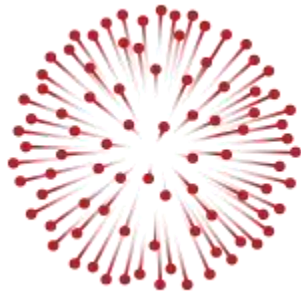




# Smart Nation



Smart Nation  
S I N G A P O R E

Singapore strives to become a Smart Nation to support better living, stronger communities, and create more opportunities, for all.

<https://www.smartnation.sg/about-smart-nation/enablers>

# 5 Key Domains for Smart Nation

- Transport;
- Home & environment;
- Business productivity;
- **Health and enabled ageing**; and
- Public sector services.

From <https://www.smartnation.sg/about-smart-nation/enablers>

# What is National Software Competition?

**This event, the 33<sup>nd</sup> National Software Competition, is organised by Singapore Polytechnic's School of Digital Media and Infocomm Technology (DMIT).**

**We hope to heighten IT awareness amongst youth by encouraging creativity and innovation in IT, and the acquisition of skills in [the Internet of Things](#).**

# What is Internet of Things (IoT)?

- IoT is a concept of connecting any device with an on and off switch to the Internet (and/or to each other).
- This includes everything from cell phones, coffee makers, washing machines, headphones, lamps, wearable devices and almost anything else you can think of.
- This also applies to components of machines, for example a jet engine of an airplane or the drill of an oil rig.

# What is Internet of Things (IoT)?

- The IoT is a giant network of connected “things” (which also includes people). The relationship will be between people-people, people-things, and things-things.
- Every Internet of Thing device consists of four basic things: Sensors and/or effectors, compute capability and connectivity.
- [‘Life Simplified with Connected Devices’ - Video Demo](#)

# Competition Theme

- Problem Statement:
- **Activate and empower youths to adopt healthy lifestyle**
- Design an **IoT** solution that addresses the problem statement.

# Theme & Scope

Theme: **Activate and empower youths to adopt healthy lifestyle**

Students can select any one or multiple of the below areas to promote the uptake of healthy behaviours or habits:

Physical Wellbeing	Mental Health	Smoking Cessation	Others
Increase uptake of: <ul style="list-style-type: none"><li>• Physical activity</li><li>• Nutrition</li><li>• Sleep</li></ul>	Promote aspects of mental wellbeing: <ul style="list-style-type: none"><li>• Resilience</li><li>• Positive self-esteem</li><li>• Stress management</li></ul>	Raise awareness on the harmful effects of smoking and to nudge young smokers to quit	Other options of healthy lifestyle



# What will students do during competition?

- Competition has 2 stages: Preliminaries and Finals.
- Based on the competition theme, team will ideate and conceptualize a solution using IoT software and hardware.
- The solution developed is an aggregation of information collected from the sensors and processed by the software to accomplish the desired functionality of the competition theme.
- All teams will submit Powerpoint slides **and** video of their prototype solution by **11 Sep 10am** through **NSC website (available from 6 Sep onwards)**.
- Submit downloadable links of your slides/videos.
- Results for Preliminaries will be announced on **13 Sep 9am** on NSC website.
- Selected teams who qualify for Finals will proceed to setup their IoT prototype to demonstrate their work to a panel of judges on **15 Sep**.

# NSC 2017 Competition

<b>NSC 2017 (Judging and Prize Presentaiton)</b> Date: 15 <sup>th</sup> September 2017 (Friday) Venue: Singapore Polytechnic Convention Centre (SPCC) Time : 1130am – 530pm		
	<b>Activity</b>	<b>Venue</b>
<b>1130am</b>	Finalists report for competition Draw lots for booths	SPCC
<b>1130 to 1230</b>	Finals setup IoT solutions at booths	SPCC
<b>1130 to 1300</b>	Lunch	Food courts
<b>1300</b>	Briefing for finalists	SPCC
<b>1345</b>	Finalists Standby for Judging	SPCC
<b>1400 to 1600</b>	Finalists Presentation of prototypes/ Voting begins	SPCC
<b>1600</b>	Voting closed	SPCC
<b>1600 to 1730</b>	Guest Speaker/ Prizes Presentation/Photo Taking	SPCC Theatre

If you are selected as a finalist, you are given 8 minutes to present your IoT prototype to the judges in the Finals.

