



Venture center



Antfarm Robotics Pvt. Ltd

Educational Workshop Series

5-Days Robotics Workshop : Learn to Program Robots

LEARN	A text based Programming language suitable for kids [Lua]. Learn fundamentals of programming, basic algorithms and implement on a robotic simulator which will move around as per your programming.			
FOR WHOM	<ul style="list-style-type: none"> • 6th – 12th standard Kids with keen interest in electronics as hobby • Must have attended an earlier Robotics Workshop • Participants need a laptop with install permissions 			
WHEN	Batch 1 :- 19 – 23 May 2014 - 9AM – 1PM Batch 2 :- 19 – 23 May 2014 – 2PM – 6 PM			
WHERE	E-Class Room, 100, NCL Innovation Park, National Chemical Laboratory Campus Dr Homi Bhabha Road/ Pashan Road, Pune -411008			
CONTACT	<table border="1"> <tr> <td>Administrative and registrations queries: Miss Lipika Biswas</td> <td>Technical queries: Mr S Basu; Phone: +73500-39098 ; +91-9260462088</td> </tr> </table> <p>100 NCL Innovation park, Dr. Homi Bhabha road, Pashan, Pune- 411008 Phone no- 25865877 Email:- eventsdesk@venturecenter.co.in</p> <p>For more information, visit: http://www.venturecenter.co.in/workshops/</p>		Administrative and registrations queries: Miss Lipika Biswas	Technical queries: Mr S Basu; Phone: +73500-39098 ; +91-9260462088
Administrative and registrations queries: Miss Lipika Biswas	Technical queries: Mr S Basu; Phone: +73500-39098 ; +91-9260462088			
FEE	Rs 3000/- per participant. Limited seats – 25 per batch			



Venture center



Antfarm Robotics Pvt. Ltd

Workshop description and Synopsis

Robotics is a multi-disciplinary subject with roots in electronics , computer science and mechanics. Although it is not taught in schools , a lot of kids still pursue it as a hobby while struggling to find out why something works or does not work. In this workshop we teach kids how to Program in Lua , a critical skill for the next generation. We also provide a basic Programmable Robot which will move around as per the programming.

- Learn Lua, a lightweight text based programming language
 - Variables and types
 - Tables
 - Loops and conditionals

- Functions
 - Libraries and usage
 - Learn Basic Algorithms
 - Search
 - Sort
 - Flowchart

- **Program a Visual Robotic Simulator**
- **Make your Robot do tasks in the simulator**

Target audience

- 6th – 12th Standard Students in Science
- The workshop assumes students have keen interest in electronics or robotics
- Must have attended a previous Robotics Workshop

- **Participants need a laptop with install permissions**



Venture center



Antfarm Robotics Pvt. Ltd

Schedule

Timings	Topic	Duration	Comments
Day 1 :			
9:00 - 11:00	Lua : What is it? Learn about variables	120 mins	Introduction to Programming
11:00 - 11:15	Break	15 mins	Assignments
11:15 - 13:00	Variable Assignment and Copy Mathematical Operations Introductions to Tables Learn about variables	105 mins	
		120 mins	
			Introduction to Programming
Timings	Topic	Duration	Comments
Day 2 :			
9:00 – 11:00	Data Representation Nested Tables	120 mins	Tables [Continued]
11:00 - 11:15	Break	15 mins	Conditionals
11:15 - 13:00	Loops if-then-else Make small programs	105 mins	
Timings	Topic	Duration	Comments
Day 3 :			
9:00 – 11:00	Functions and Return value Recursive functions	120 mins	Functions
11:00 - 11:15	Break	15 mins	
11:15 - 13:00	Library usage Writing a Library	105 mins	Libraries
Timings	Topic	Duration	Comments
Day 4:			
9:00-11:00	Searching	120 Mins	Algorithms
11:00-11:15	Break	15 mins	
11:15-13:00	Sorting	105 Mins	
Timings	Topic	Duration	Comments
Day 5:			
9:00-10:00	Learn how to program a robotic simulator	120 Mins	Bot programming
10.00-11.00	Competetion Problem description		
11:00-11:15	Break	15 Mins	
11:15-13:00	Competetion Payout Certificate Distribution	105 Mins	Closure

Workshop Includes

- Fun experiments and practical sessions
- Joining a mailing list community of hobby robotics enthusiasts
- Certificate of Participation from Venture Center



Venture center



Antfarm Robotics Pvt. Ltd

Faculty

The workshop shall be taught by **Mr S. Basu**.

Profile : Indian National Maths Olympiad awardee , 1998 .Design Engineer with experience in both Digital and Analog Design. Experienced in a multitude of EDA and simulation tools. Strong interests in Embedded systems design and multicore code design. Hobby Robotics fan and entrepreneur in related field. Puzzle solving enthusiast. Founding member of IIT Kharagpur Robotics Club.

Education : B.Tech (H) '03 , M.Tech '04 (Indian Institute Of Technology , Kharagpur)

Experience: Component Design Engineer for Intel India's first Multicore project; Co-author of Enhanced Structural Tester Based Functional Test methodology for Intel Multicore processors; Mixed-Signal Design Consultant for National Semiconductor's Sponsored Project at IIT Kharagpur; Currently Adjunct Faculty of Electrical Engg., College Of Engg. , Pune

Research and previous Workshops: Behavioral Modelling for Mixed Signal Sytems using Verilog-AMS speeding up simulation times by 1000x; Analysis of spice simualtion engine for simulation speedup; Computer Architecture : Multi-core programming using Message Passing Interface and CUDA; Workshop on Behavioral Modelling at IIT Kharagpur; Workshop on SPICE at College of Engg, Pune; Workshop on Digital Design at Venture Center, Pune, Workshop on Multi-Core computing at Venture Center , Pune , Workshop on Maths Olympiad Training at Venture Center , Pune.

About the organizers

About Venture Center

Entrepreneurship Development Center (Venture Center) – a CSIR initiative – is a Section 25 company hosted by the National Chemical Laboratory, Pune. Venture Center strives to nucleate and nurture technology and knowledge-based enterprises by leveraging the scientific and engineering competencies of the institutions in the Pune region in India. The Venture Center is a technology business incubator supported by the Department of Science & Technology's National Science & Technology Entrepreneurship Development Board (DST-NSTEDB). Venture Center's focuses on technology enterprises offering products and services exploiting scientific expertise in the areas of materials, chemicals and biological sciences & engineering. For more information, visit <http://www.venturecenter.co.in>

About Antfarm Robotics Pvt. Ltd.

ANTFARM ROBOTICS PVT. LTD. is a Start-up in the field of Toy Robotics focused on building the next generation of smart toys for Kids based on Swarm Robotics. Based out of Pune, it is founded by Subhojit Basu, who has also been the founder member of Robotics Club in IIT Kharagpur. Subhojit is a VLSI designer by his education at IIT Kharagpur and has been working on Embedded Systems for some time now. ANTFARM is an associate incubatee at Venture Center, Pune. Hobbykits (www.hobbykits.co.in) is a Brand of ANTFARM dealing with easy to assemble, hobby robotic kits for kids. The Product LineBot used in this workshop is a product of Hobbykits.