CSSE2310@UQ20 Assignment 1

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1 Introduction

- naval.c is the entry point which uses the other ADT's

- A char * is used as a thing in thing.h In thing.h when a new thing is made it is automatically cleaned of excess white space. A thing is a used inside a node in node.h. A node is used to make a list in list.h. A list is used to make a queue in queue.h

- important files to checkout...

  - thing.h
  - grid.h
  - move.h
  - game.h

2 File Handling

- Basic checks to ensure correct arguments are provided, c standard library functions used to ensure read access to files allowed, in check.h.

- Files are opened and read checked and converted to thing/s i.e. char * and saved in a Queue of things, from read.h.

3 Data Structures

- Arrary's are used to store,

  - the Grid as a Thing * for n rows. Each row represents a Thing (i.e. char *).
  - The cpu and player ship healths so when a ship is hit we can tell if it sunk.

- List is used,

  - in a Queue to handle moves cpu from file, good for reading line by line from file and deque'ing.

4   Game Logic

- Initialization

  - The Game ADT uses a Grid ADT as a back end and forwards the errors that may occur in grid initialization because of large input of xy-axis or overlap/bound error placing ships caused by draw function (recursive) in grid.h.

- Move

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- Play

  - gets and sets fire element on a Grid checks if get returned a ship number if so uses the ship number to reverse search the health of the ship in an array of player_ship_health same and reduces the health, if zero reached then ship sunk signal sent, display.h appropriately prints the signals sent by these functions.

5   Display

- The Messages needed to be printed are kept in handle.h and handled by the appropriate # defined errors using switch. Easy if messages needed to be changed, in handle.h.

- The Game display is handled by the Grid in grid.h itself where grid is a m by n char **plain used store the values water, ship, hit and miss. gird.h also handles a discrete method that hides particular character showing only chars provided as argument to function.

- display.h handles the result of functions applied to a Game, Grid to display appropriate messages for whose move, did the move hit, miss, game win and so on.

6   Error Handling

- handle.h has errors and error messages handled by switch