

EXPERIMENT 3

Explain PlugXR platform.

PlugXR is a cloud-based AR SaaS platform that provides an end-to-end solution for clients while saving nearly 70 per cent of cost and time. The company has a vast and diverse experience in every vertical of XR creation that has been the backbone in supervising all the projects and finishing it at a faster pace.

There are many businesses which wanted to incorporate AR into their products to boost sales and enhance consumer engagement. The thing that was pulling them back is the high cost, time and dependency that was involved in it. PlugXR creator platform helps to create immersive and advanced AR experiences and apps with easy drag and drop options without any coding skills.

Now businesses can opt for PlugXR without worrying about the time and cost of development. It eliminates the hassle of separate development processes for Android and iOS and provides cross-platform development support. There is easy migration between SDKs that will avoid any loss of progress. It provides advanced analytics that will help to have proper understanding with advanced animations, events, and assets which is very beneficial for the clients.

All the above features have benefited the clients by allowing them to develop an AR app with 10x speed compared to other providers in the market.

PlugXR has taken several initiatives and projects for universities, schools, tourism, government, and elections. It has developed an AR educational kit for students that produced information on the object seen from the camera.

PlugXR's Compatibility:

The platform supports all dimensions & verticals of AR tracking to give users an end-to-end AR experience by providing a complete solution.

- Image Tracking
- Ground Tracking
- Location Tracking
- Face Tracking
- Object Tracking

PlugXR's Use Cases:

The applications of AR are endless and PlugXR's market-leading features can contribute significantly to all verticals of major industries.

- Automobiles
- Retail
- Food & Beverage
- Education
- Fashion
- Tour & Travels
- Healthcare
- Entertainment
- Museum

PlugXR is bundled with many features that no one else in the market is providing. PlugXR will help you to save 70 to 90% of the time and also the cost will also be reduced. There is no software dependency. To highlight a few features of PlugXR:

The PlugXR platform currently supports Marker-Based Augmented Reality also called as Image Tracking, Marker-less Augmented Reality also known as Surface/Ground Tracking and WebAR features."

Since creating AR experiences on PlugXR is time and cost effective, small scale businesses can also easily afford to create an immersive AR experience to boost their business. Having said that, PlugXR can be the go-to option for multi-million-dollar companies looking for an AR solution for their business as well.

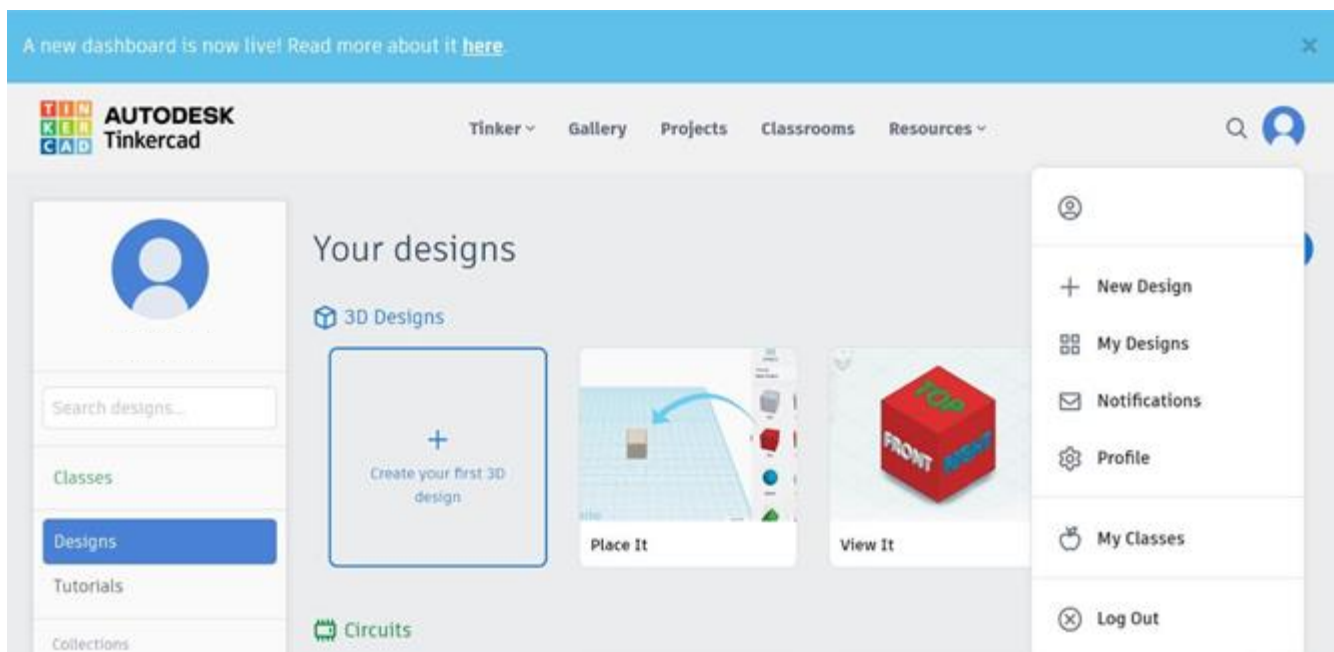
Augmented Reality has a wide range of applications in Education, Real estate, Healthcare, Retail, Manufacturing, Navigation, Automobile, Fitness, Entertainment & Infotainment etc.

