

## John Romero Programming Proverbs

- 2. “It’s incredibly important that your game can always be run by your team. Bulletproof your engine by providing defaults (for input data) upon load failure.”
- John Romero, “The Early Days of Id Software - John Romero @ WeAreDevelopers Conference 2017”

## Work flow for touchmap, chisel, penguin tower, doom3 usage

- touchmap should be able produce a text map which is suitable for penguin tower, isometric penguin tower and doom3
- all maps are in text, doom3 maps and penguin tower maps can be produced using touchmap and chisel

## Work flow for touchmap, chisel, penguin tower, doom3 usage

- using a terminal in J109 type:

- ```
$ j109-d3
```

- this will take a few seconds and will:
  - create a set of configuration files for doom3
  - download the chisel source code from github and place it into:  
`$HOME/Sandpit/chisel`
- it then starts up doom3

## chisel

- after the doom3 window appears open up another command line terminal and type:

```
$ cd  
$ cd Sandpit/chisel/python  
$ ls ../maps  
$ ./developer-txt2map ../maps/three.txt
```

## Chisel map: three.txt

`$HOME/Sandpit/chisel/maps/three.txt`

```
define 1 room 1
define 2 room 2
define 3 room 3
define s worldspawn
define o monster monster_demon_imp
define h monster monster_demon_hellknight
define S monster monster_demon_tick
```

```
#####
# 1                # 2                #
#                  #                  #
# s          o    .                #
#                  .                #
#          #####                h  #
#          #                  #
#          #                  #
#####..#####
# 3                #
#      S                #
#                  #
#####
```

## Touchmap

- should eventually generate text files similar to `three.txt`
- `chisel` will produce doom3 and penguin tower equivalents from your text map

## Touchmap

- now return to the doom3 window and press the tilde key `~`
  - this enables the in game doom3 console
- in this console type: `dmap tiny.map`
  - `dmap bsp` compiles the `tiny.map`
- once this is complete, type in the doom3 console: `map tiny.map`
  - which loads in the bsp compiled map `tiny.map`
- notice that the output from `chisel` is always `tiny.map`
  - this is for convenience and configuration
  - `chisel` can output the file into any named file if necessary

# Penguin Tower

- is a multiplayer 2 dimensional game
  - inspired by [Morloc Tower](http://www.mobygames.com/game/dunjonquest-morlocs-tower) `<http://www.mobygames.com/game/dunjonquest-morlocs-tower>` although Penguin Tower is very different
- however the screen layout and many of the key commands are the same



# Penguin Tower

- you can download a copy of the game from [here](http://floppsie.comp.glam.ac.uk/download/penguin-tower/penguin-tower-1.0.tar.gz) `<http://floppsie.comp.glam.ac.uk/download/penguin-tower/penguin-tower-1.0.tar.gz>`.

- you then need to extract the archive using the following command line:

```
$ mkdir $HOME/Sandpit  
$ cd $HOME/Sandpit  
$ wget http://floppsie.comp.glam.ac.uk/download/penguin-tower/penguin-tower-1.0.tar.gz  
$ tar zxvf penguin-tower-1.0.tar.gz
```

## Creating important directories

- these directories need to be created before penguin tower can be built

- ```
$ mkdir -p $HOME/Sandpit
$ cd $HOME/Sandpit
$ mkdir -p $HOME/opt/bin
$ mkdir -p build-ptower
```

## Building Penguin Tower

- you should be able to build it by typing:

```
$ cd $HOME/Sandpit
$ mkdir -p build-ptower
$ cd build-ptower
$ ../penguin-tower-1.0/configure --prefix=$HOME/opt
$ make
$ cd ..
```

- you need to check that the make program above exited with no error messages
- note the build will recreate all images in the build directory.

## Installing your own copy of Penguin Tower

- you can install your own copy of Penguin Tower into your directory (\$HOME/opt) specified by the `--prefix` to the `./configure` command

- ```
$ cd $HOME/Sandpit
$ mkdir -p build-ptower
$ cd build-ptower
$ make install
$ cd ..
```

## Penguin Tower keyboard controls

- [keyboard controls](#) `<ptower.html>`.

## Running the client of Penguin Tower

- you should be able to run the client like this:

- ```
$ $HOME/opt/bin/penguin-tower mcgreg.comp.glam.ac.uk:7000
```

- also consider running it in fullscreen by:

- ```
$ $HOME/opt/bin/penguin-tower -f mcgreg.comp.glam.ac.uk:7000
```

## Configure notes

- you only need to execute `../penguin-tower-1.0/configure --prefix=$HOME/opt` once ever in this directory (unless you modify the package)
- check out the documentation [here](#) (`ptower.html`).

## Configure notes

- you can also run the system installed version by typing:

- ```
$ penguin-tower mcgreg.comp.glam.ac.uk:7000
```



## Running your own Penguin Tower server

- can be done by opening a terminal and typing the following:
- ```
$ cd  
$ ./opt/bin/ptower-server ./opt/share/ptower/maps/star
```
- to stop the server, type `^C` (press down the control key and then press the `c` key, now release both keys)
- there are a number of maps in the `$HOME/opt/share/penguin-tower/maps` directory
  - `m1`, `star` and `glover`
  - `star` is the smallest (5 rooms)

## Tutorial work

- examine the chisel file input file  
`$HOME/Sandpit/chisel/maps/three.txt`
- examine the chisel file output  
`$HOME/Sandpit/chisel/python/tiny.pen`
- try making a simple change to  
`$HOME/Sandpit/chisel/maps/three.txt` and `bsp` compile the map and load it into `doom3`
- examine many of the files in `$HOME/Sandpit/chisel/maps` what mapping features does the chisel program seem to provide
  - write a list of `chisel` features you would like to utilise in your touchmap tool