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## **B17 & B18**

### **Activities**

a) STEM Hands-On activities:

- Logic Games.
- Lightbot Challenge
- Interactive Games.
- Kinect

b) STEM Workshops:

- Lightbot challenge – Dr. Nur Haliza / Ms. Tan Lyk Yin as Facilitator
- Wix: Developing Your Personal Webpage - Mr. Soong Hoong Cheng / Mr Syed Muhammad Bin Syed Omar as Facilitator
- Hour of Code: Angry Bird Code Game – Dr. Jasmina Khaw Yen Min / Dr. Tan Joi San as Facilitator
- Star Wars- Building a Galaxy with Code – Dr. Tan Joi San / Dr. Nur Haliza as Facilitator
- Virtual Reality and Non-Immersive Environment - Mr. Kesavan / Dr. Jasmina Khaw Yen Min as Facilitator

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### 3.1 STEM Hands-on Activities Details

1. Logic games usually simulate some well-known logic puzzle like Master Mind or the game where you have put sliding numbered tiles in order inside a box. Apart from the challenge zone time, rest of the time people can visit and play any game turn by turn. It includes the chess competitions.

Requirements:

- Internet Connection: [http://www.softschools.com/games/logic\\_games/](http://www.softschools.com/games/logic_games/)
- Browsers that support Adobe Flash

2. Lightbot is a programming puzzle game: a puzzle game that uses game mechanics that are firmly rooted in programming concepts.

Rewards to the participants who are able to complete all the stages:

Requirements:

- Internet Connection: <http://lightbot.com/hocflash.html>
- Browsers that support Adobe Flash

3. Interactive games provide the interactions to the students to incite their interests in computer learning. One of the prominent ideas is the gesture control interactive games (Creative Senz3D Camera) such as A Million Minions, Kung Pow Kevin and World Reconstruction @ Aligned and many more. Apart from that, there will be flash games provided school children as well.

- Internet Connection:
- Browsers that support Adobe Flash
- 1 Kinect Devices: Creative Senz3D Camera (*Own Device*)
- 1 Leap motion

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### 3.2 STEM Workshop Details (Lab)

#### 1. Title: Lightbot challenge

##### a) Trainer:

- Dr. Nur Haliza (nurhaliza@utar.edu.my)
- Ms. Tan Lyk Yin ([tanlyky@utar.edu.my](mailto:tanlyky@utar.edu.my))

##### a) Objectives:

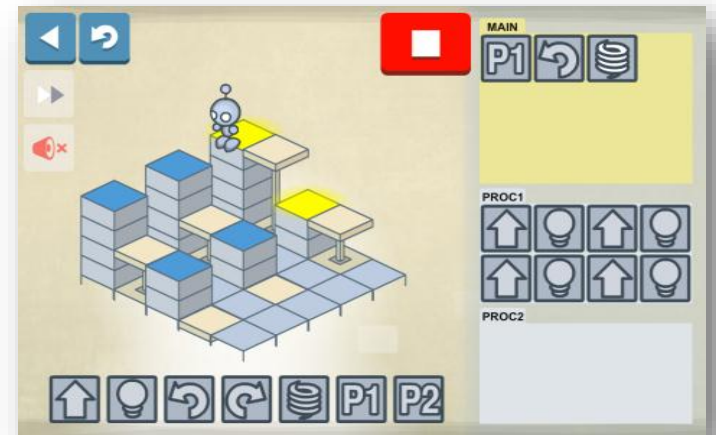
- To introduce logic programming in interactive ways.

##### b) Topics:

- Stage 1 – Basics: 8 puzzles. To be used as intro and warm-up.
- Stage 2 – Procedures: 6 puzzles. To be used in competition for primary school group.
- Stage 3 – Loops: 6 puzzles. To be used in competition for secondary school group.
- Stage 4 -- Covering LightBot concepts: Basic, Procedures and Loops

##### c) Requirements:

- Must have Internet Connections to website: <http://lightbot.com/hocflash.html>. Web Browsers that support Adobe Flash.



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## 2. Title: Wix: Developing Your Personal Webpage

### a) Trainer:

- Mr. Soong Hoong Cheng ([soonghc@utar.edu.my](mailto:soonghc@utar.edu.my))
- Mr. Syed Muhammad Bin Syed Omar (Assistant)

### b) Objectives

- To introduce free and fun ways to develop your own website.

### c) Topics:

- Introduction
- Explaining the concept of Multimedia Elements:
  - Text
  - Video
  - Image
  - Animation
  - Sound
- 3. Word Wide Web (WWW) and HyperText Markup Language (HTML)
- Registering the Website.
- Website design creation hands-On.

### d) Requirements:

- Must have Internet Connections to website: <http://www.wix.com/>.



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### 3. Title: Hour of Code: Angry Bird Code Game

#### a) Trainer :

- Dr. Jasmina Khaw Yen Min ([Khawym@utar.edu.my](mailto:Khawym@utar.edu.my))
- Dr. Tan Joi San ([jsta@utar.edu.my](mailto:jsta@utar.edu.my))

#### b) Objectives:

- To provide the learning platform for the concepts of how to code using drag-and-drop visual blocks.