EXPERIMENT 4

Explain Tinkercad platform.

Tinkercad is an online collection of software tools from Autodesk that enable complete beginners to create 3D models. This CAD software is based on constructive solid geometry (CSG), which allows users to create complex models by combining simpler objects together.

As a result, this 3D modeling software is user-friendly and currently enjoyed by many, particularly teachers, kids, hobbyists, and designers. Best of all, it's free and you only need an internet connection to answer it. The software allows users to create models that are compatible with 3D printing, a great option for beginners to the technology.



Tinkercad is a good alternative to other 3D modeling software such as SketchUp or Fusion360—another solution from Autodesk—if you do not need the more advanced features of these solutions. Actually, Autodesk acquired Tinkercad in 2013, two years after it was launched by former Google engineer Kai Backman and his cofounder Mikko Mononen. The software's main advantage over the other two software is that it is free, while still offering more modeling freedom than what first meets the eye! It is currently available in 16 languages.

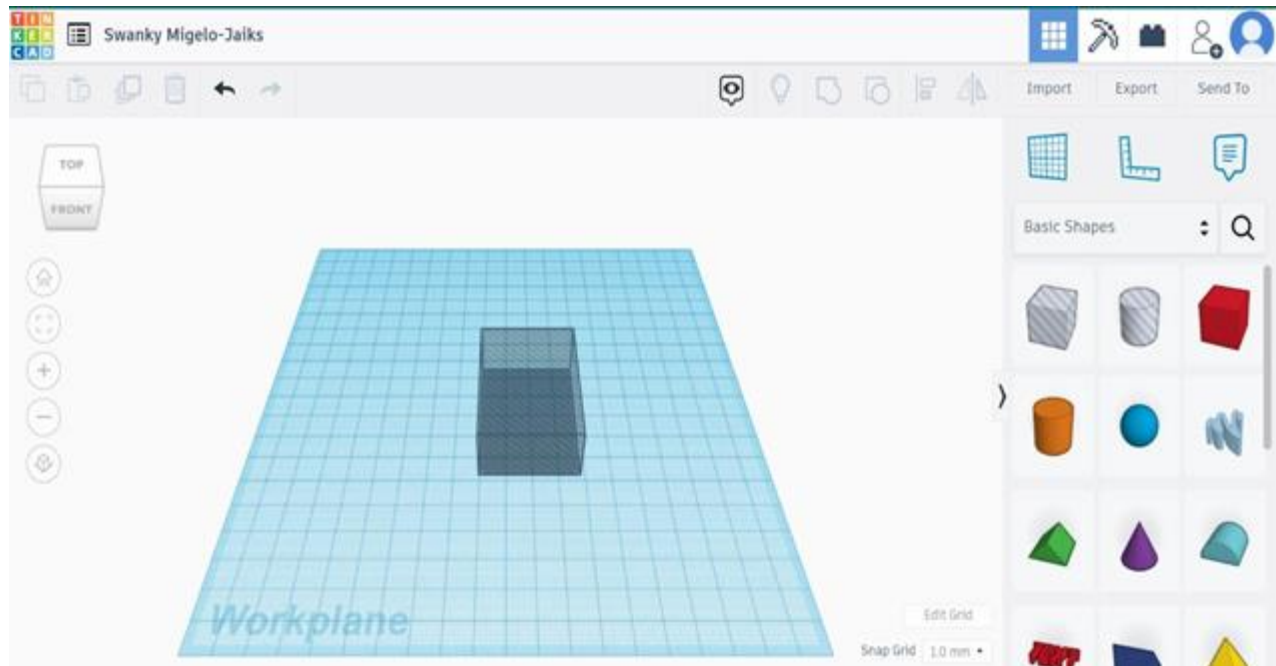
Main Features of Tinkercad are:

Even though Tinkercad is perfect for beginners, it does not mean that those who are more experienced with 3D modeling will not also enjoy this software. Given that it is based on CSG to create solid models, you can always make your model more complex by adding more shapes.

In more concrete terms, all you have to do is select one of the available shapes, add or remove material and voila you're done! For example, you could start with a cylinder before adding triangles, circles, cones, etc. The shape can then be moved and rotated, allowing users to see it from all angle.

