

PROTOTYPE PRELIMINARIES

EWB Isondlo Garden Project

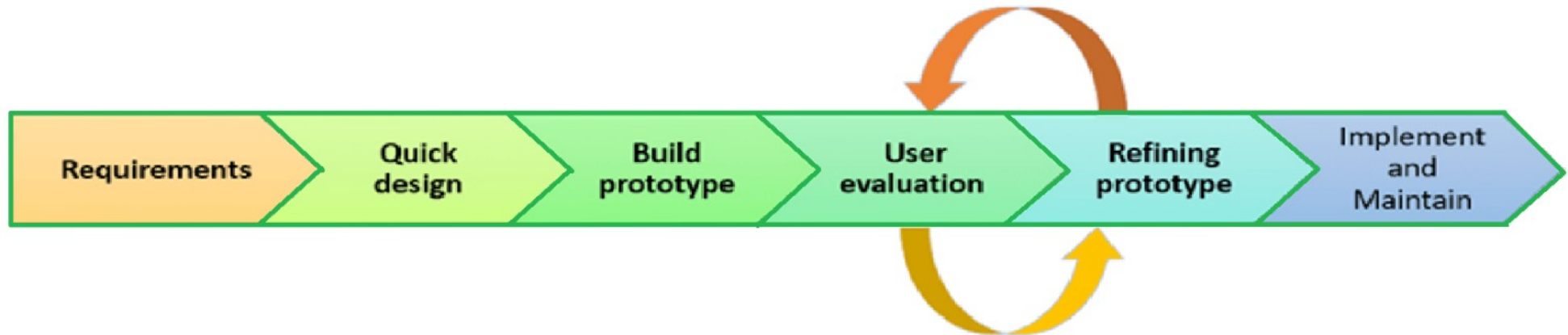
Electronics Team



PROTOTYPE PHASES

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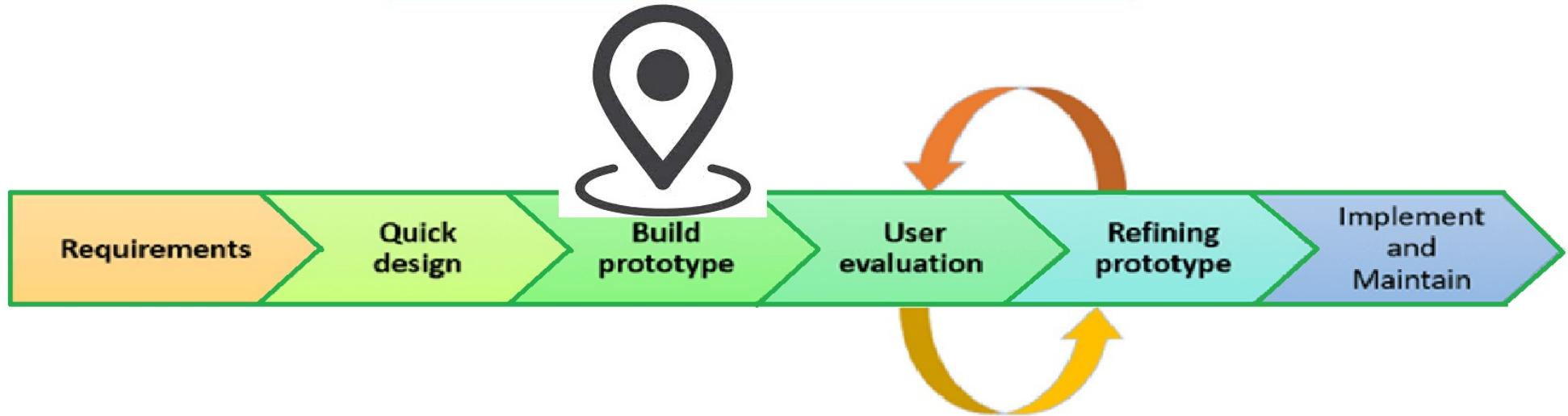
Process of Prototyping



PROTOTYPE PHASES

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Process of Prototyping



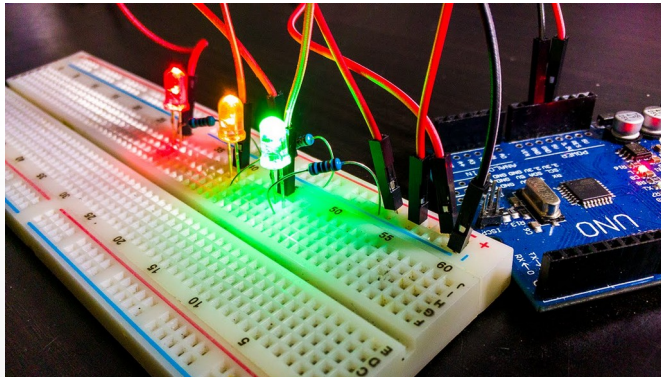


BUILDING THE PROTOTYPE

- Missing components
- Embedded system design
- Component placement considerations
- Cables and wiring specifications

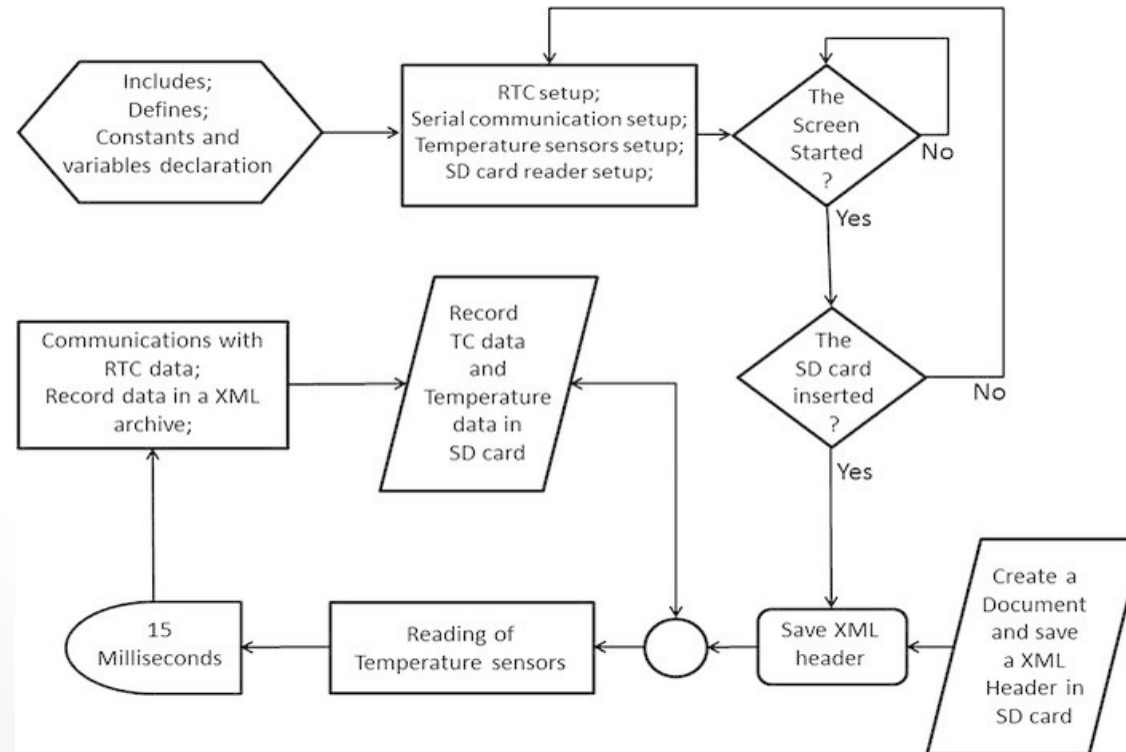
MISSING COMPONENTS

- SAFETY FIRST!!!
- Breadboards
- Handwork tools such as pliers, strippers, screwdrivers, spanners
- Power tools such as drills, soldering iron

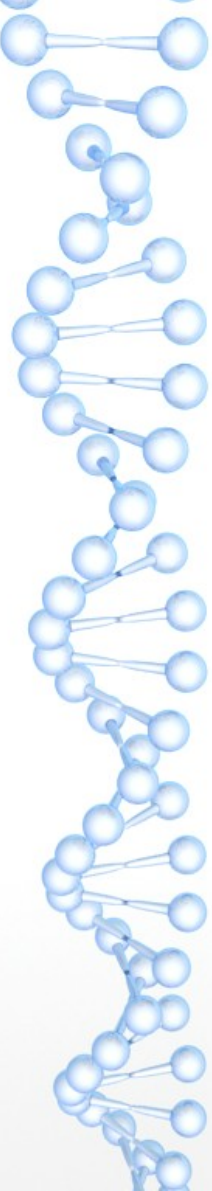


EMBEDDED SYSTEM DESIGN

- Flow Diagrams



EMBEDDED SYSTEM DESIGN



```
File Edit Sketch Tools Help
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F3FBXIZI395SD08
//Simple Shift Register ShiftOut Code

int data = 2;
int latch = 4;
int clock = 3;

void setup () {
  pinMode(data, OUTPUT);
  pinMode(clock, OUTPUT);
  pinMode(latch, OUTPUT);

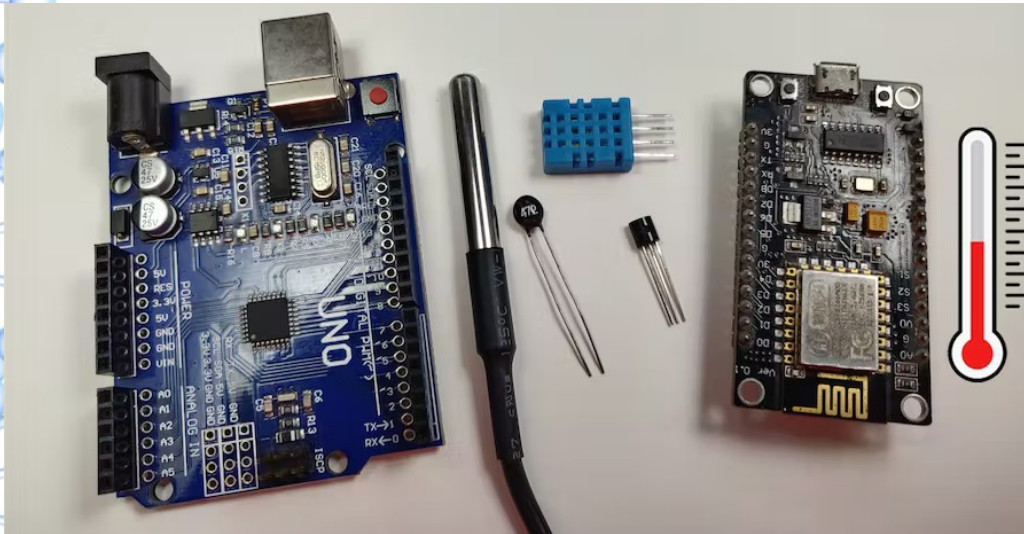
  digitalWrite(latch, HIGH);
}

void loop () {
  for (int j = 0; j < 256; j++) {
    digitalWrite(latch, LOW);
    shiftOut(data, clock, LSBFIRST, j);
    digitalWrite(latch, HIGH);
    delay(1000);
  }
}
```

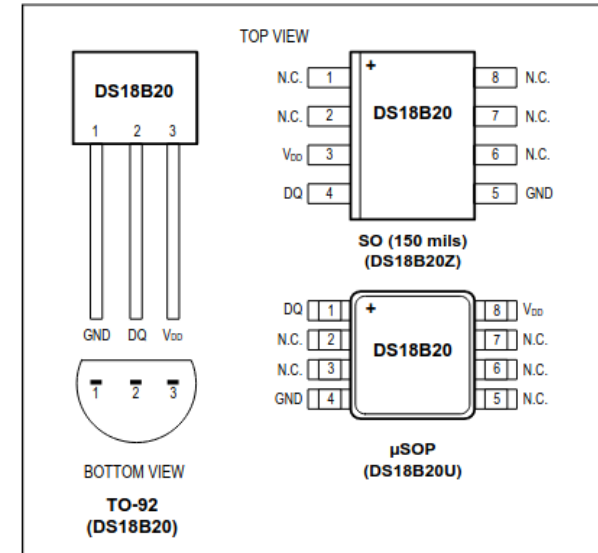
Flowchart → Code

EMBEDDED SYSTEM DESIGN

- Understanding components



Pin Configurations



PROTOTYPE PLACEMENT



PROTOTYPE PLACEMENT

- Mounting system

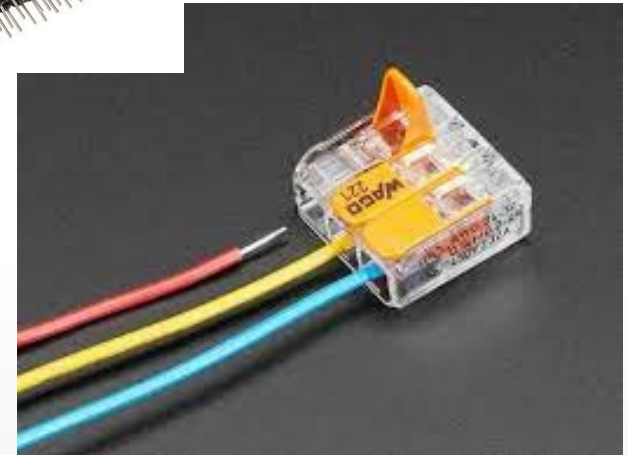


PROTOTYPE PLACEMENT

- Protecting the prototype from the elements



CABLES AND WIRING



UP NEXT

- Volunteer subgroup leaders
- Draw up Gantt Chart and implement schedule
- Site visit for dimensioning
- Flowchart
- Code
- Gather all components and required tools
- BUILD!!!

