Testing plan for COMP2511 Project Brownie (updated milestone 3)

test architecture - unit, integration, system, and usability tests:

Our group agreed that unit testing should be performed first of all testing processes, each module of the implementation, such as building a weapon, or liting a lightbulb, is tested separately.

1. Player movement (10 marks)
☑ ~~basic movement: testMovementUp/Down/Left/Right()~~
☑ ~~test player movement blocked by walls - use maze dungeon~~
☑ ~~test player movement blocked by doors - use two doors dungeon~~
☑ ~~test player move through single portal teleports successfully~~
☑ ~~test player move through multiple portals in chained reaction successfully~~
☑ ~~test player blocked by two boulders~~
☑ ~~test player blocked by boulder & wall -> like player | boulder | wall~~
☑ ~~test player cannot move with one boulder and one locked door in a line~~
2. Interface methods (success and exception conditions) (10 marks)
☑ ~~newGame dungeonName is not a dungeon that exists~~
☑ ~~newGame configName is not a configuration that exists~~
☑ ~~player destroy spawner exceptions~~
☑ ~~player bribe mercenary exceptions~~
☑ ~~build exceptions~~
☑ ~~build shield~~
☑ ~~build bow~~
☑ ~~build both shield and bow~~
3. Boulders (10 marks)
☑ ~~player can push single boulder~~
☑ ~~player cannot two boulders in a line~~
☑ ~~boulder on switch activates switch~~
4. Doors & Keys (20 marks)
☑ ~~player can pick up a key~~
☑ ~~player cannot pick up other key with one key already in inventory~~
☑ ~~player can open door with corresponding key~~
☑ ~~player can pass through open doors~~
5. Buildables (10 marks)
☑ ~~build shield~~
☑ ~~build bow~~
☑ ~~build both~~

6. Potions (20 marks)
- ☑ ~~test entity response for potions created correctly~~
- ☑ ~~test player can pick up an invincibility potion~~
- ☑ ~~test player can pick up two potions to the inventory~~
- ☑ ~~test player can consume the potion the next tick after collect to inventory~~
- ☑ ~~test player can consume the potion at any tick~~
- ☑ ~~test player can consume multiple potions with effect queuing~~

7. Portals (20 marks)
- ☑ ~~player can teleport through portal~~
- ☑ ~~player can telepor through chained portal~~
- ☑ ~~player cannot teleport due to movement constraint e.g. wall blocking other side of the portal~~

8. Bombs (20 marks)
- ☑ ~~one bomb explode~~
- ☑ ~~bomb do not explode if switch not triggered or not cardinally adjacent~~
- ☑ ~~two bombs explode by one triggered switch~~

9. Spiders (20 marks)
- ☑ ~~test spider move clockwise follow box tile~~
- ☑ ~~test spider traverse through walls, doors, switches, portals, exits~~
- ☑ ~~test spider reverse direction when encounter a boulder~~
- ☑ ~~test two boulders on spider's moving tile and spider change direction successfully~~
- ☑ ~~test if a spider is stuck between two boulders in its movement path, remain still~~
- ☑ ~~test if spider first move is boulder, stay still (until boulder removed)~~
- ☑ ~~test spider spawn at rate 1~~
- ☑ ~~test spider spawn at rate 2~~
- ☑ ~~test spider spawn at rate 10~~
- ☑ ~~test movement of spiders unaffected when player drinks invincibility potion~~

10. Zombies (15 marks)
- ☑ ~~test random spawn cardinally adjacent to the spawner~~
- ☑ ~~test spawn zombies at any random rate~~
- ☑ ~~test zombies movement constraints - blocked by walls~~
- ☑ ~~test zombies movement constraints - blocked by locked doors~~
- ☑ ~~test zombies not blocked by boulders and not push boulder (assumption)~~
- ☑ ~~test portals have no effect on zombies~~
- ☑ ~~test all the cardinally adjacent cells to spawner are walls not spawn any zombies~~
- ☑ ~~test zombie run away when player is invincible~~