Additionally, the software allows you to add electronic circuits to 3D models in order to create objects with light and movement.

The end result can even be simulated on the software to check how the components will respond in real life. Another feature of Tinkercad is its ability to transform a 3D design into buildable brick models, similar to creating logos. Finally, for those that love Minecraft, you will be well served, as you will be able to make creations compatible with the application.



EXPERIMENT 5

Build circuit for measuring Temperature.

```
int baselineTemp = 0;
int celsius = 0;
int fahrenheit = 0;

void setup()
{
  pinMode(A0, INPUT);
  Serial.begin(9600);
  pinMode(2, OUTPUT);
  pinMode(3, OUTPUT);
  pinMode(4, OUTPUT);
}

void loop()
{
  baselineTemp = 40;
  celsius = map(((analogRead(A0) - 20) * 3.04), 0, 1023, -40, 125);
  fahrenheit = ((celsius * 9) / 5 + 32);
  Serial.print(celsius);
  Serial.print(" C, ");
  Serial.print(fahrenheit);
  Serial.println(" F");

  if (celsius < baselineTemp) {
    digitalWrite(2, LOW);
    digitalWrite(3, LOW);
    digitalWrite(4, LOW);
  }

  if (celsius >= baselineTemp && celsius < baselineTemp + 10) {
    digitalWrite(2, HIGH);
    digitalWrite(3, LOW);
    digitalWrite(4, LOW);
  }

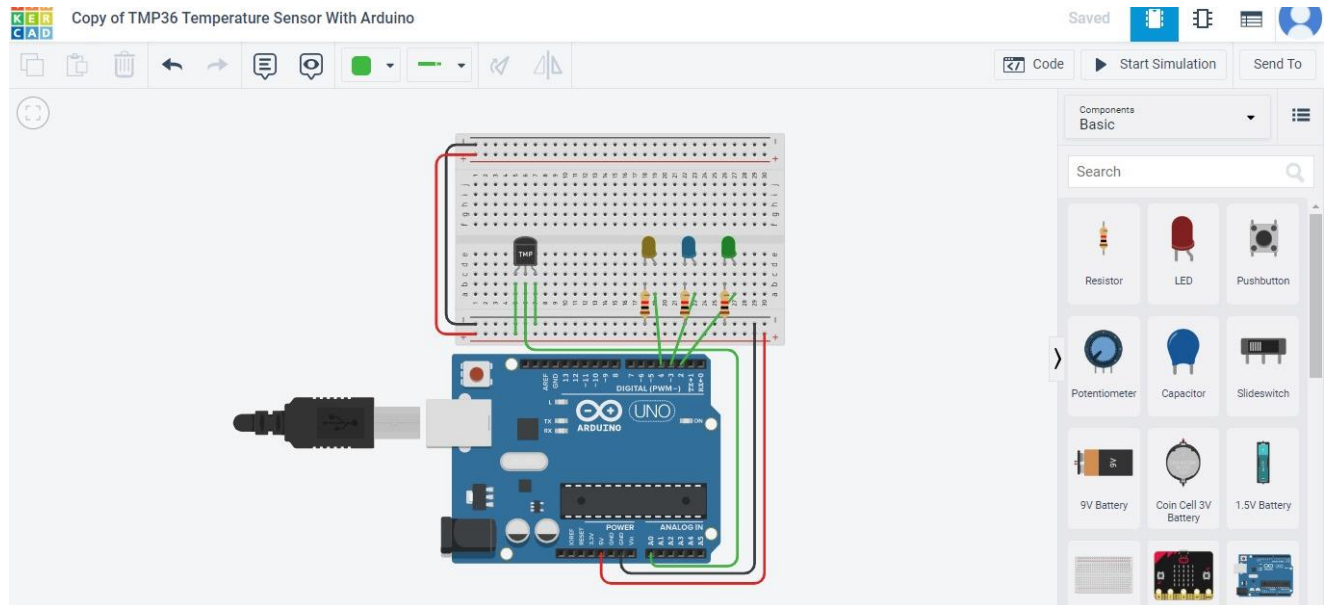
  if (celsius >= baselineTemp + 10 && celsius < baselineTemp + 20) {
    digitalWrite(2, HIGH);
    digitalWrite(3, HIGH);
    digitalWrite(4, LOW);
  }

  if (celsius >= baselineTemp + 20 && celsius < baselineTemp + 30) {
    digitalWrite(2, HIGH);
    digitalWrite(3, HIGH);
  }
}
```

