FA22 ECE 411 Team 3: Test Plan

3-in-1 Stopwatch, Counter, and Flappy Bird

Celina Wong Alex Kim Dmytro Prystupa Huibo Yu

Test Author: Alex Kim & Huibo Yu				
	Test Case Name:	Portable 3-in-1 Stopwatch power up #1	**Test ID #:**	Stopwatch power up-T-01
	Description:	Checks that our system powers up with no issues and is safe (smoke test). To do this, we will gradually introduce power to our system instead of starting off with full power. Once the PCB board is power tested and verified, we can introduce the full power needed for our system.	**Type:**	☑ white box □ black box □ _____
Tester Information				
	Name of Tester:	Alex Kim & Huibo Yu	**Date:**	11/29/2022
	HW/SW Version:	1.0	**Time:**	9:07AM
	Setup:	Test stopwatch power system using an external power supply & Multimeter to ensure our system is safe and fully functional.		

STEP	**Action**	**Expected Result**	**PASS**	**FAIL**	**N/A**	**Comments**
1	Ensure all wires are connected properly.	There should be no loose wires or connections in our system.			✔	Have not built the device with the PCB yet.
2	Gradually power up using an external power supply.	By using an external power supply, we can control the amount of power our system is getting before reaching full, peak power.			✔	These will all be tested by 12/4.
3	Verify & check that each component is getting power.	Use a Multimeter to check that each component is getting power/current to it.			✔	
4	Turning on the switch turns on the LCD screen.	The Arduino UNO R3 indicator light should light up normally when the switch is on, and the LCD screen should light up normally.			✔	
5	Rotary encoder button functionality.	Use an external power source to measure the minimum power that can make the rotary encoder work. It should be less than the power of the power source we are equipped with.			✔	
5	Introduce our 9V battery as a power supply.	After checking that our system is fully functional thus far, we will hook up our battery power supply to the system and verify our stopwatch is functioning properly.			✔	
	Overall test result:					

Test Author: Dmytro Prystupa & Celina Wong				
	Test Case Name:	Portable 3-in-1 Stopwatch code test/verification #1	**Test ID #:**	Stopwatch code check-T- 01
	Description:	This test case makes sure the firmware is operating properly. On power up, there should be a main menu for the user to select between three modes, and selecting a mode will enable the user to go into that feature. Each mode should operate accordingly.	**Type:**	☑ white box □ black box □ _____
Tester Information				
	Name of Tester:	Dmytro Prystupa & Celina Wong	**Date:**	11/30/2022
	HW/SW Version:	1.0	**Time:**	10:19PM
	Setup:	Write code on PC and flash to Arduino board.		

STEP	Action	Expected Result	PASS	FAIL	N/A	Comments
1	Main menu	This screen shows three options for the user select from. Selecting an option will go to that function. Alternatively, the user should be able to go from a function and back to the main menu.			✔	Have not tested yet.
2	Timer mode	This mode should start at 0. A button click should start the timer and include the format of MM:SS.ZZ (minutes, seconds, and milliseconds). Return to main menu if button is held down for two seconds.	✔			This functionality operates accordingly by itself.
3	Counter mode	This mode should start at count of 0. Each button click will increment the current count by 1. Return to main menu if button is held down for two seconds.	✔			This functionality operates accordingly by itself.
4	Flappy Bird mode	This mode prompt the user to press the button. After a button press, there will be an animated character that stays at the same spot, and blocks of random sizes will inch closer to the character. If the character hits the blocks, then the game will end. If the character successfully jumps over a block, the small counter at the top right of the screen will increment by 1. The user can allow the character to jump by pressing the button. Return to main menu if button is held down for two seconds.	✔			This functionality operates accordingly by itself.
	Overall test result:					

Test Author: Dmytro Prystupa & Celina Wong						
	Test Case Name:	Portable 3-in-1 Stopwatch button functionality check #1			**Test ID #:**	Stopwatch button-T-01
	Description:	*What is this test case testing? Which requirements, which specifications, etc.* This test case makes sure the rotary button performs properly. Rotating & holding the knob will allow the user to navigate through the system accordingly.			**Type:**	☑ white box □ black box □ _____
Tester Information						
	Name of Tester:	Dmytro Prystupa & Celina Wong			**Date:**	11/30/2022
	HW/SW Version:	1.0			**Time:**	10:36PM
	Setup:	*Wire the Rotary Encoder into the Arduino.*				
STEP	**Action**	**Expected Result**	**PASS**	**FAIL**	**N/A**	**Comments**
1	Button Press	When pressing the button down the user makes one selection.	✔			This function operates normally.
2	Button Short Press	When the button is pressed swiftly after the user has made the function selection the function will start. A short press will result in the start of the timer, in timer mode. A short press will result in a character jump, in game mode. A short press will add one to the counter, in count mode.	✔			This function operates normally.
3	Button Long Press	Holding the button down for four seconds will return the user back to the main menu.			✔	
4	Button Scroll Counter Clockwise	Button Scroll counter clockwise should highlight an option above the option that is currently highlighted.	✔			This function operates normally.
5	Button Scroll Clockwise	Button scroll clockwise should highlight an option below the option that is currently highlighted.	✔			This function operates normally.
	Overall test result:					