

Expt. No. 6

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Expt. Name. Basic Calculator Design In Labview.

Date : _____

AIM:- To Create a Calculator Design Using Labview Controls

CONTROLS NEEDED:-

- 1) Numeric Controller
- 2) Numeric Indicator
- 3) Adder Circuit
- 4) Subtract Circuit
- 5) Multiplier Circuit
- 6) Divider Circuit

Numeric Controllers:-

This Controller is Used to give Input

Numeric Indicators:-

This indicator Used to produce Output

Adder Circuit:-

It is used to add two Numbers

Subtractor Circuit:-

It is used to subtract two Numbers

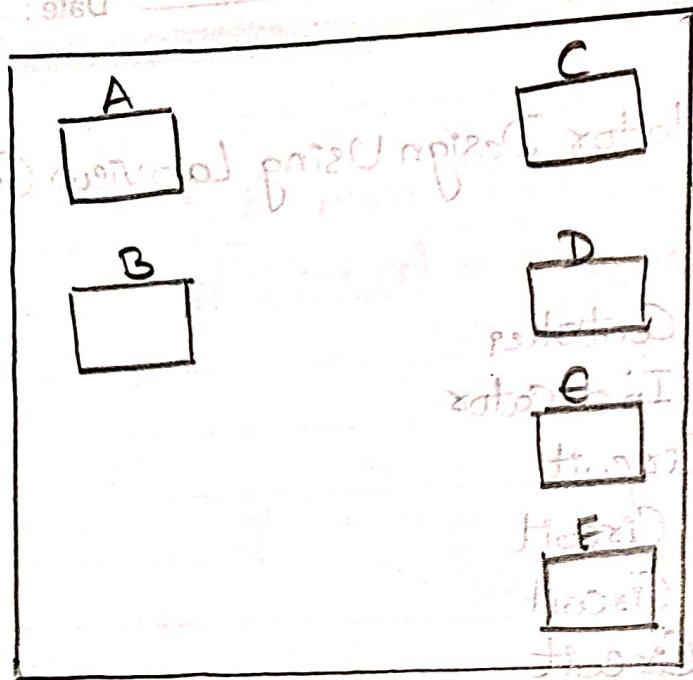
MULTIPLIER Circuit:-

It is used to multiply two Numbers

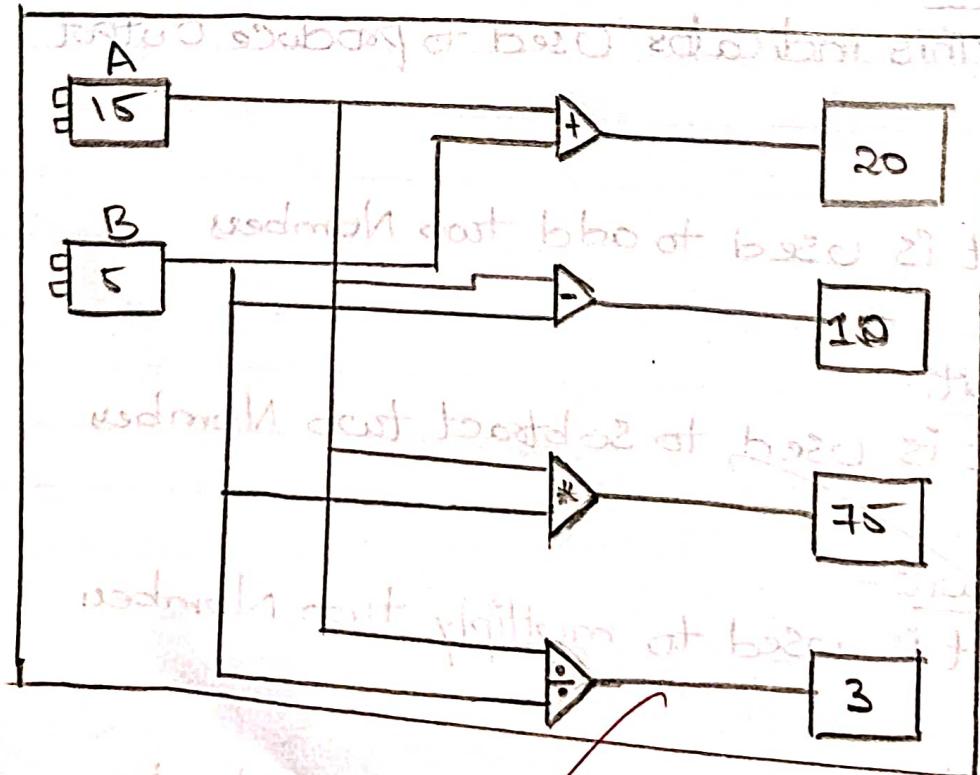
divider Circuit:-

It is used to divide two Numbers

FRONT PANEL DIAGRAM



BLOCK DIAGRAM



Procedure:-

- (i) Labview has two Panel, one for User Interface and another for designing the Circuit based on the given problem.
- (ii) In front panel, we Create a Input Control and Output indicator using Classic Controls
- (iii) In Block diagram, from programming function choose adder, multiplier, divider, Subtractor respectively
- (iv) Make a Connection in Circuit with all Numeric Indicator
- (v) Run the project, Output will display in Numeric Indicator

~~Result :-~~
~~as~~ ~~11~~

The program of Labview Calculator has been Executed
Successfully.

AIM:-

To study the MQTT protocol and examines the Components of MQTT protocol.

Introduction:-

MQTT stands for Message Queuing Transport. It is an extremely light weight and publish subscribe messaging transport protocol. The protocol is useful for the Connection with the remote location where the bandwidth is premium. It is a publish and subscribe system we can publish and receive the messages as a client. It makes it easy for Communication between multiple devices.