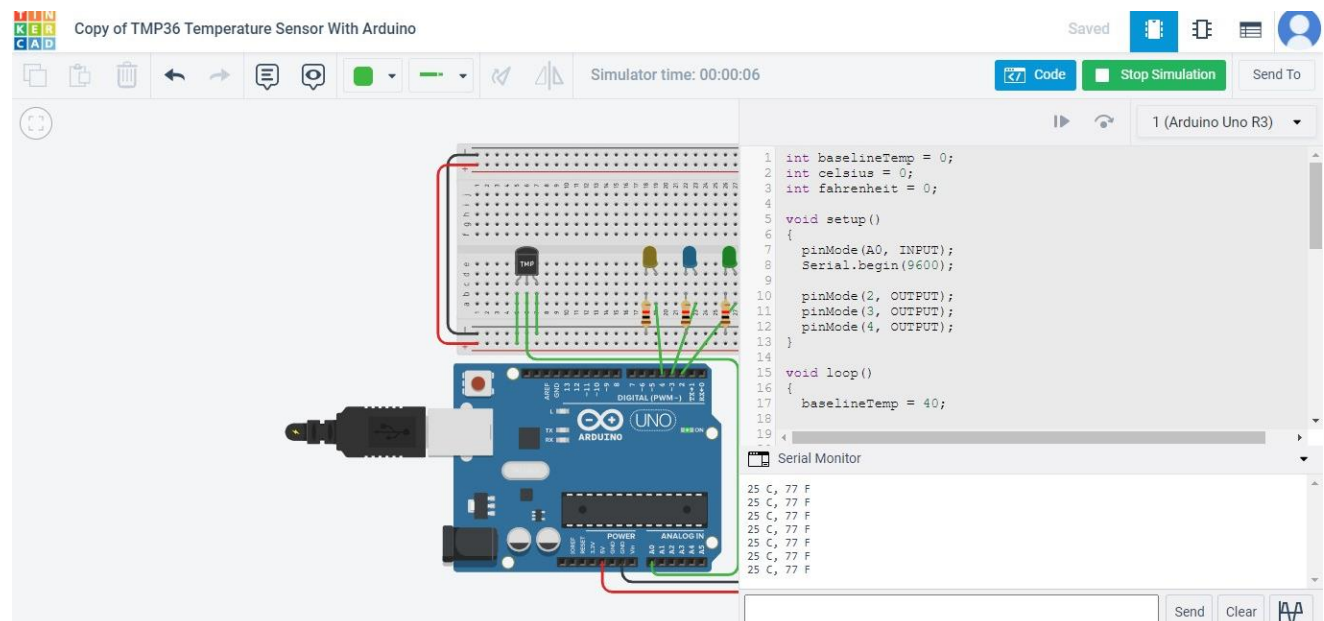
```

digitalWrite(4, HIGH);
}
if (celsius >= baselineTemp + 30) {
    digitalWrite(2, HIGH);
    digitalWrite(3, HIGH);
    digitalWrite(4, HIGH);
}
delay(1000);
}

```

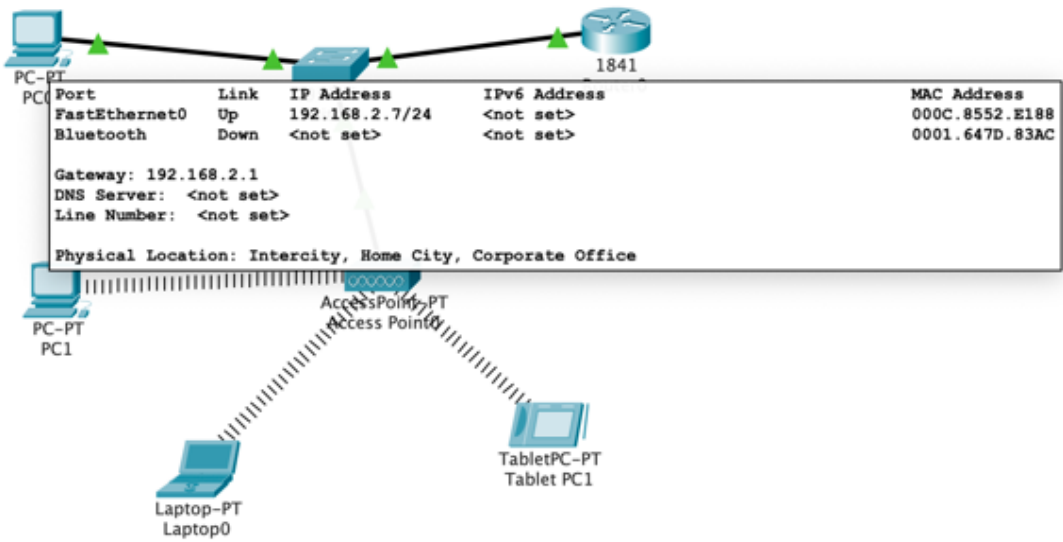
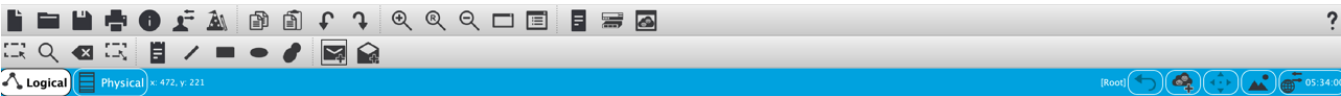


