

CSE

COMPUTING CAMP

<Information Technology>

<coder>Sravya Nagalakunta</coder>

SRAVYA NAGALAKUNTA

My name is Sravya Nagalakunta, studying in the 11th grade. I would like to call myself an avid art enthusiast and find pleasure in practising various art forms. I have always loved math, design and computer science. My love for STEAM first began with simple Scratch code, which developed into a passion. I am currently involved in various programs and organizations like: greenlight 4 girls, codenovate, new york academy of science, reinvented magazine and more. Computer science is an amazing field and therefore, I plan to pursue it.

ACKNOWLEDGEMENT

I would like to extend my gratitude to AUS and Dr. Fadi Aloul for this wonderful opportunity and for selecting me.

The Computing Camp was highly insightful and informative. Though the camp spanned for 6 days, it was one of the best sessions I have ever attended.

It helped me better my computing skills and furthered my interest in computer science.

Thank you Mr. Ahmad Al Nabulsi, Ms. Hend ElGhazaly, Mr. Mohammed Elnawawy, Ms. Salsabeel Shapsough, Mr. Sameer Alawnah and Mr. Wissam Abou Khreibe for your wonderful sessions and for guiding all of us.

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DAY 1

PYTHON PROGRAMMING

The main goal of this session was to understand and learn about the basics and pre-requisites in python programming.

Topics covered: Print, Variables, Functions, and Loops

We learned to create patterns and when to use while or for loops.

```
for i in range(5):  
    print("*"*(5-i))
```

```
*****
```

```
****
```

```
***
```

```
**
```

```
*
```

Using information I learnt at the camp, I created a program to detect whether a year is a leap year or not..

```
x=eval(input("Enter year"))
if x%4==0 and x%100!=0 or x%400==0:
    print(x,"is a leap year")
else:
    print(x,"is not a leap year")
```

```
Enter year2004
2004 is a leap year
>>>
```

```
Enter year1002
1002 is not a leap year
>>> |
```

DAY 2

BUILDING A BASIC COMPUTER

The main goal of this session was to understand and learn about the basis of a physical computer. We learned about logic gates and boolean which were then implemented in Minetest using mesecons mod.

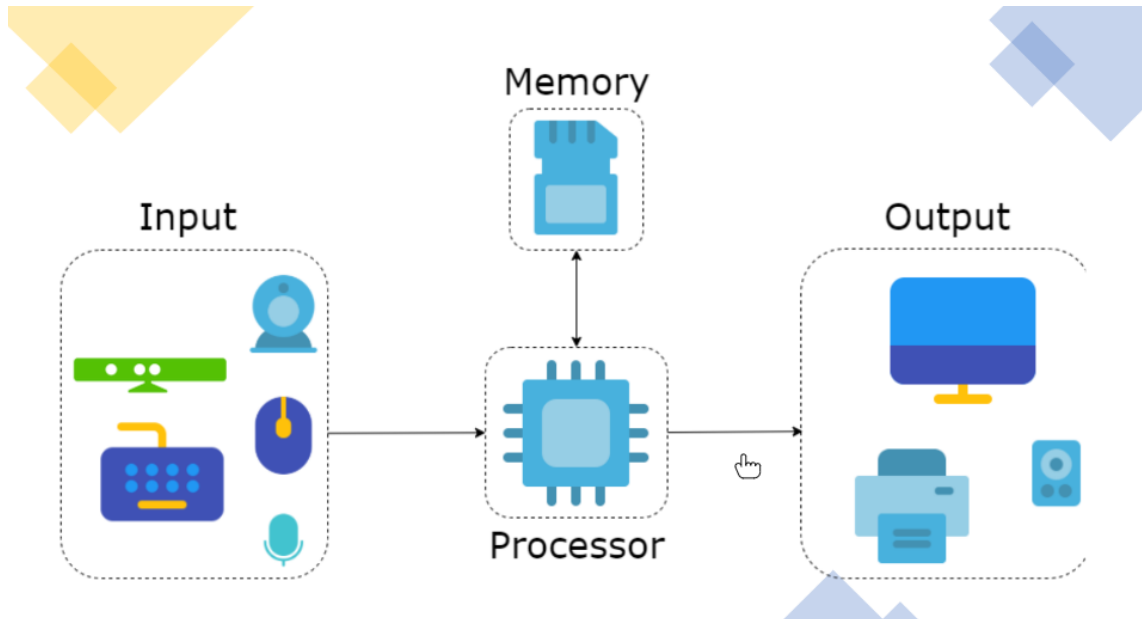
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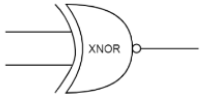
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American University of Sharjah
United Arab Emirates

