```
        ┌─────────┐
        │  Start  │
        └────┬────┘
             │
             ▼
    ┌─────────────────┐      ┌─────────┐      ╱╲
    │  Initialization │─────▶│ Phase 0 │─────▶╱  ╲
    └─────────────────┘      └─────────┘     ╱ Main Switch ╲
                                  ▲          ╲ State Change? ╱
                                  │           ╲  ╱
                                  └──No────────╲╱
                                                │Yes
```

Main Switch State Change?

No

Yes

Phase 0

Initialization

Start

Phase 1   Phase 2   Phase 3   Phase 4

Key

Time-Out Interrupt	- - - - - - -

Flowchart content:

Start → Initialize LED I/O → Initialize Servo Motors I/O → Initialize Stepper Motors I/O → Initialize Stepper Motor Homing Switch I/O → Initialize Buttons and Switches I/O → Initialize Rotary Encoders I/O → Initialize 7-Segment Display I/O → Initialize DC Motor I/O → Initialize Audio I/O

Initialize Serial Communication Protocol → Initialize "Attempts" Global Variable → Send Response Request → Serial Connection Response?

Serial Connection Response? — True → Initialize "Step count" local variable → Homing Switch Off?
Serial Connection Response? — False → Delay 5000 ms → Increment Attempts → Attempts>12?
Attempts>12? — False → Increment Attempts
Attempts>12? — True → Enter Error State

Homing Switch Off? — True → Increment Physical Stepper Motor Position → Delay 10 ms → Step count > Steps per revolution?
Step count > Steps per revolution? — True → Enter Error State
Step count > Steps per revolution? — False → (loops down to Homing Switch Off?)
Homing Switch Off? — False → Move Stepper Motor to Home

Move Stepper Motor to Home → Turn all LED's Off → Turn Off 7-Segment Display → Move Servos to Home → Reset "Attempts" → Send Initialize Command → Serial Connection Response?
Serial Connection Response? — False → Attempts>5?
Attempts>5? — False → Increment Attempts → Delay 500 ms → Send Initialize Command
Attempts>5? — True → Enter Error State
Serial Connection Response? — True → Initialize "i" local variable

Initialize "i" local variable → i > 400?
i > 400? — False → Increment Physical Stepper Motor Position → Move Servos to position (i*(400/1023)) → All LED's state is set to (i%100%2) → All segments of 7-Segment Display set to (i%100%2) → Delay 5 ms → (loops back to i > 400?)
i > 400? — True → Turn all LED's Off → Turn Off 7-Segment Display → Move Servos to Home → Reset "Attempts" → Serial Finish Flag?

Serial Finish Flag? — True → End of Phase
Serial Finish Flag? — False → Attempts>5?
Attempts>5? — False → Delay 500 ms → Increment Attempts
Attempts>5? — True → Enter Error State

Key:
- Start of Phase (oval)
- CPU & IO Process (rectangle)
- Data Handling (parallelogram)
- Serial Communication (cylinder)
- End of Phase (rounded rectangle)

Start

Send Phase 1 Command

Key	
Start of Phase	⬭
CPU & IO Process	▢
Data Handling	▱
Serial Communication	⬭
End of Phase	⬭