Output:



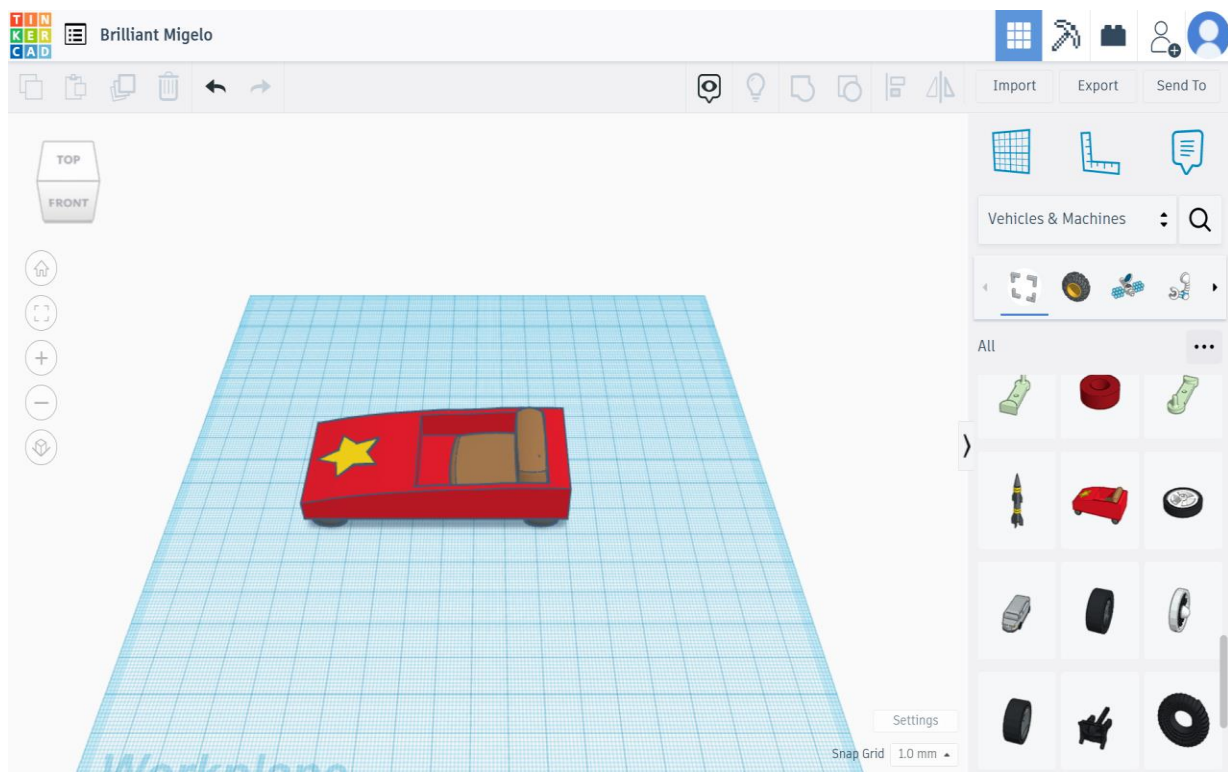
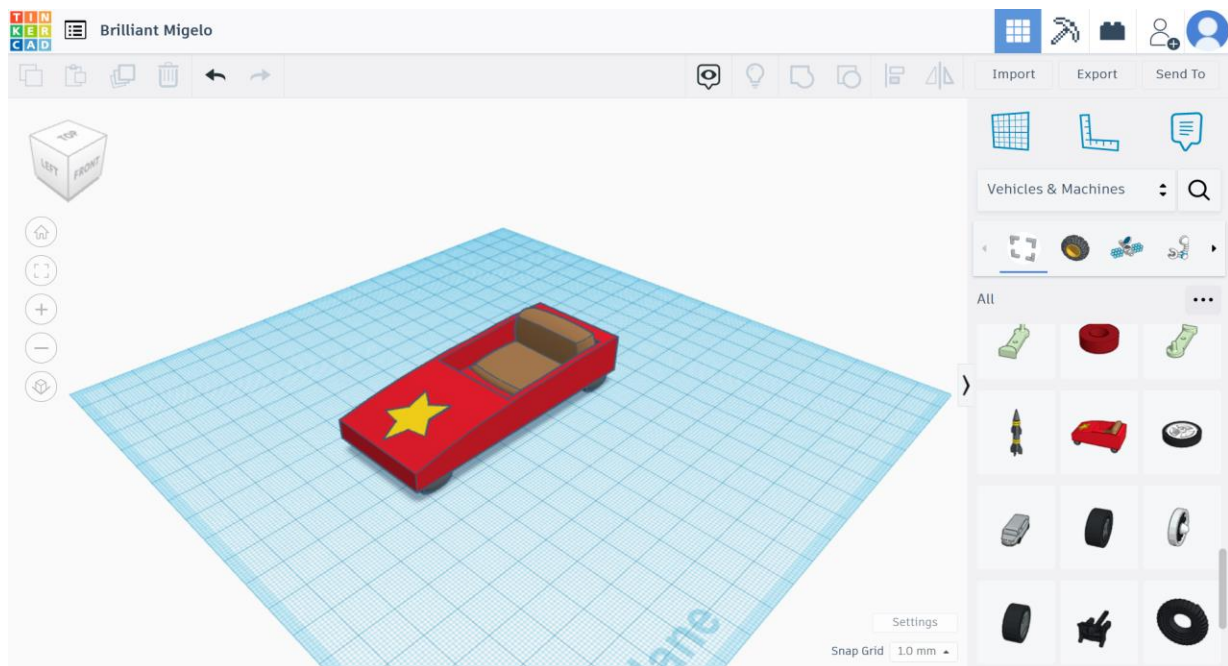
EXPERIMENT 6

