

Full Stack Programming

Harvard CS50 AP

Spring Semester 2023 Revision 1, 2 Jan 2023

Standards Mastery Framework Project Sequence

Assignment Pathway

Track 1		
Assignment	Value	Due Date
College Board Review & CREATE AP EXAM		
0. CREATE review certification	Practice	12 Jan
1. CREATE topic ideas form	Practice	12 Jan
2. CREATE Language Selection/Justification	Practice	12 Jan
3. CREATE	CREATE	9 Jan – 3 Feb*
4. CREATE	CREATE	9 Jan – 3 Feb*
5. CREATE	CREATE	9 Jan – 3 Feb*
6. CREATE	CREATE	9 Jan – 3 Feb*
7. CREATE	CREATE	9 Jan – 3 Feb*
8. CREATE	CREATE	9 Jan – 3 Feb*
Sprint 1		
0. Submit Your Tasking Paper for Sprint 1	Practice	2 Feb (May slide if CREATE requires)
1. Warm up Python Program	Minor	9 Feb
2. Establish Working Connection to Skunkworks (Demo, may combine w/1)	Minor	9 Feb
3. Sprint 1 Progress Check 1	Minor	9 Feb
4. Progress Report Paper Sprint 1	Minor	16 Feb
5. Sprint 1 Progress Check 2	Minor	16 Feb
6. Completion Paper for Sprint 1	Minor	23 Feb
7. Sprint 1 Pacing and Completion Score	Minor	23 Feb
8. Sprint 1 Submission	Major	2 March
Sprint 2		
0 Submit Your Tasking Paper for Sprint 2	Practice	9 March
1 Sprint 2 Peer Review Paper	Practice	9 March
2 Sprint 2 Sprint Entry Code Review	Minor	9 March
3 Sprint 2 Run Check review	Minor	9 March
4 Peer Review Form Sprint 2	Minor	16 March
5 Sprint 2 Progress Check 1	Minor	16 March
6 Sprint 2 Test Run Checks	Minor	16 March
7 Sprint 2 Submission	Major	23 March
8 Group Grade Division Performance	Major	30 March
Master Projects		
0. Proposal	Minor	30 March
1. Code Grade	Major	4 May
2. Presentation	Major	4 May
Final Graded Event		
	TBA	TBA

*Approximately for blocking 12 hours required for CREATE.

Each Section (not CREATE) must flow **in order**. **Any section may be commenced early and in parallel.**

College Board Review & CREATE AP EXAM

Item	Language Track	Specifications
0	CREATE Review Certification	Form to fill out
1	CREATE Topic Ideas Form	Form to fill out
2	CREATE Language Selection/Justification	Form to fill out
3	CREATE	12 hours of CREATE following review
4	CREATE	12 hours of CREATE following review
5	CREATE	12 hours of CREATE following review
6	CREATE	12 hours of CREATE following review
7	CREATE	12 hours of CREATE following review
8	CREATE	12 hours of CREATE following review

Sprint 1

Item	GUI Track	Specifications
0	Submit Your Tasking Paper for Sprint 1	Details and comprehensive writeup determine grade as well as overall presentation (APA/No Coversheet)
1	Warm up Python Program	Python program that has multiple methods
2	Establish Working Connection to Skunkworks (Demo, may combine w/1)	Python program that connects to skunkworks database table
3	Sprint 1 Progress Check 1	Live demo
4	Progress Report Paper Sprint 1	Complete Sprint Writeup Form
5	Sprint 1 Progress Check 2	Live Demo
6	Completion Paper for Sprint 1	Complete Sprint Completion Writeup Form
7	Sprint 1 Pacing and Completion Score	Score based on your contribution, timeliness, and completion of all Sprint 2 assignment coding
8	Sprint 1 Submission	Code and Run-check grade

Sprint 2		
Item	Database Track	Specifications
0	Submit Your Tasking Paper for Sprint 2	Complete Sprint 2 Assignment Form
1	Sprint 2 Peer Review Paper	Complete Sprint 2 Peer Review Form
2	Sprint 2 Sprint Entry Code Review	Live Code Review
3	Sprint 2 Run Check review	Live Demo
4	Peer Review Form Sprint 2	Submit Peer Review form for other student this class
5	Sprint 2 Progress Check 1	Live Demo
6	Sprint 2 Test Run Checks	Live Demo of Testing Performed
7	Sprint 2 Submission	Code and Run-check grade
8	Group Grade Division Performance	Division Grade based on targeted completion and functionality as a team

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. Hand-written proposals **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.

Master Project Alignments:

You are authorized to create master projects that EXTEND the group capabilities for your airline projects! Be creative and add additional capabilities with your individual code.

First-come, first-serve for ideas!

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 connected to Skunkworks internal cloud (i.e., Lab Cloud)
- 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

Harvard (CS50 AP) AP Computer Science Principles

[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.