

Practice 11-12

Polymorphism

1. Castle raiding.

This time you are part of a GameDev team and they are developing a turn based castle defence game. For simplicity reasons the game will be played on the console. The game is played on a rectangle terrain split by tiny squares. Each square can have exactly one entity at a time. Drawing the game's board/terrain on the console will be as simple as printing the rectangular matrix of entities on the console. Each entity will have a different character to be portrayed by. Interaction happens on turns by asking the player for an input on what they want to do.

There can be a few different entities on the game's terrain. **Barrels** that explode when shot, or exploded, **bushes** - only get destroyed by explosions, **soldiers** - which have names (exact memory) and receive random damage when shot, **tanks** that can only be damaged by an explosion.

Soldiers move randomly to the left (diagonally up or down) after each of the player's moves and tanks only go forward (to the left).

Enemies should start showing up from the right side, while our castle will be on the left. As soon as enemies are close enough to the castle they can start damaging it with their range being dependent on their type. For example tanks and SWAT can shoot from further away.