Assignment Pathway

Track 1			
	Assignment	Value	Due Date
Robotics			
0.	Install Code/Connect to Robot	Practice	12 Jan
1.	Demo 3 Behaviors in Puzzle Language	Practice	12 Jan
2.	Demo 3 Behaviors in Python	Practice	12 Jan
3.	Create Custom Behavior	Minor	12 Jan
4.	Create Second Custom Behavior	Minor	19 Jan
5.	Create Third Behavior Accepting	Minor	19 Jan
	Input		
6.	Behavior Accepting Varied	Major	26 Jan
	Input/Responses		
7.	Demo Additional Complexity to (6)	Minor	2 Feb
8.	Demo Additional Complexity to (7)	Minor	2 Feb
MySQ	L/SQLite3 Db Operations on Cloud		
0.	Help Establish Skunkworks	Practice	2 Feb
1.	Establish Accounts for Your Period*	Minor	9 Feb
2.	Tutor: Table Operations	Minor	9 Feb
3.	Tutor: Query Basics: Selections	Minor	9 Feb
4.	Tutor: Insertions	Minor	16 Feb
5.	Tutor: Deletions	Minor	16 Feb
6.	Tutor: Updates	Minor	23 Feb
7.	Tutor: Basic Python Queries	Minor	23 Feb
8.	Access a Table with Robot	Major	2 March
GUI/TI	KINTER & Advanced Robotics		
0	Demo a GUI	Practice	9 March
1	Demo a GUI w/Robot Moves	Practice	9 March
2	Move Robot w/Variant GUI Inputs	Practice	9 March
3	Control Robot with Complex Actions	Minor	9 March
4	Control Robot based on Table Reads	Minor	16 March
5	Update Table based on Robot Sensor	Minor	16 March
6	Make Robot Speak	Minor	16 March
7	Make Robot Read Query Results	Major	23 March
8	Make Robot Query, Read Results,	Major	30 March
	Perform Actions based on Query		
Master Projects			
0.	Proposal	Minor	30 March
1.	Code Grade	Major	4 May
2.	Presentation	Major	4 May
Final Graded Event		ТВА	ТВА

*Or other periods as directed by the teacher

Each Section must flow *in order*. Any section may be commenced early and in parallel.

Robot	tics		
ltem	Language Track	Specifications	
0	Install Code/Connect to Robot	Install software/drivers as needed, connect to robot	
1	Demo 3 Behaviors in Puzzle Language	Using puzzle-piece scratch language for robot provided demo three behaviors	
2	Demo 3 Behaviors in Python	Perform same behaviors written in Python	
3	Create Custom Behavior	Create your own custom behavior	
4	Create Second Custom Behavior	Create a new custom behavior	
5	Create Third Behavior Accepting Input	Create a program that implements any kind of input for variance of behavior	
6	Behavior Accepting Varied	Create a program that implements varied robot	
	Input/Responses	behavior based on multiple (3) separate input variances	
7	Demo Additional Complexity to (6)	Add a complexity factor to 6	
8	Demo Additional Complexity to (7)	Add another complexity factor to 7	

MySQL/SQLite3 Db Operations on Cloud		
Item	GUI Track	Specifications
0	Help Establish Skunkworks	Help establish accounts on skunkworks as directed
1	Establish Accounts for Your Period*	You will set up the tables for your period (CSA/CS50/IDT)
2	Tutor: Table Operations	Tutor at least 1 specific student in this area
3	Tutor: Query Basics: Selections	Tutor at least 1 specific student in this area
4	Tutor: Insertions	Tutor at least 1 specific student in this area
5	Tutor: Deletions	Tutor at least 1 specific student in this area
6	Tutor: Updates	Tutor at least 1 specific student in this area
7	Tutor: Basic Python Queries	Tutor at least 1 specific student in this area
8	Access a Table with Robot	Write a program that access a table with output reflected in robots' behavior

Tutoring: Each signoff tutoring must be with a different student.