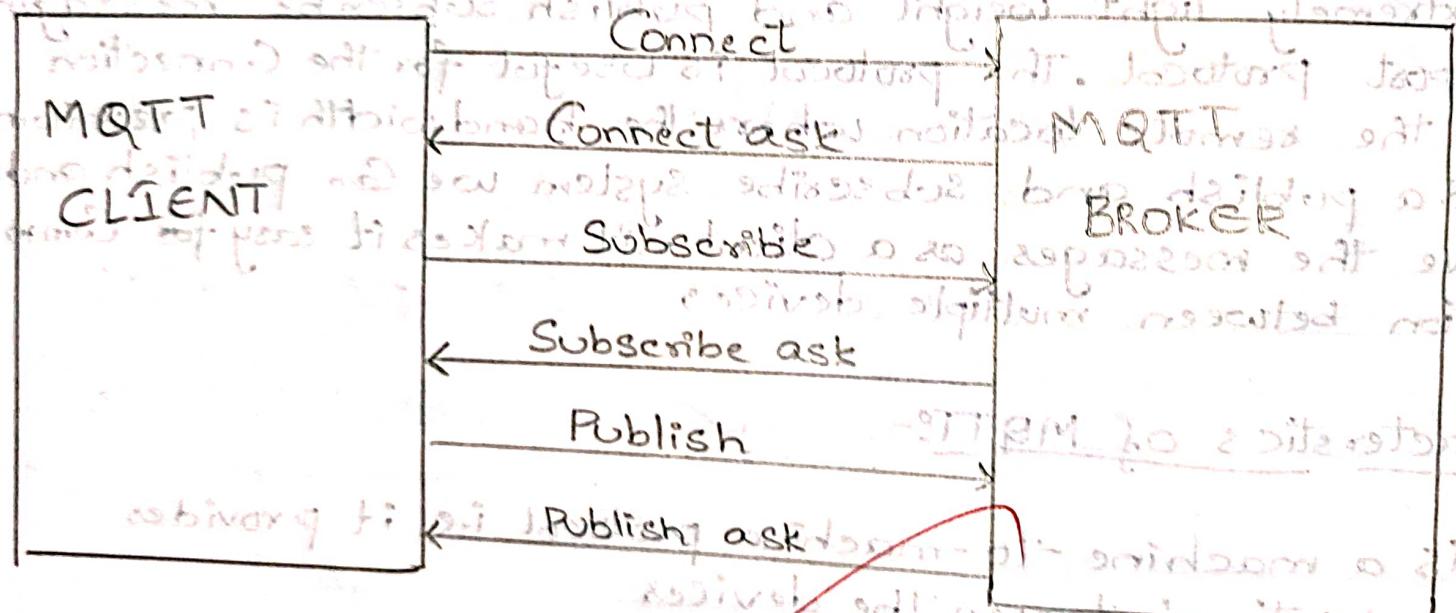
Characteristics of MQTT:-

- It is a machine-to-machine protocol i.e, it provides communication between the devices
- It does not require that both the Client and the Server establish a Connection at the Same time
- It provides faster data transmission, like how whatapp/messenger provides a faster delivery.
- It allows the clients to subscribe the narrow selection of topics so that they can receive the info they are looking for.
- Its a real-time messaging protocol

TOPIC



MQTT Message Format:-



Components of MQTT

- Message
- Client
- Server or Broker
- Topic.

• Message:-

The message is the data that is carried out by the protocol across the networks for the application. The message contains some protocols.

- Payload data
- Quality of Service
- Collection of properties
- Topic Name

• Client:-

In MQTT, the subscriber and publisher are the two roles of a client. The client subscribes to the topics and receives messages.

• Publish:-

When the client sends the data to the server, then we call this operation as a publish.

• Subscribe:-

When the client receives the data from the server, then we call this operation a subscription.

MQTT Packet Structure:-

Fixed Header, Present in all MQTT packet

2 BYTES

Variable Header, Present in Some MQTT packet

Size depend on message type

Payload, Present in Some MQTT Packet

This Contain data being sent

Server:-

The device or a program that allows the client to publish the message and subscribe to the message. A Server accepts the network Connection from the client, accept the messages from the client, process the subscribe and un-subscribe requests, forward the application messages to the Client and closes the network Connection from the client.

