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| function | work | arguments | To be included for using this function | output |
| Timer\_init | 1.This function initiates both timer 4&5  2. It gives interrupt on reaching particular value for  both timer | NA | timer\_init.h  navigation.h  pose\_update.h | NA |
| pwm\_init | 1.This function initiates PWM generator 0, module 0&1  2.Gives pwm of 0 duty cycle when this function is called on PB4,5,6,7 | NA | pwm\_init.h | NA |
| encoder\_init | 1.This function initiates quaderature encoder module on pin PD6,7 & PC5,6  2.position & velocity function are already enabled with pose set to 0 at initial condition | NA | encoder\_init.h | NA |
| Tim\_isr | 1.This function gets called after particular timer interrupt  2.this function updates current value of bot | NA | timer\_init.h  pose\_update.h | NA |
| Pose\_update | this function gives the currnt value of x,y,theta on corresponding input | x,y,t | Pose\_update.h | Current value of x ,y,theta |
| go\_in\_direction | This function makes the bot to move in right left forward backward direction also gives zero rotation in clock-wise & anti clock-wise direction | W,  S,  A,  D,  R,  L | timer\_init.h  navigation.h  pwm\_init.h  encoder.h  Pose\_update.h  odom\_init.h | Forward  Backward  left  Right  clock-wise anti clock-wise |
| NAV\_ISR | 1. This function gets called after particular timer interrupt  2.this function is basically PID in order to reach particular velocity | NA | timer\_init.h  navigation.h  pwm\_init.h | NA |
| send | this function sends strings over xbee | 1.Pointer to string  2.api  3.Pointer to mac\_id of bot to send | Pose\_comm.h | NA |
| Send\_float | This function sends current pose(X,Y co-ordinate&theta) the bot to bot whose mac\_id is given  2.send the word coordinate for getting any bot’s odometric data | 1.pointer to structure  2.Pointer to mac\_id of bot to send | Pose\_comm.h  odom\_init.h | NA |
| req\_isr | 1.it stores all coordinates in corresponding bot  2.this function gets called when there is receive interrupt on UART  3.other data is stored in recive\_data string | NA | Pose\_comm.h | NA |
| odom\_init | 1.this function calls for encoder\_init & Timer\_init  2.it sets up initial coordinates of bot | NA | odom\_init.h | NA |