Basics of Building a Computer

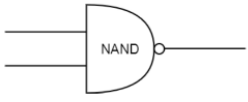
AUS High School Computing Camp ©

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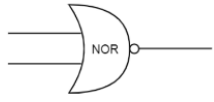




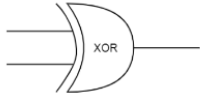
A	B	OUT
0	0	1
0	1	0
1	0	0
1	1	1



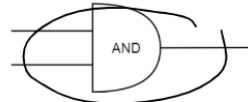
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1	0	1
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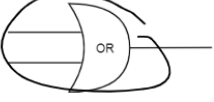
A	B	OUT
0	0	1
0	1	0
1	0	0
1	1	0



A	B	OUT
0	0	0
0	1	1
1	0	1
1	1	0






A	B	OUT
0	0	0
0	1	0
1	0	0
1	1	1

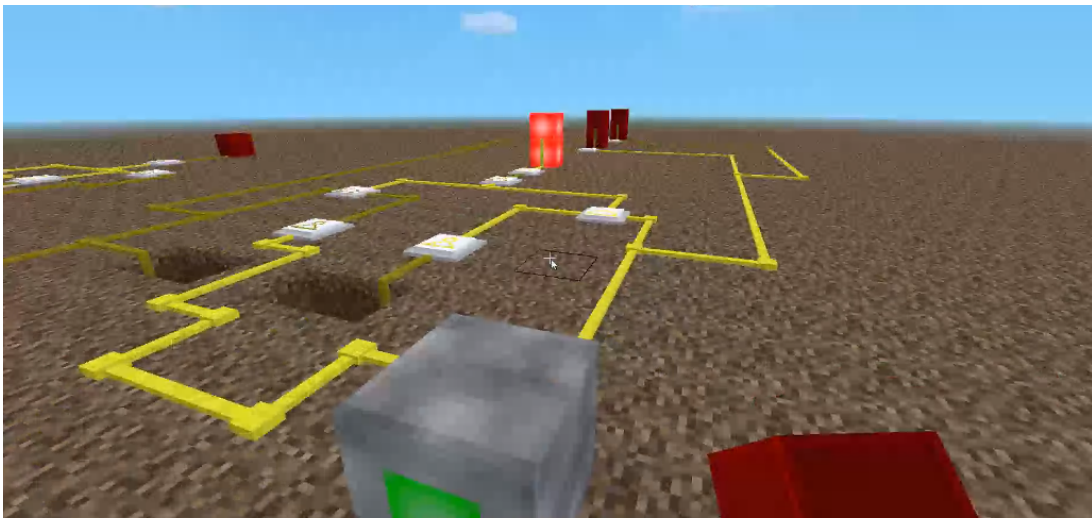
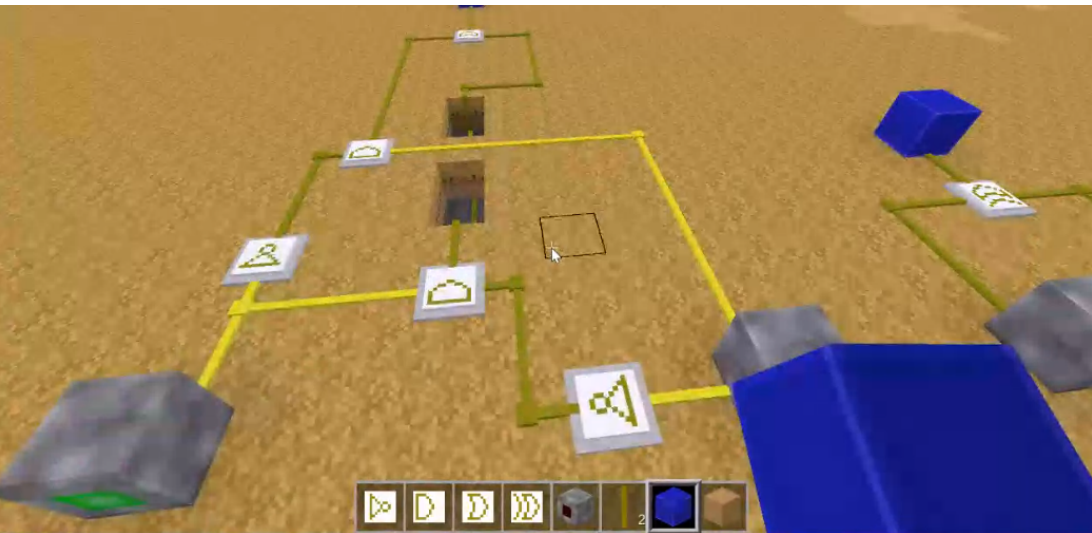
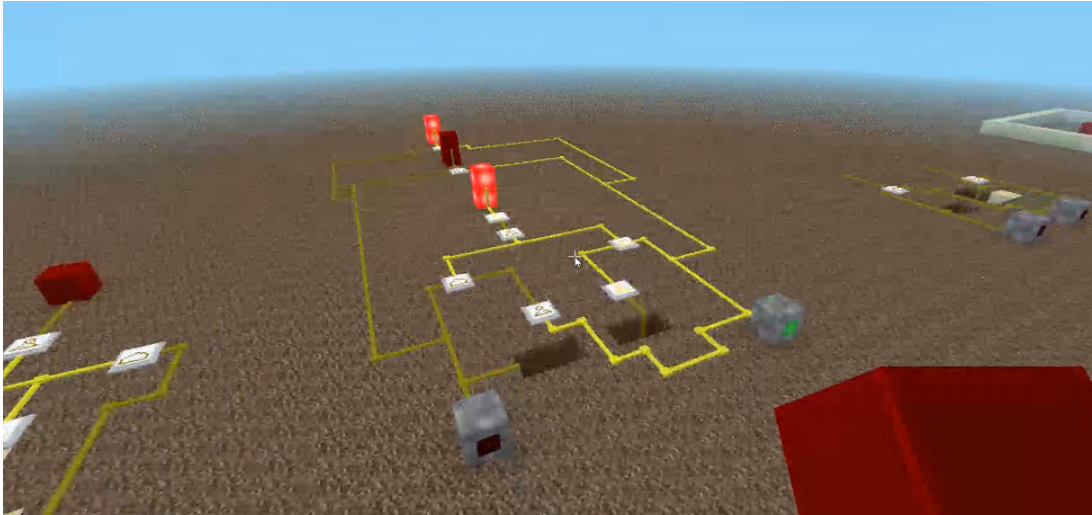