# If your team is not shortlisted for Finals

- Return all the loaned items (eg. the Raspberry Pi and Grove Pi) to SP.
- Date: 15 Sep Friday 2017
- Venue: SPCC
- Time: 2pm to 5pm.
- Certificates of Participation will be issued thereafter.

# Singapore Polytechnic Convention Centre (SPCC)



# What are the judging criteria?

## **Value/Usefulness/Appeal of Solution/Competition Theme**

The solution fits the competition theme. The solution is useful to the target market and users will prefer the solution over other alternatives. Users will be inclined to pay for the solution as they find it appealing.

## **Appropriate Use of Sensors**

The solution make use of appropriate sensors to solve the problem.

## **Innovativeness/Creativity**

They should not be used for other competitions. Solution with enhanced or innovative features distinguishing it from other similar existing solutions.

## **Working/Functional Features**

All features work as described without bugs.

## **Presentation**

Able to handle judges' questions confidently and present the prototype clearly.

## **Voting**

Every audience vote counts!

# Equipment loaned to teams

## RASPERRY PI 2 MODEL B, with accessories

S/N	Description
1	RASPERRY PI 2 MODEL B PCB board
2	8GB micro SD card with preinstalled RASPBIAN WHEEZY
3	EDUP miniature WIFI Module, with Drivers & Guide CD
4	5V 2A USB port power adapter
5	USB MICROB cable 1.8m Black
6	HDMI to VGA video adapter White
7	Mini jack audio cable White
8	USB MICROB cable White

OR

## RASPERRY PI 3

S/N	Description
1	RASPERRY PI 3 MODEL B PCB board, with WIFI
2	16GB micro SD card with preinstalled RASPBIAN WHEEZY
3	5.1V 2.5A USB port power adapter
4	USB MICROB cable

OR

## Others

S/N	Description
1	LAN Cable
2	6-axis accelerometer/gyroscope sensor

## GROVE PI

S/N	Description
1	Grove Pi+
2	Grove-Button + cable
3	Grove-Light Sensor + cable
4	Grove-Buzzer + cable
5	Grove-Sound Sensor + cable
6	Grove-Red LED + cable
7	Grove-Blue LED + cable
8	Grove-Green LED + cable
9	Grove-LCD RGB Backlight + cable
10	Grove-Rotary Angle Sensor + cable
11	Grove-Temperature & Humidity Sensor + cable
12	Grove-Ultrasonic Ranger + cable
13	Grove-Relay + cable
14	User Guide (incl. Tutorial)

# Pictures of Equipment



# Do's and Don'ts

- Do's
  - Must make use of provided sensors and Raspberry Pi and GrovePi. At least 1 provided sensor is used.
  - You may make use of the existing ports/header pins of the Raspberry Pi to attach additional sensors/hardware if you wish.
  - **Must** use Python language in your solution.
  - Encouraged to use web app in your solution.
- Don'ts
  - **Not** allowed to switch to other IoT hardware platforms like Arduino or BeagleBone or Galileo etc



# Prizes

- Champion
- 1<sup>st</sup> Runner Up
- 2<sup>nd</sup> Runner Up
  
- Most Popular Project
- Most Innovative Project
- Best Presentation
- 1 x Golden Ticket to compete in the NIC Face-off | App Development. The Winning Champion of NIC Face-off | App Development will get the chance to participate in Asia Pacific ICT Alliance Awards (APICTA Awards) 2017.