EXPERIMENT NUMBER: ~
DATE: 26/03/2022, SATURDAY

SERIAL COMMUNICATION PROTOCOLS (VART & SPI) WING ARDVIND ...

Analyze various communication protocols used in the design of portable devices. + CODE: (ARDVIND IDE) (9) serial Transmission using VART-If the settip function runs once when you press neset or power the board:

void settip () Servas. begin (9600); l'Initialize servas communications I The evop function nun over and over again forever: Serial printle ("Hello, World;");

delay (1); It Delay in between reads for stability

Sowal Reception and Thansmission using VARTchar input char * ': NA character variable to hold
incoming data

Andrine UND Grand

Hardware

		Sell	ĺ
Hello, warld			
Hells, world;			
Hells, world			
Hello, Warld;			
Hella, Warli			
Hella, Warld;			
Hella, Warld;			
tello, world;			

output of sexial monitor

components Required: 1 Arduino iNO Board

1 Battery / Pewer Supply Cable B connecting wines

(a) Serial Fransmission using WART

```
I The setup function huns ance when you press neset or power
    the board:
void setup ()
  Serial begin (9600);
                        Il Initialize serval communications
I The loop function nurs over and over again perever:
roid loop ()
       [[ ( Servas. available () ) > (0) ))
     input (har = Serial read ();
    Serial paint ("The neceived character is: ");
     Serial printer (input Char);
Device Control using VART in Anduna -
If the setup function nuns once when you press reset on power
   the board:
void setup 1)
  Serval begin (9600); A Inibalize serval communications
primade (13, OUTPUT); N Initialize digital più B as an output
I the easy function num over and over again forever:
reid loop ()
   if ( ( Serial : available () ) > (0) ))
```

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com 14 Carduina / Genuina	UNO)		
		- V.,	Send
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The necessed character	W. Grann	El Egil	5 3L 3
Autoriale Tolo	line crains	1 19600	band P
		1 /333	110.11

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Components Required O Andrino UNO Beard
O Battery / Former supply Cable
O Connecting Wines

(b) serial Reception and Transmission using UBRT

(%)

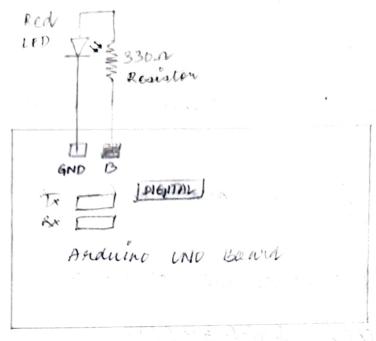
```
char inputchay = Secund . nead ();
   Serial print ("The received character is: ");
Serial printer (input (Kar);
    if (injutchar or "A")
      digital Write (13, HIGH); Il Twin the LED on by making the
     delay (2000);
                                        valtage MIGH
      Il wait for two seconds
     else
       digital Write (13, 10m);
                                  I Turn the LED off by making the
       delay (2000);
                                        weltage 10W
     I wait for two seconds
Device Control with Bluetooth Module using VART-
Il These constants non't change:
const int ledpin 1 = 13; UPin that the UD is attached to
const int ledfin 2 = 2; Il Pin that the LED is attached to
If The setup function num once when you press reset or power
    the beard:
void setup ()
   Serval begin (9600); Il Initialize serval communications pinmade (led Pin 1, 00 TPUT); Il Initialize the LED sin
                                    I Initialize the LED pin I as
```

pinmade (ledPin 2, OUTPUT);

an output

an output

11 Initialize the LED pin 2 as



Hardware

Comparino eno Exacta

D Andrino eno Exacta

O Red LED

3 330 ex Resistar

O Bortiery Trans Engly

O Connecting Indian

(c) Device control using UPRT in Arduno

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```
If The loop function runs over and over again prever:
void loop ()
  if ( ( Serial. available () ) > (0) ))
    char inputchar = Secial read();
     Serval point l" the necessing character is: ");
     Serial println l'inputchar);
     if (inputChar == 'A')
       digital Write (ledPin 1, MIGH); Il Turn the LED on by
                     making the voltage MIGH
        digital White (ledpin 2, LOW); Il Twin the LED off
                      making the voltage tow
       else if (inputchar = > 'B')
        digital write ( ledpin 1, LOW); Il Twen the HD off by
                      making the voltage tow
         dignital write (led Pin 2, MIGH); Then she LED en
                       making the voltage HIGH
```

* INFERENCE :

Thalyze various communication protocols used in the design of portable devices and all simulation results were successfully verified.

(11) Device Control with Benelooth MRANCE using UDRT

Red UD Resistor Resister Digital 1 Andaine UNO Board Bluetonth module

O onduiner vois Grand

O omnje 150

O een 160

@ 330 V Resiston - @

6 Barrery / Pewer supply

1 Corneiting wines