A	B	OUT
0	0	0
0	1	1
1	0	1
1	1	1

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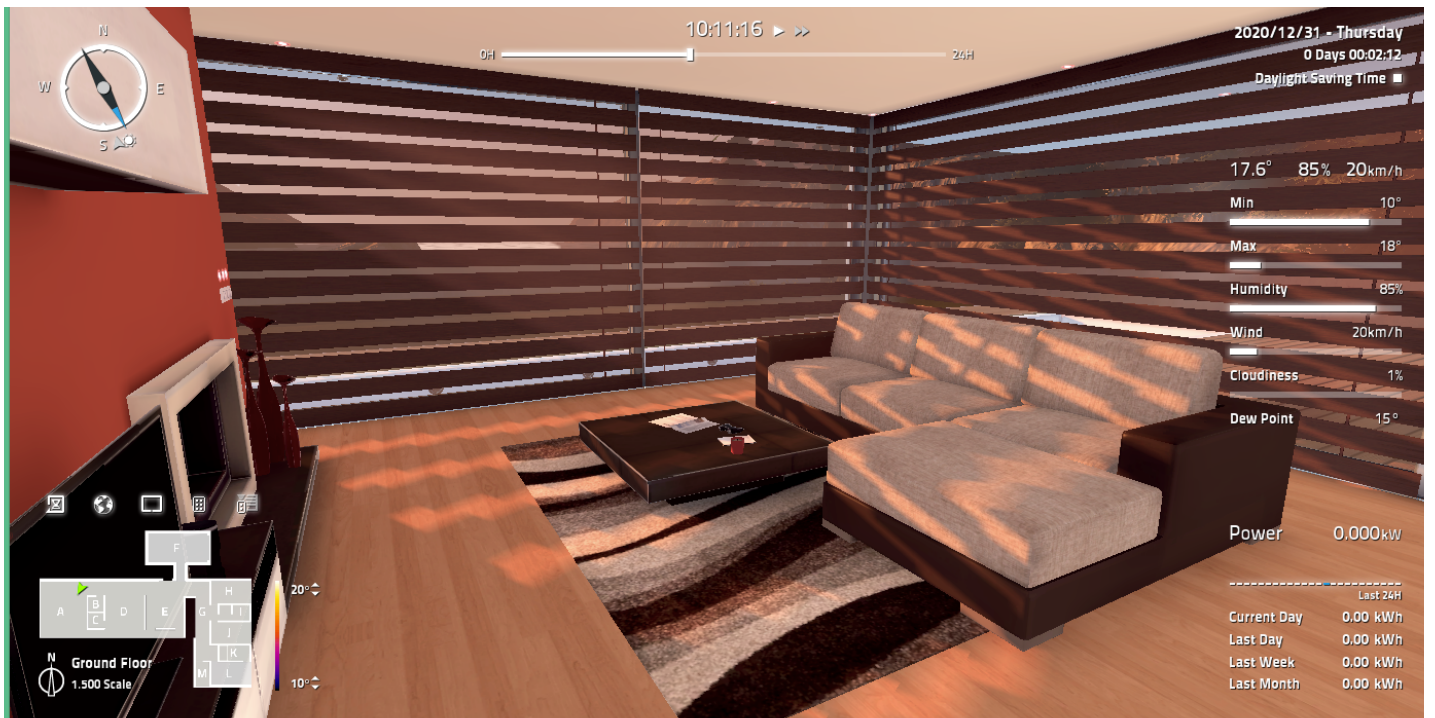
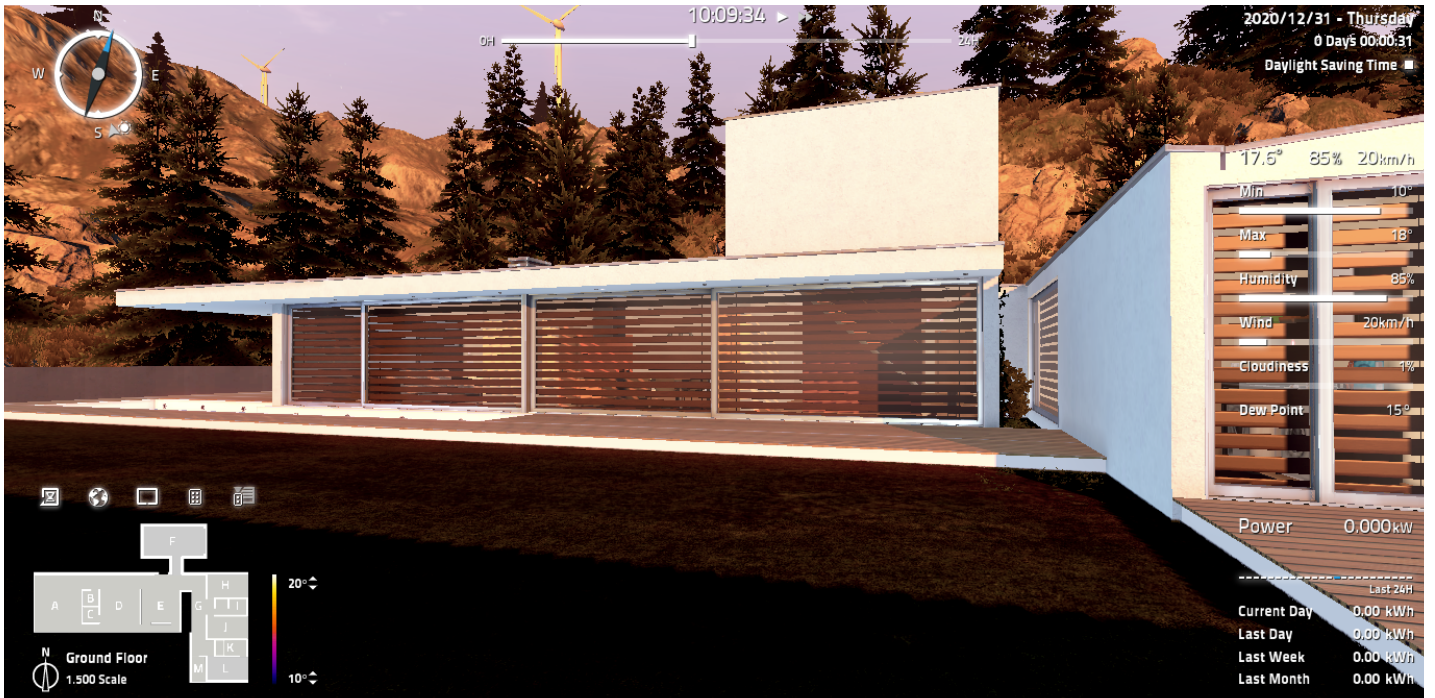


