GUI

Display

+ initDisplay()
+ ClearAreaDisp(in pointX: unsigned short, in pointY: unsigned short, in width: unsigned short, in height: unsigned short)
+ initConditioning()
+ initOcclution()
+ initSetup()
+ moveSquare(in startX: unsigned short, in startY: unsigned short, in endX: unsigned short, in endY: unsigned short, in width: unsigned short, in height: unsigned short)
+ updateConditioning(in *buttonPressed: boolean, in *btPressed: boolean)
+ updateOcclusion(in *buttonPressed: string)
+ updateSetup(in *state: boolean)
+ getNoCycles(): unsigned short
+ setNoCycles(in value: unsigned short)
- updateTimeLeft(in value: unsigned short)
- updateNoOfCycles(in value: string)
- updateStopWatchTime(in minutes: unsigned short, in seconds: unsigned short)

Button

+ readModeSwitch(): unsigned short
+ startStopConditioning(in startButtonPressed: boolean): boolean
+ btPressed(in btPressed: boolean): boolean
+ startStopOcclution(in StartButtonPressed: boolean): boolean
+ changer(in state: unsigned short): unsigned short
+ selector(in state: unsigned short): unsigned short

Logic

DigitalFiltering

+ averagingZeroGroupDelay(in peaks[]: unsigned short, in peakArrayLength: unsigned short, in *totalNumberOfPeaks: unsigned short, in alpha: double)

BPAlgorithm

+ calculateMAP(in peaks[]: unsigned short, in cuffPressure[]: unsigned short, in peakArrayLength: unsigned short, in *totalNumberOfPeaks: unsigned short)
+ calculateSYS(in peaks[]: unsigned short, in cuffPressure[]: unsigned short, in peakArrayLength: unsigned short, in *totalNumberOfPeaks: unsigned short, in MAP: unsigned short)
+ calculateDIA(in peaks[]: unsigned short, in cuffPressure[]: unsigned short, in peakArrayLength: unsigned short, in *totalNumberOfPeaks: unsigned short, in MAP: unsigned short)

Senarios

+ bloodPressure(in *MAP: unsigned short, in *SYS: unsigned short, in *DIA: unsigned short, in *btPressed: boolean)
+ occlusiontrainung(in *start: boolean): unsigned short
+ occlusiontrainung(in pressure: unsigned short): unsigned short

MemoryParser

+ GetNoOfCycles(): unsigned short
+ setNoOfCycles(in val: unsigned short)
+ getTimePerCycle(): unsigned short
+ setTimePerCycle(in val: unsigned short)
+ writeToSDCard(in timeStamp: string, in occlusionComplete: boolean, in occlusionPressure: unsigned short, in sys: unsigned short, in map: unsigned short, in dia: unsigned short, in interruptOcclusion: boolean)
+ getID(): string
+ startInitSD()

Timer

+ setTimeStamp()
+ getTimeStamp(): Time
+ countdown(in totalTime: unsigned short)
+ stopWatch()
+ displayTimer(): string
+ getTimerStatus(): boolean
+ setTimerStatus(in val: boolean)
+ timeToString(): string

Data

PressureControl

+ runMotor()
+ runValve()
+ turnMotorOn(in speed: unsigned short)
+ turnMotorOff()
+ turnValveOn()
+ turnValveOff()

ExternalMemory

+ initializeSD()
+ generateRandomNumber(): string
+ checkFilesSD(): string
+ writeToSDCard(in textToSD: string)
+ createFileTemplate(in filename: string)
+ getFilename(): string

InternalMemory

+ writeToEEPROM(in adr: integer, in value: unsigned short)
+ readFromEEPROM(in adr: integer): unsigned short

PressureSampeling

+ getCuffPressure(): unsigned short
+ runningPeakDetect(in peaks[]: unsigned short, in cuffPressure[]: unsigned short, in peakArrayLenght: unsigned short, in *totalNumberOfPeaks: unsigned short, in pc: PressureControl, in util: Utilities)

Utilities

+ rawToMmHg(in rawPressure: unsigned short): double
+ mmHgToRaw(in mmHgPressure: unsigned short): double

Libraries

+Arduino
+EEPROM
+SD
+SPI
+DS1302
+Adafruit_GFX
+Adafruit_ILI9340