



**Universal College of Engineering, Kaman**  
**Department of Computer Engineering**  
**Subject: Mobile Computing**

**Experiment No: 3**

**Aim:** Develop a native application that uses GPS location information.

**Theory:**

A global positioning system (GPS) is a network of satellites and receiving devices used to determine the location of something on Earth. Some GPS receivers are so accurate they can establish their location within 1 centimeter.

GPS includes 24 satellites that circle Earth in precise orbits. Each satellite makes a full orbit of Earth every 12 hours. These satellites are constantly sending out radio signals.

GPS receivers are programmed to receive information about where each satellite is at any given moment. A GPS receiver determines its own location by measuring the time it takes for a signal to arrive at its location from at least four satellites. Because radio waves travel at a constant speed, the receiver can use the time measurements to calculate its distance from each satellite.



Using multiple satellites makes the GPS data more accurate. If a GPS receiver calculates its distance from only one satellite, it could be that exact distance from the satellite in any direction. Think of the satellite as a flashlight.

When you shine it on the ground, you get a circle of light. With one satellite, the GPS receiver could be anywhere in that circle of light. With two more satellites, there are two more circles. These three circles intersect, or cross, in only one place. That is the location of the GPS receiver.



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This method of determining location is called trilateration.

Aircraft, ships, submarines, trains, and the space shuttle all use GPS to navigate. Many people use receivers when driving cars. The GPS receiver plots the car & 39;s constantly-changing location on an electronic map. The map provides directions to the person & 39;s destination. Both the location and the vehicle are plotted using satellite data. Some hikers use GPS to help them find their way, especially when they are not on marked trails.

**Github Link :**

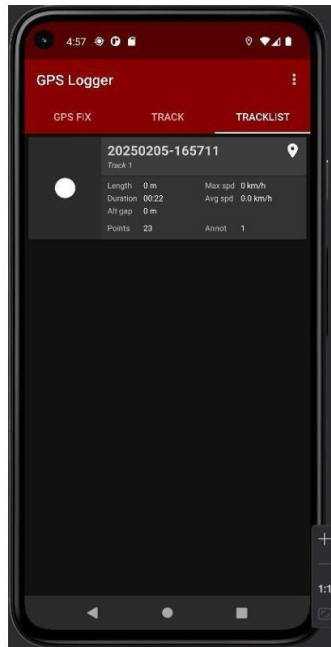
<https://github.com/sachinskill/MC-EXPERIMENTS/tree/main/EXP-3%20GPS>

**Screenshots of the Output:**





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**Conclusion:** Hence, we successfully implemented GPS with the help of JAVA platform and created an application which coordinates with GPS as location manager.



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