



**Boston University**  
**Electrical and Computer Engineering**  
**EC463 Senior Design Project**

**First Prototype Testing Plan**

**VETCON**  
**BADGE**



**By**

**Team 32**

**Team Members**

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## **Required Materials:**

### **Hardware:**

1. Texas Instruments (TI) MSP430FR2433 LaunchPad™
  - a. 16 bit MCU
  - b. 20-pin LaunchPad Kit Standard Leveraging The BoosterPack Ecosystem
  - c. On-Board eZ-FET Debug Probe
  - d. 2 Buttons And 2 LEDs For User Interaction
2. Computer/Laptop
3. Micro USB Cable
  - a. Connection Between MSP430 & Computer

### **Software:**

1. Code Composer Studio Integrated Development Environment.  
(CCSTUDIO)
  - a. C/C++ compiler
  - b. Source Code Editor
  - c. Build, Upload, Monitor
  - d. Embedded Debug Capabilities
2. Visual Studio Code
  - a. Source Code Editor
3. PlatformIO
  - a. Cross Platform / Cross Architecture IDE tool
  - b. Embedded Application Software Development
4. Scripts
  - a. C++ Script, main.cpp
5. Package Extensions
  - a. Monitoring Button State & Debouncing
6. Github Pages
  - a. Hosting Of Web Game

## Setup:

The setup for this project is relatively simple. First, a team member's computer will clone the team's Github Repository with the test code from the 'testing' branch. The project containing 'main.cpp' and all libraries and dependencies will be opened through PlatformIO on the Visual Studio Code IDE. Finally, a team member will plug in the MSP430FR2433 to the computer, ready for demonstration.

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## Testing Procedure:

1. Initialize the MSP + software (build, upload, and monitor)
2. Demonstrate option 1 (Set Name Tag)
  - a. Demonstrate that repeating option 1 prompts message that name has already been set
  - b. Demonstrate the secret name 'Senior Design' option
3. Demonstrate option 2 (Display Name Tag)
4. Demonstrate option 3 (Game Link)
  - a. Demonstrate the Dino Game
  - b. Show winning condition secret code
5. Demonstrate option 0 (Reset)
6. Demonstrate secrets
  - a. Show a secret username through option 1
  - b. Select option 4, prompting "access denied"
  - c. Select 'secret' option 9, unlocking option 4 in the menu

## **Measurable Criteria:**

The criteria for a successful running of the prototype testing is as follows:

1. VETCON BADGE displays on startup
2. Main menu displays in terminal
3. User can select from given options
4. User can enter name to nametag
5. User's name can be displayed
6. Game link can be retrieved
7. Online game runs
8. Secret phrase can be retrieved on winning the game
9. User can reset badge
10. User can select to abort / continue with reset