Bharatiya Vidya Bhavan's
SARDAR PATEL INSTITUTE OF TECHNOLOGY
An Autonomous Institute Affiliated To University Of Mumbai
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Course - Consumer Electronics (CE)

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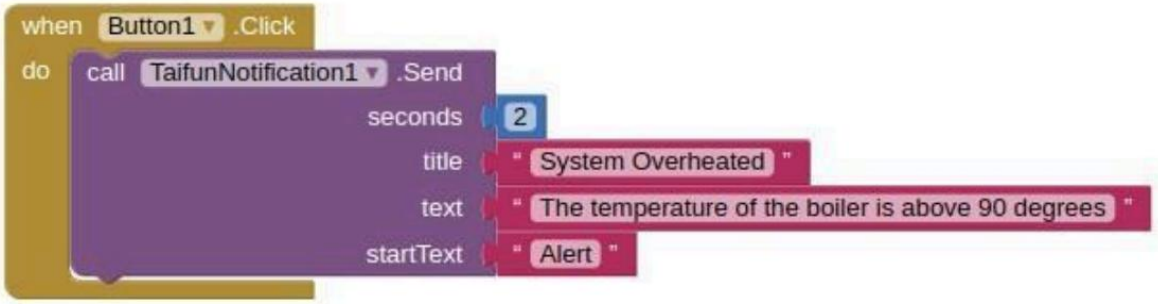
Batch	Batch C
Date	12/09/2024
Experiment No.	5
Aim	To understand cloud processing: To write data using MATLAB on thingspeak and visualize real time data also how to extract information in data.
Theory	**1. Cloud Processing:** a. Definition: Cloud processing refers to the use of remote servers (cloud) to store, manage, and process data. It allows users to access computing resources and services over the internet, eliminating the need for local infrastructure. b. b. Benefits: Cloud processing offers scalability, flexibility, cost-effectiveness, and accessibility from anywhere with an internet connection. It can handle large volumes of data and provides services like storage, computation, and data analytics. **2. Writing Data using MATLAB on ThingSpeak:** a. ThingSpeak: ThingSpeak is an IoT platform that allows users to collect, analyze, and visualize data from IoT devices. b. Writing Data: In MATLAB, you can use the ThingSpeak API to write data to your ThingSpeak channel. This involves specifying the channel ID and Write API Key, along with the data you want to write. Writing data to ThingSpeak enables you to store and organize data for analysis and visualization. **3. Visualizing Real-Time Data:** a. Real-Time Data: Real-time data refers to data that is generated continuously and needs to be processed and visualized without delay. b. Visualization: MATLAB provides powerful visualization tools to plot real-time data. You can use functions like plot, scatter, or bar to create visual representations of your data. Visualizing real-time data helps in monitoring trends, patterns, and anomalies in the data as it is being generated. **4. Extracting Information from Data:** a. Data Analysis: Data analysis involves extracting meaningful insights and information from raw data. b. Techniques: In MATLAB, you can perform various data analysis techniques such as statistical analysis (mean, median, standard deviation), data filtering, smoothing,interpolation, and advanced analytics using machine learning algorithms. c. Purpose: Extracting information from data helps in understanding trends, making predictions, identifying correlations, and making data-driven decisions.