DAY 3

IOT AND SMART HOME

The main goal of this session was to understand and learn about the world of IoT and smart home. We used HomeI/O to interface sensors and actuators using Scratch, Python and the Smart Home Console (Tab)

The screenshot shows a presentation slide titled "IoT & Smart Home" by Mohammed Elnaway. The slide features a central graphic of an open cardboard box labeled "AUS" and "CSE". Inside the box, a lightbulb is surrounded by various icons representing different fields: Artificial Intelligence, Programming, Digital Logic, Smart Home & IoT, Computer Networks, Mobile Apps, Games Development, and Machine Learning. To the right of the box, the text reads "IoT & Smart Home" in large blue letters, followed by "YOUR START TO LIVE SMART" and "MOHAMMED ELNAWAWY". The slide is part of a presentation titled "IoT & Smart Home" by "CSE" (Computer Science & Engineering, American University of Sharjah, United Arab Emirates). The presentation is being shared by Mr. Mohammed Elnaway. The slide number is 1 of 51.

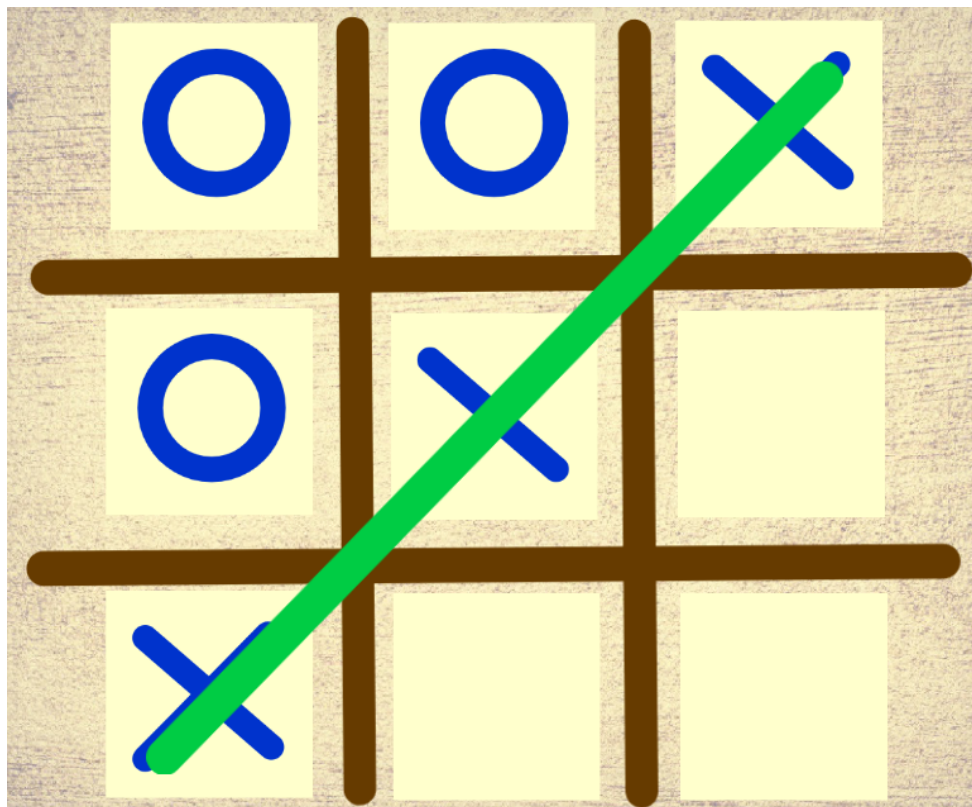


DAY 4

AI AND ML

The main goal of this session was to understand and learn about artificial intelligence and its subset, machine learning and its uses.