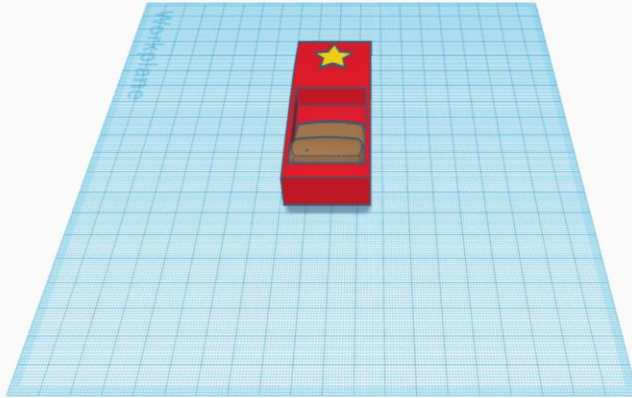
Developing computer network Tree topology:



EXPERIMENT 7

Developing car using Virtual Reality:





Vehicles & Machines



All

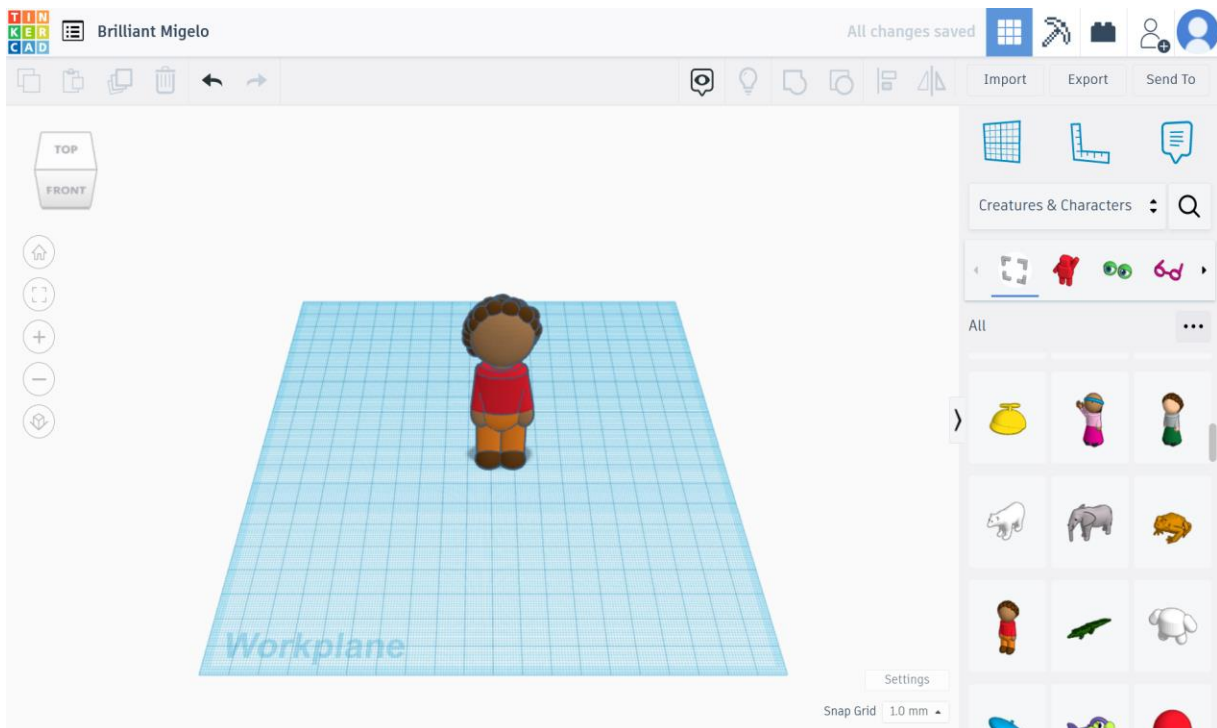
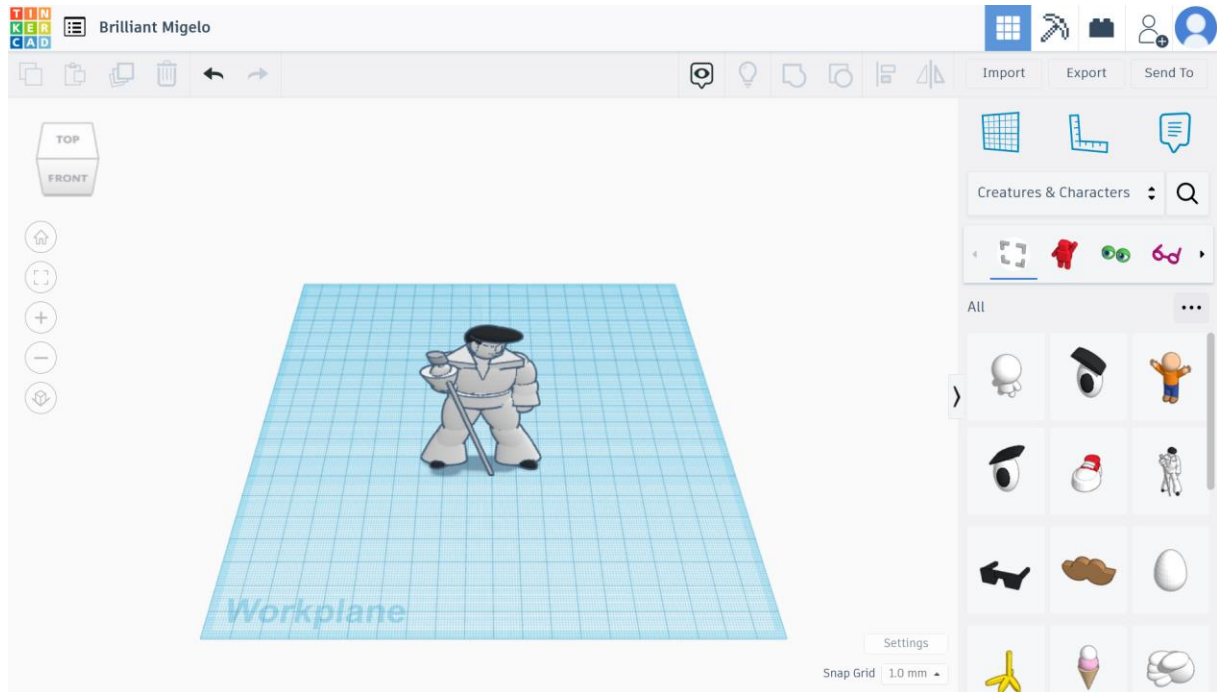