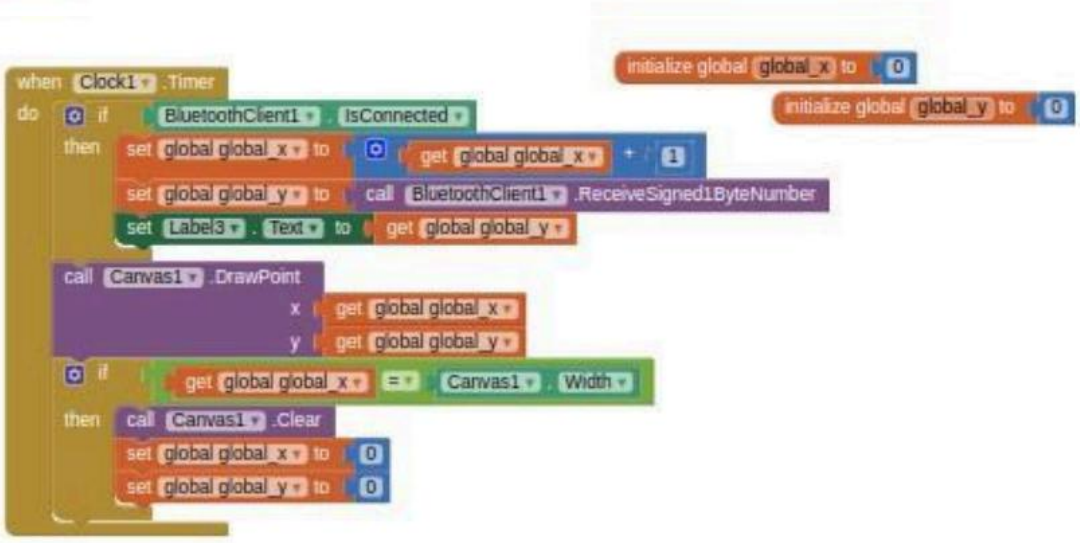
Output

Conditions applied at backend :

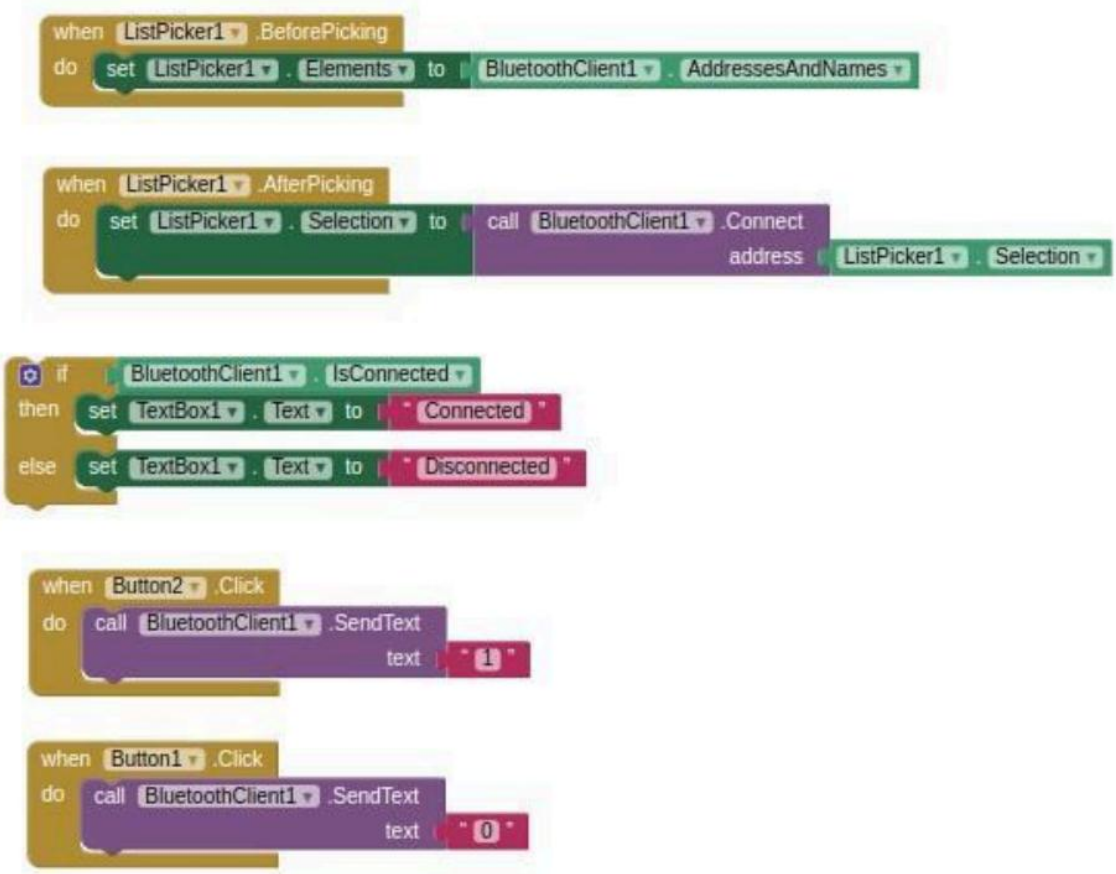
1) The function behind input bar that takes text as input



2)The function where mathematical is logic applied:



3) Function that takes into consideration procedures of the application:



Finally presented interface with the above functionality :
1)Add button

2)Add input bar

3)Add picture of the selected image

	
Conclusion	Thus the experiment helped to learn about MIT App Inventor which helped to design apps without need for explicit coding, and using user friendly interface.