We learned to train a computer to always win a tic tac toe game using Scratch



```

when clicked
  switch costume to empty
  go to x: -124 y: 125
  set size to 70 %
  go to back layer

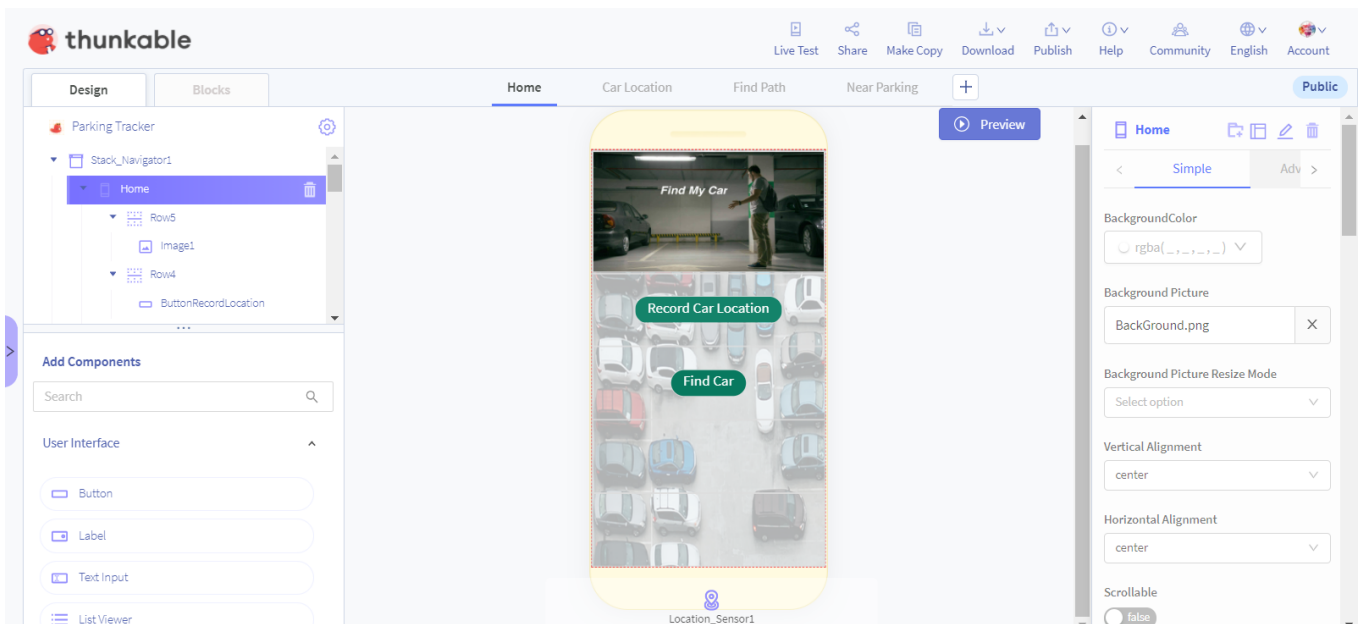
when this sprite clicked
  if result = PLAYING and costume number = EMPTY then
    if turn = CROSS then
      set contents top-left to CROSS
      add top_left to history cross choice
      broadcast new-move

when I receive new-move
  if costume number = EMPTY then
    if turn = CROSS then
      add EMPTY MOVE to history cross top-left
    if turn = NOUGHT then
      add EMPTY MOVE to history nought top-left
  if costume number = NOUGHT then
    if turn = CROSS then
      add OPPONENT MOVE to history cross top-left
    if turn = NOUGHT then
      add PLAYER MOVE to history nought top-left
  if costume number = CROSS then
    if turn = CROSS then
      add PLAYER MOVE to history cross top-left
    if turn = NOUGHT then
      add OPPONENT MOVE to history nought top-left
  if costume number = EMPTY then
    if contents top-left = NOUGHT then
      switch costume to nought
      broadcast new-move-complete
    if contents top-left = CROSS then
      switch costume to cross
      broadcast new-move-complete
  
```

DAY 5 MOBILE APP DEVELOPMENT

The main goal of this session was to understand and learn about mobile app development and its components: design and code.

