

GUI

| Display |
|---|
| + initDisplay() + ClearAreaDisp(in pointX: unsigned short, in pointY: unsigned short, in width: unsigned short, in height: unsigned short) + initConditioning() + initOcclusion() + 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) + updateOcclusion(in *buttonPressed: string) + updateSetup(in *state: boolean) + getNoCycles(): unsigned short + setNoCycles(in value: unsigned short) - updateTime_left(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 + startStopOcclusion(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) |

| BPAAlgorithm |
|---|
| + 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 bps: BPAAlgorithm, in pc: <no type>, in df: DigitalFiltering, in util: Utilities) |

| 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) |

| 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 |
|---|
| + initializeSDCard() + generateRandomNumber(): string + checkFilesSD(in dir: File, in val: string): string + writeToSDCard(in textToSD: string) + createFileTemplate(in filename: string) |

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

| PressureSampling |
|---|
| + getCuffPressure(): unsigned short + runningPeakDetect(in peaks[]: unsigned short, in cuffPressure[]: unsigned short, in peakArrayLength: 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 |
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| + Arduino + EEPROM + SD + SPI + DS1302 + Adafruit_GFX + Adafruit_ILI9340 |