11. Battles (40 marks)
- ☑ ~~default state~~
- ☑ ~~simple battle with one enemy (default state)~~
- ☑ ~~multiple battles with multiple enemies~~
- ☑ ~~test player dies correct behavior~~
- ☑ ~~test enemies die correct behavior~~
- ☑ ~~invincible state~~

- ☑ invisible state
- ☑ weapon bonus in battle
- ☑ shield multiplication effect in battle
- ☑ ally attack and health in battle
- ☑ different bonus together

12. Mercenaries (20 marks)

- ☑ test mercenary in vicious state move towards player
- ☑ test mercenary limited by the same movement constraints as the Player
- ☑ test mercenary bypass walls to reach player (move around walls)
- ☑ test mercenary run away from the Player when player is invincible
- ☑ test mercenary (whether bribed or not) spawn randomly when player is invisible
- ☑ test mercenary not within bribe radius throw InvalidActionException
- ☑ test not enough treasure to bribe throw InvalidActionException
- ☑ test bribed mercenary follow player when become ally
- ☑ test ally do not run away (still follow player) when player is invincible

13. Basic Goals (20 marks)

- ☑ test collect treasure goal
- ☑ test destroy enemy goal
- ☑ test trigger switches goal
- ☑ test find exit goal

14. Complex Goals (25 marks)

- ☑ compound goals AND
- ☑ compound goals OR
- ☑ compound goals ANR OR

15. Advanced Movement

- ☑ stuck for 2 ticks
- ☑ stuck for 0 ticks
- ☑ stuck for 4 ticks
- ☑ avoiding a swamp tile with a large movement factor

16. Assassin

- ☑ Hostile assassin follows player
- ☑ assassin is blocked by a wall
- ☑ assassin movement in complex map
- ☑ assassin runs away when player is invincible
- ☑ assassin movement when player is invisible - not in radius to see player
- ☑ assassin movement when player is invisible - in radius to see player
- ☑ assassin is not in bribe radius
- ☑ not enough treasure to bribe assassin
- ☑ assassin has bribe fail rate
- ☑ ally does not run away when player is invincible
- ☑ mind control assassin
- ☑ failing bribe, no refund

17. Hydra

- ☑ ~~Battle with Hydra - player loses~~
- ☑ ~~Battle with Hydra,- player wins~~

18. Sceptre and Midnight Armour

- ☑ ~~Build sceptre~~
- ☑ ~~Build armour~~
- ☑ ~~Check that not enough materials to build armour = exception thrown~~
- ☑ ~~Check that if there are zombies, we cannot build armour~~

19. Logic Switches

- ☑ ~~Can light up ORBulb~~
- ☑ ~~Activate wire~~
- ☑ ~~Open a switch door~~
- ☑ ~~Explode bomb~~
- ☑ ~~Circuit w/ two switches can light up a bulb~~
- ☑ ~~Test open a switch door~~
- ☑ ~~Test open a switch door with sun stone~~
- ☑ ~~Test a circuit with two switches, where one is activated by another switch~~

20. Persistence

- ☑ ~~Simple persistence test~~
- ☑ ~~Testing movement of spiders when reloaded~~
- ☑ ~~Goals in persistence is maintained~~
- ☑ ~~Spider spawns after persistence~~

21. Time Travel

- ☑ ~~Play for 5 ticks, then rewind~~
- ☑ ~~Play for 30 ticks, then go through a time travelling portal~~
- ☑ ~~Play for less than 30 ticks, then go through a time travelling portal~~
- ☑ ~~Play for more than 30 ticks, then go through a time travelling portal~~
- ☑ ~~Play for one tick, rewind 5 throws exception~~
- ☑ ~~Rewind with a negative tick throws exception~~

22. Sun Stone

- ☑ ~~Can pick up a sun stone~~
- ☑ ~~Sun stone can open doors~~
- ☑ ~~Build shield with sun stone~~
- ☑ ~~Check that sun stone counts as treasure~~