TOPIC:-

The label provided to the message is checked against the subscription known by the server is known as topic

Result:-

Thus MQTT protocol and its Components are studied and examined.

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Expt. Name. Weather Station Using LabView.

Date : 1/8/22

AIM:- To Create a Weather station using Labview.

Controls Needed:-

- 1) Numeric Controller
- 2) Visible Arod.
- 3) Vertical fill slide
- 4) Get the Comparison
- 5) Stop Buttons.

Software Requirements:-

→ Arduino Uno IDE

→ Labview with arduino Interface

Procedure:-

1) Labview has 2 panels:-

→ Front panel

→ Block diagram.

2) Front panel

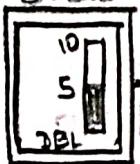
→ Used to Create UI

→ We can drop I/p & O/p Control such as numeric controller and Bookan.

3) Block Diagram

→ Make a Connection b/w slide, numeric to visible slide.

Slide



Boolean

10
5
0

50

3

Numeric



1

0

Boolean



23

24

25

26

27

28

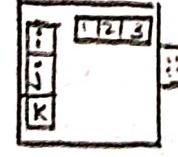
29

30

20

1

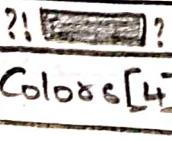
GloRs[4]



2

0

Boolean



1

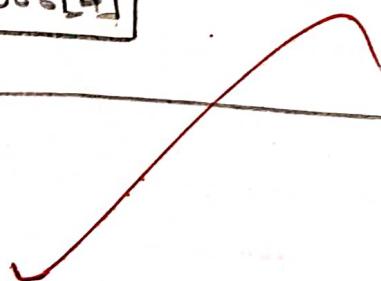
2

3

4

STOP

STOP



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- Make a Circuit by Connecting the Composition Operators
- Run the project in front panel.
- The O/P will be displayed in Visible

Result:-

The program has executed Successfully.

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Sub. Code : SCSA2701

Name of the Staff In-Charge : Ms. Pothumani, Ms. Me. Cnil Jenifer.

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