Settings

Snap Grid 1.0 mm

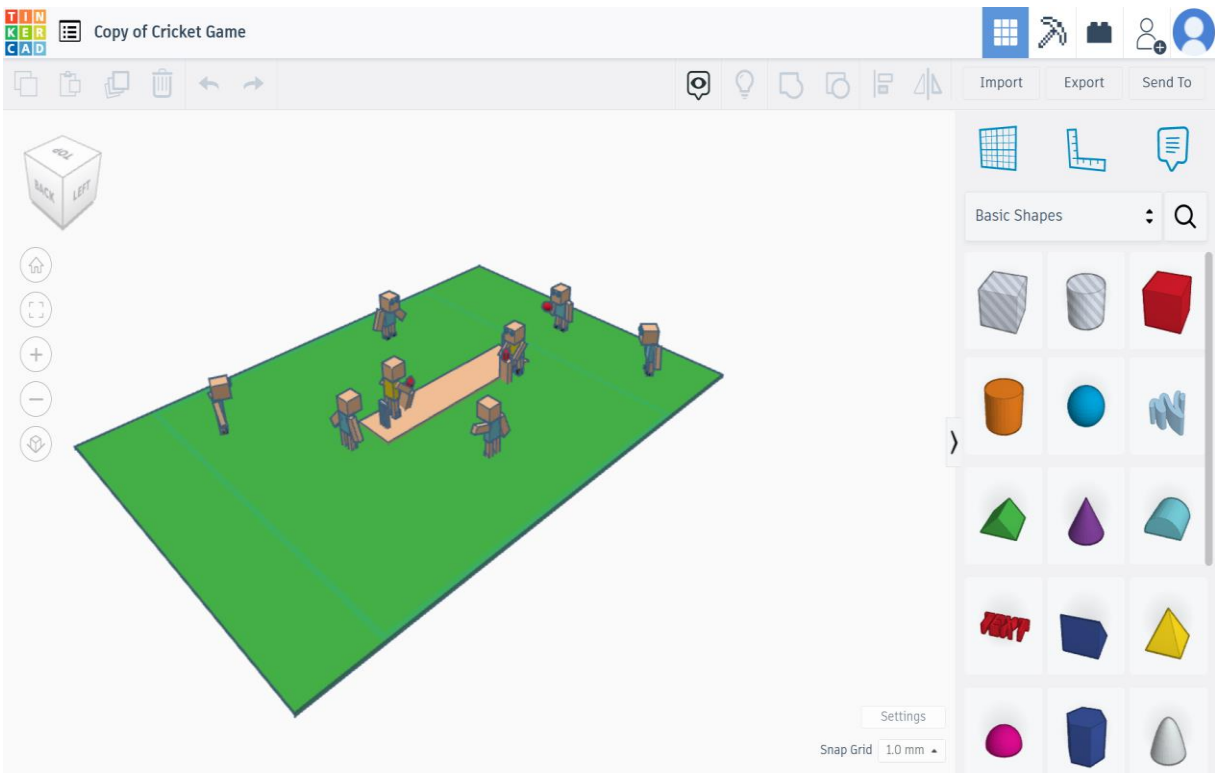
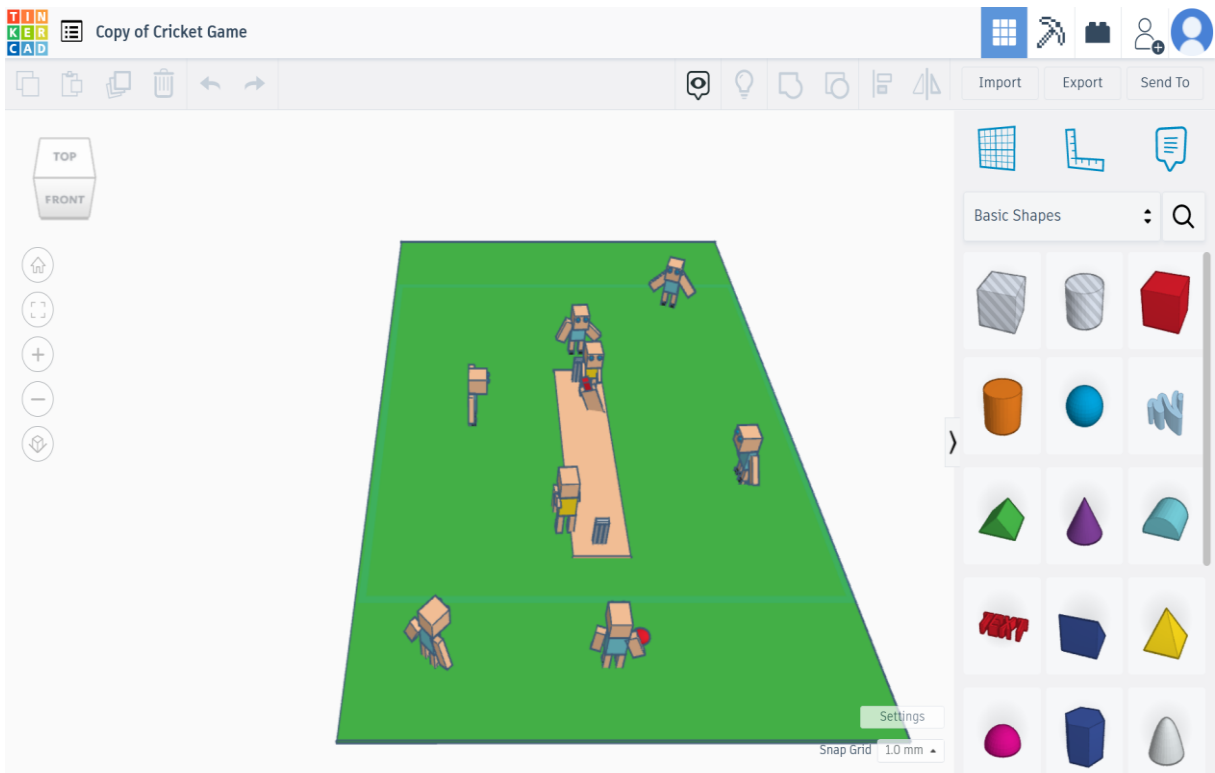
EXPERIMENT 8

Developing characters using Virtual Reality:



EXPERIMENT 9

Developing sports area using Virtual Reality:



EXPERIMENT 10

Developing human anatomy of parts like Heart, Lung using Virtual Reality:

