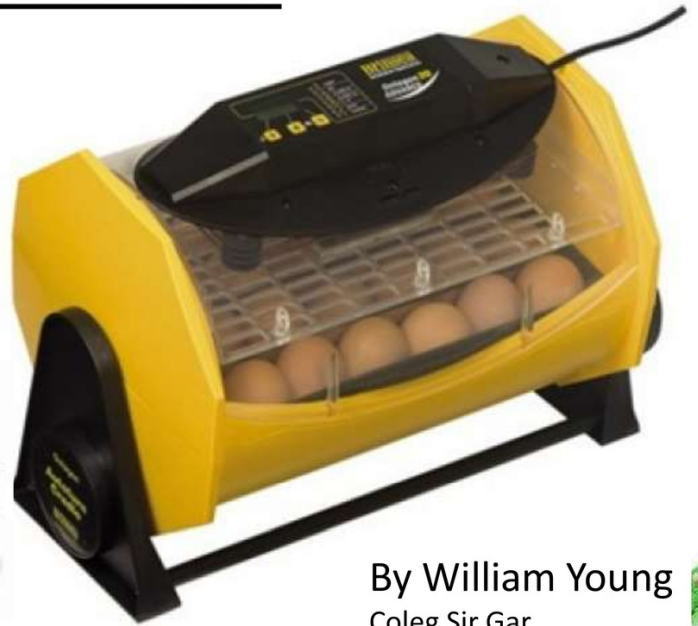
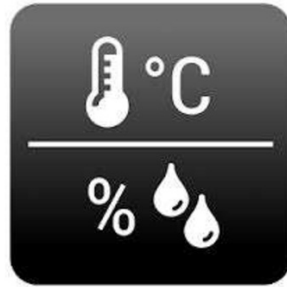


presentation

by William Young

FILE	15410_WILLIAM_YOUNG_PRESENTATION_166238_1716919882.PPTX (1.3M)		
TIME SUBMITTED	29-JAN-2019 03:41PM (UTC+0000)	WORD COUNT	177
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Automatic Incubator Humidity and Temperature control



By William Young
Coleg Sir Gar



Project Prime Objectives

- Sense and adjust humidity and temperature inside incubator
- Store common egg types which can be recalled on request
- Automatically increase humidity prior to hatching
- Hold function when the incubator is opened for egg inspection

Current Setup (humidity)

Manually operated air flow



- Manual adjustment needed,
- Difficult to adjust finitely.

Wet-bulb humidity



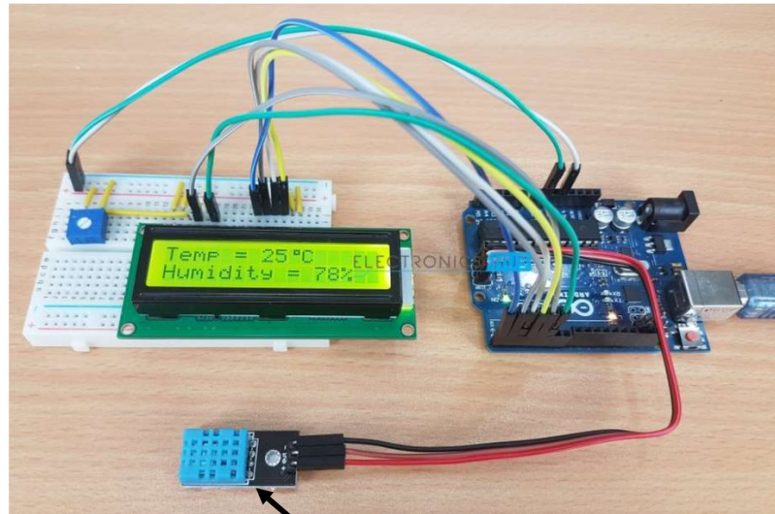
- Requires Bi-daily replenishing,
- Requires conversion from %RH to degrees C,
- Fragile.

(Temperature)



- No thermostat control, if exterior temperature changes inside temperature is affected,
- Difficult to finite adjust,
- Temperature is manually measured by thermometer. (requires 24hr preheat)

Temperature and humidity sensing

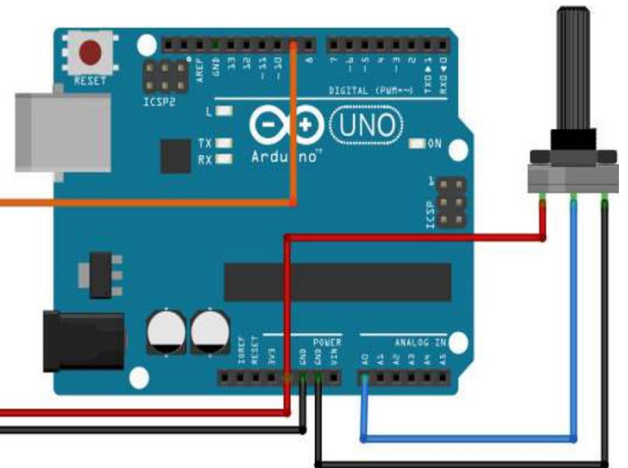


DHT11 combined sensor

Air Vent Controller



Micro Servo



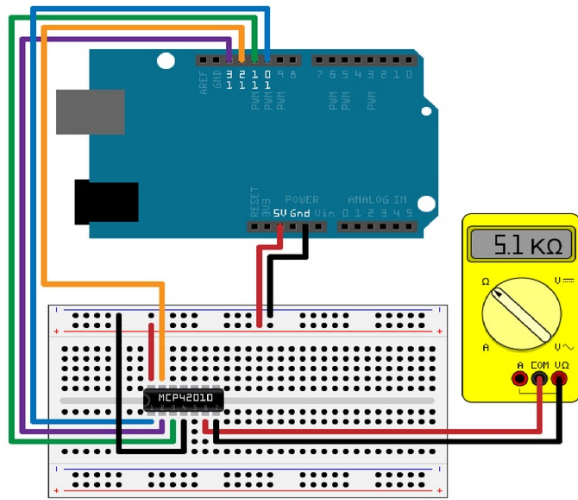
Humidity Control



- Electrically powered vaporiser
- Relay module



Heater Control

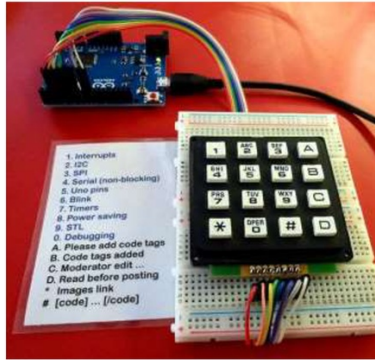


10kΩ digital potentiometer



Data Management

Keyboard



Screen



Other Solutions Considered

PLC control –

- Expensive
- Too excessive
- Bulky



C+ Programming-

- Too complicated to write
- Requires a PC to program to write and run



Any Questions?

Recommended temperatures:	Typical incubation period:
• Hens 37.4 – 37.6°C 99.3 – 99.6°F	21 days
• Pheasant 37.6 – 37.8°C 99.6 - 100°F	23-27 days
• Quail 37.6 – 37.8°C 99.6 - 100°F	16-23 days
• Ducks 37.4 – 37.6°C 99.3 – 99.6°F	28 days
• Geese 37.4 – 37.6°C 99.3 – 99.6°F	28-32 days
• Parrots:	
• Amazons 36.8 – 37.0°C 98.3 – 98.6°F	24-29 days
• Macaws 36.8 – 37.0°C 98.3 – 98.6°F	26-28 days
• Love birds 36.8 – 37.0°C 98.3 – 98.6°F	22-24 days
• African Grey 36.8 – 37.0°C 98.3 – 98.6°F	28 days
• Eclectus 36.8 – 37.0°C 98.3 – 98.6°F	28 days

RH level (%)	WB Temp °F	WB Temp °C
20	69.1	20.6
25	71.6	22
30	74.1	23.4
35	76.5	24.7
40	78.8	26
45	80.8	27.1
50	82.9	28.3
55	84.9	29.4
60	86.7	30.4
65	88.5	31.4
70	90.1	32.3
75	91.9	33.3
80	93.6	34.2
85	95	35
90	96.6	35.9
95	98.1	36.7
100	99.5	37.5

45/100

Instructor

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GRADING FORM: CSG-RUBIC

WILLIAM YOUNG

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RESEARCH-INFORMED LITERATURE

 There is evidence of research in the slides and in the narrative but needed clarity and more on alternatives. 4/10 There was not enough research done with the solutions and needed more explanation. 4/10 8/20

KNOWLEDGE AND UNDERSTANDING

 problem definition was clear. 3/5 Constraints were covered minimally and ethical conduct and standards were mentioned. 2.5/5 Environmental issues were made clear and are a necessity for this project. Sustainability with limitations were not covered sufficiently. 2.5/5 Functional design slide was clear but the narrative was not clear. 2.5/5 Response to questioning was better than the narrative. 5.5/10 16/30

ANALYSIS

 The problem definition is clear. 3/5 Functional design specification was not clear in the slides. 3/10 Justification of final solution was not clear. Not much on comparison with solutions. 2/5 8/20

PRACTICAL APPLICATION AND DEP.

 Design specification was not clear. Only what was determined by the objective. 2.5/5 Rationale for choice for final solution was limited. 5/10 No budget and no plan present or discussed in the narrative. Only in Questioning. 1.5/5 **9/20**

SKILLS FOR PROFESSIONAL PRAC.

 Quality of slides could have been better. 1.5/5 Quality of delivery could have been better. Needed to be clearer. 2.5/5 **4/10**