SQL/S	QLite 3	
Item	Database Track	Specifications
0	Demo a GUI	Prove proper installation of SQLite 3 and any tool to
		allow you to manually operate databases
1	Demo a GUI w/Robot Moves	Submit your SQL queries that resulted in proper formation of your desired schema (table)
2	Move Robot w/Variant GUI Inputs	Demonstrate SQL queries that add columns, remove columns, and edit data types of columns
3	Control Robot with Complex Actions	Demonstrate multiple selection queries varying records and what is returned to the result set
4	Control Robot based on Table Reads	Demonstrate multiple SQL insertions
5	Update Table based on Robot Sensor	Demonstrate proper SQL deletions
6	Make Robot Speak	Demonstrate proper SQL updates to multiple records
7	Make Robot Read Query Results	Demonstrate connecting to your SQLite 3 from a python POCO class
8	Make Robot Query, Read Results, Perform Actions based on Query	Demonstrate using the data from an SQLite3 query call in your python POCO in the main part of your program

Master Projects

Once you are completely signed off for all three tracks, you can proceed to your master project proposals. Your master projects require a unique topic of interest to you. Common ideas will not score as well. This must be uniquely your own.

What you will submit as your proposal is a 1-page detailed **word-processed** proposal using the template at the end of this packet. <u>Hand-written proposals</u> *will not be accepted*.

April 11 th	Master Project Proposals Due
May 4 th	Master Projects Due

Specifications

This Master Project will receive **three** total grades: 1 minor, 2 major.

Item	Value
Proposal	Minor
Master Project Code	Major
Master Project Presentation	Major

The operative goal for the Spring semester is to achieve a very simple User Interface Python program with fundamental CRUD access into an SQLITE single table.

CODE Major Grade Required minimums (Major Grade Number 1):

- Must be OOP Python with operable UI w/Menu (UI Class is NOT main module)
- Help About Dialog
- Must connect to a database
- Must be an EMBEDDED DEVICE PROJECT (i.e., Robot or other major challenge device)
- Must display data from the table

Meeting minimums achieves a grade of 70.

Code Grade Enhancers: To achieve each tier, ALL of the lower tiers must be achieved.

To achieve an 80 or better, code must include the following minimums:

- Must include background imagery
- Must have a full working menu as shown in class (If not sure ASK)
- Must complete CRUD operations as directed by user in some manner

To achieve a 90 or better:

- Must have a class modeling the data used in transfer to/from the table (See example)
- Must have full CRUD operations (CREATE, READ, UPDATE, DELETE)
- Must accompany a proposal that scores above a 90

To achieve above a 95:

Your program must be comprehensively produced and show significant programmatic prowess. One of the biggest ways to guarantee this after meeting the 90% minimums, is to place your table on the lab cloud, and be able to connect remotely to it. This can be a copy of your table. Connection strings will be explained in class.

Presentation & Demonstration (Major Grade Number 2)

- Presentations will be done to the entire class
- This major grade will include all of the final elements:
- Professional Dress
- Comprehensive DEMO
- Demo functions properly
- Presentation clarity (Do you stay on point and relevant to the demo of your software)
- Demonstration of why this is meaningful to you beyond mere statement of such
- 2 words per slide rule adherence

Code Point Deductions

- Multiple Page PDF submissions
- File format not PDF (other than PDF except for required imagery)
- Non scannable code results in a zero until resubmitted. If late, school board deductions in effect
- Incorrect Order of submission (Classes, Main, Schemas, Run/Images)
- Missing submissions
- Poorly documented code
- Non-meaningful code
- Non-Working Code
- Late code in accordance with school board policy at all deadlines
- Default Recovery by definition is to submit in accordance with this document unless otherwise directed

Introduction to Digital Technology

[Replace this text with your full name]

Period: [1 or 3]

Master Project Proposal

Date Submitted: [DD Month-Spelled-Out YY]

What I am managing or tracking

[1-2pp]

Why this is meaningful to me

[1-2pp]

Attestation: By signing below I attest that I will write my own code. I will only allow others to help me understand my errors or generically perform a single specific task. All my code will be uniquely my own. My database queries and GUI construction will all be my own. I am aware that all code submissions will be digitally scanned for similarities and any source codes I submit will be in a scannable colorized PDF to Microsoft Teams. I fully understand that this project is a major assessment, and that plagiarism will result in disciplinary action.

Date Signed

You may either add a digital signature or type your full name. By typing your full name, you are attesting the above acknowledgements.