Using thinkable, we made an app to track your car parking spot and to find the path from your current location to it.



```

when Map1 onMapReady
do
  from Map1 set Latitude to stored variable "lati"
  from Map1 set Longitude to stored variable "longi"
  in Map1 call addMarker
    latitude stored variable "lati"
    longitude stored variable "longi"
    title "Car"
    description "You parked here"
  in Location_Sensor1 call GetCurrentLocation
    with outputs
      error
      latitude
      longitude
      location
  then do
    in Map1 call addMarker
      latitude stored variable "lati"
      longitude stored variable "longi"
      title "You"
      description "Your location"

```

```

when ButtonFindPath Click
do
  navigate to Find Path

when Car Location Opens
do
  from LabelCL_Long set Text to stored variable "longi"
  from LabelCL_Lat set Text to stored variable "lati"

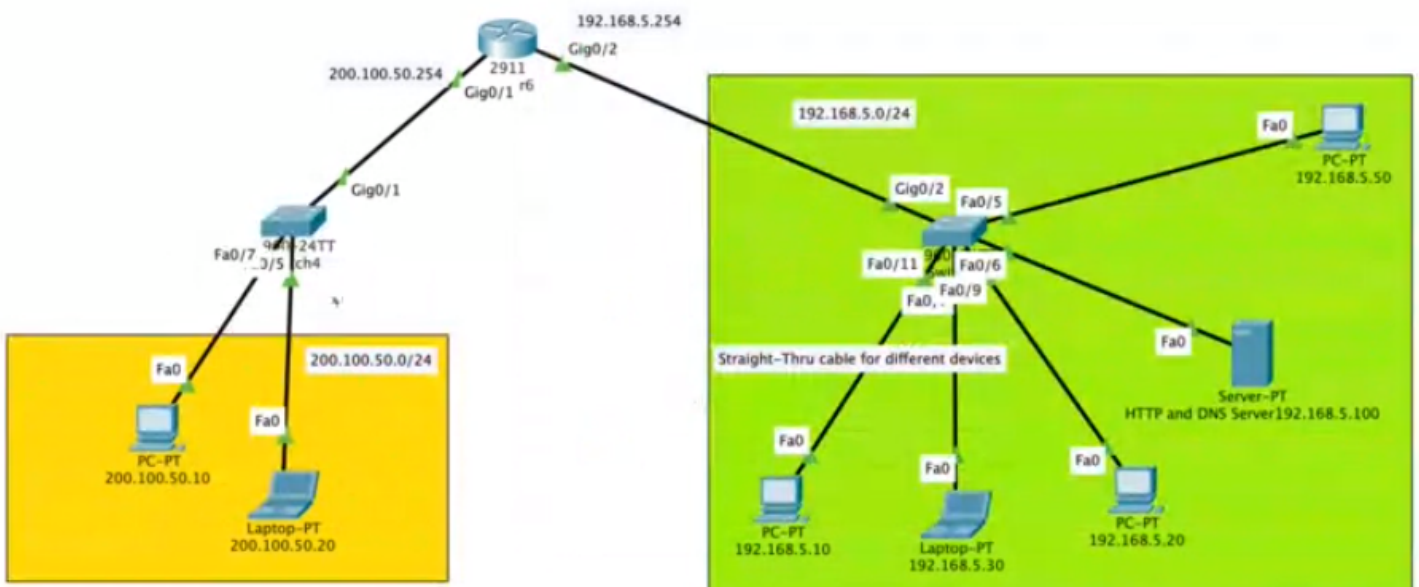
when Map1 onLongPress
  latitude
  longitude
  position X
  position Y
do
  in Map1 call addMarker
    latitude latitude
    longitude longitude
    title "You"
    description "Your location"
  set stored variable "longi" to longitude
  set stored variable "lati" to latitude

```

DAY 6

BUILDING A COMPUTER NETWORK

The main goal of this session was to thoroughly learn about the networks. Topics covered were: Binary numbers, Octal numbers and Hexa numbers, IP addresses. We learnt more through cisco packet tracer.




```
ort("The n  
require 'spec_helper'  
require 'rspec/rails'
```

```
require 'capybara/rspec'  
require 'capybara/rails'
```

```
Capbara.javascript_driver = :webkit  
Category.delete_all; Category.create  
Shoulda::Matchers.configure do |config|  
  config.integrate do |with|  
    with.test_framework :rspec  
    with.library :rails  
  end  
end
```

```
19  
20 # Add additional requires below this line. Requires should not be  
21  
22 # Requires supporting ruby files with relative require statements  
23 # spec/support/ and its subdirectories. Files starting with "rspec"  
24 # run as spec files by default. This will require the file to be  
25 # in _spec.rb will both be required and run as a spec file.  
26 # run twice. It is recommended that you do not require files  
27 # end with _spec.rb. You can configure this behavior using  
28 # option on the command line or in your spec_helper.rb.
```

```
29  
30 No results found for 'mongoid'
```

```
mongoid  
+ buffer
```