30 – 16:00	Afternoon Break	
16:00 – 17:30	Blockchain in depth Decentralised Ledgers Smart Contracts dApps Decentralised Identity Class Activity Create a decentralised ledger	Mr. Chim Himidumage



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13 December 2018– Day 4		
09:00 – 10:30	Major Class Project Review application design Class Activity Setup application Setup database and models Setup authentication and authorisation	Mr. Peter Argent
10:30 - 11:00	Morning Break	
11:00 –12:30	Build application functionality Add business logic Create mailers Uploading media files Implement file uploading in the application	Mr. Peter Argent
12:30 - 13:30	Lunch Break	
13:30 –15:00	Implement API Integration Connect application to Google Maps API Display objects on Google Maps Landing page design Work on improving the landing page	Mr. Peter Argent
15:30 – 16:00	Afternoon Break	
16:00 – 17:00		Mr. Peter Argent
17:00 — 17:30	Class Test/Quiz	



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14 Dec 2018– Day 5		
09:00 – 10:30	Create dashboard Create an admin dashboard Application Deployment Deployment options Class Activity Deploy application Optimise application	Mr. Peter Argent
10:30 - 11:00	Morning Break	
11:00 –12:30	Training Wrap Up Review learning and development Complete feedback Award certificates	Mr. Peter Argent
12:30 - 13:30	Lunch Break	
13:30 –17:00	Site visit Closing	