#### c) Topics:

- Introduction (through a video)
- The concept of move forward, turn
- The concept of repetition
- The concept of event controller

#### d) Requirements:

- Internet is necessary, and the link is as follows:
- <http://static-hoc.studio.code.org/?s=hoc&stage=1&puzzle=1>.



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#### 4. Title: Star Wars- Buiding a Galaxy with Code

a) Trainer:

- Dr. Tan Joi San ([jsta@utar.edu.my](mailto:jsta@utar.edu.my))
- Dr. Nur Haliza ([nurhaliza@utar.edu.my](mailto:nurhaliza@utar.edu.my))

b) Objectives:

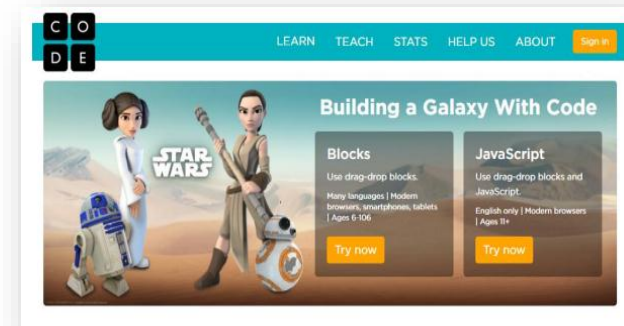
- To provide the learning platform for the concepts of how to code using drag-and-drop visual blocks.

c) Topics:

- There are 15 puzzles that are required to be solved by the participant. There are basically four main parts in the program: Game space, instructions, tool box and workspace.

d) Requirements:

- Internet is necessary, and the link is as follows:
- <http://static-hoc.studio.code.org/>.



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5. **Title: Virtual Reality and Non-Immersive Environment**

a) Trainer : Mr. Kesavan Krishnan ([kesavank@utar.edu.my](mailto:kesavank@utar.edu.my))

b) Dr. Jasmina Khaw Yen Min ([Khawym@utar.edu.my](mailto:Khawym@utar.edu.my))

c) Objectives:

- To provide a creative platform to enable to build and code their own experiences by immersing into virtual environment.

d) Topics:

- Modelling - Building 3D models to explain and demonstrate different concepts.
- Texturing – Application of surface texture, or color information on a 3D objects.
- Behavioral and Interaction (animations) - Identify behaviors exhibited by objects; classify them into simple physical, and making the illusion of motion of 3D object.
- Rendering – Rendering based on texture mapping in a projection based virtual environments.



e) Requirements:

- Internet is necessary, and the link is as follows:
- <https://cospaces.io> .

### 3.3 STEM Workshop Schedule

Date	Time	Coordinators and Helpers	Workshop title	Venue
<b>1<sup>st</sup> November 2019 (Friday)</b>				
2-Nov-2018	11.00am -12.00pm	Dr. Nur Haliza / Ms. Tan Lyk Yin  <i>Student Helpers</i>	How to train your bot challenge	MIECC
2-Nov-2018	12.30pm -1.30pm	Dr. Tan Joi San / Dr. Nur Haliza  <i>Student Helpers</i>	Star Wars- Buiding a Galaxy with Code	MIECC
2-Nov-2018	2.00pm -3.00pm	Mr. Soong Hoong Cheng / Mr Syed Muhammad  <i>Student Helpers</i>	Wix: Developing Your Personal Webpage	MIECC
2-Nov-2018	3.30pm -4.30pm	Mr. Kesavan / Dr. Jasmina  <i>Student Helpers</i>	Virtual Reality and Non-Immersive Environment	MIECC



<b>2<sup>nd</sup> November 2019 (Saturday)</b>				
3-Nov-2018	11.00am -12.00pm	Dr. Nur Haliza / Ms Tan Lyk Yin  <i>Student Helpers</i>	How to train your bot challenge	MIECC
3-Nov-2018	12.30pm -1.30pm	Dr. Tan Joi San / Dr. Jasmina Khaw  <i>Student Helpers</i>	Hour of Code: Angry Bird Code Game	MIECC
3-Nov-2018	2.00pm -3.00pm	Mr. Soong Hoong Cheng / Mr Syed Muhammad  <i>Student Helpers</i>	Wix: Developing Your Personal Webpage	MIECC
3-Nov-2018	3.30pm -4.30pm	Mr. Kesavan / Dr. Jasmina  <i>Student Helpers</i>	Virtual Reality and Non-Immersive Environment	MIECC
<b>3<sup>rd</sup> November 2019 (Sunday)</b>				
4-Nov-2018	11.00am -12.00pm	Dr. Nur Haliza / Ms Tan Lyk Yin  <i>Student Helpers</i>	How to train your bot challenge	MIECC
4-Nov-2018	12.30pm -1.30pm	Mr. Soong Hoong Cheng / Mr Syed Muhammad  <i>Student Helpers</i>	Wix: Developing Your Personal Webpage	MIECC
4-Nov-2018	2.00pm -3.00pm	Mr. Kesavan / Dr. Jasmina  <i>Student Helpers</i>	Virtual Reality and Non-Immersive Environment	MIECC