

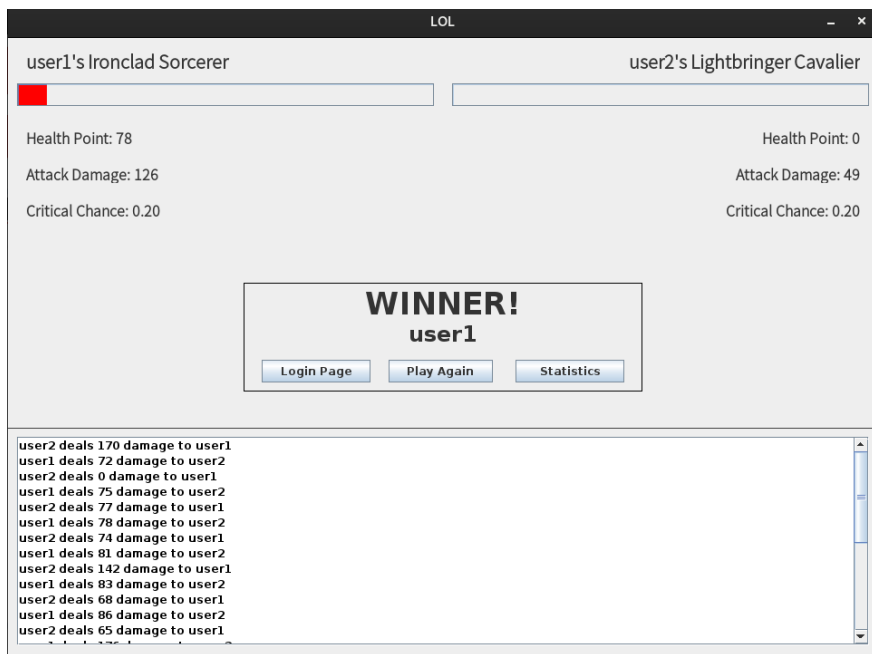
League of Legends

Final Project

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League of Legends

- LoL is a 2 player auto battler game where 2 people create their hero and let them fight.



How to play

- 1) 2 players enter their user-name
- 2) They creates their hero from Hero Selection Screen
- 3) And heroes they created fight until death

How Hero creation works

- There are 7 different heroes and 7 different origins in the pool.
- User asked to choose a hero and a origin from 4 different choices randomly coming from the pool.
- Each Hero and Origin has its own attack and defense strategies.
- Each Hero has AD(Attack Damage), HP(Health Point), CC(Critical Chance) and CD(Critical Damage)

Hero strategies

- **Cavalier (HP: 1200, AD: 85, CC: 20%, CD: 2):** Cavaliers take 20% less damage.
- **Assassin (HP: 750, AD: 120, CC: 30%, CD: 3):** Assassins deal 3x instead of 2x when they hit critical damage.
- **Knight (HP: 1200, AD: 90, CC: 20%, CD: 2):** Knights parry the whole damage with 5% chance. This chance increases by 1.3x every time they attacked.
- **God-King (HP: 1200, AD: 90, CC: 20%, CD: 2):** God-Kings executes the enemy while enemy has 25% Health Point.
- **Ranger (HP: 900, AD: 65, CC: 20%, CD: 2):** Rangers increases their Critical Chance by 1.4x every time they attack. If they have 100% Critical Chance, they increase their Critical Damage by 1.15x.
- **Sorcerer (HP: 1100, AD: 90, CC: 20%, CD: 2):** Sorcerers steal enemy's Attack Damage by 5% every time they attack.
- **Demilitionist (HP: 1100, AD: 65, CC: 20%, CD: 2):** Demolitionists deals extra damage (which is equal to 3x of their AD) every 1 of 3rd attack.

Origin strategies

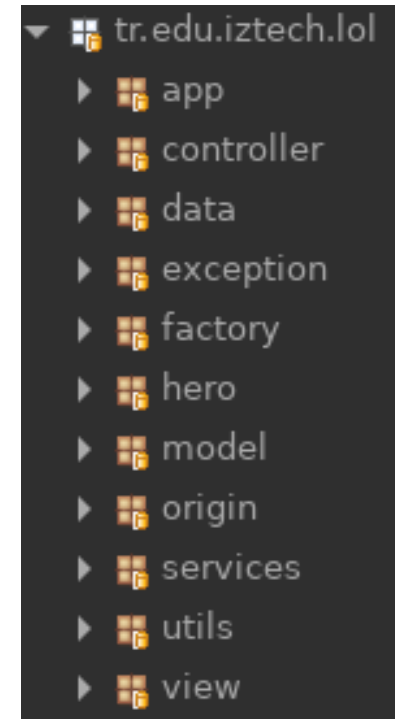
- **Dragonslayer:** Dragonslayers execute the enemy by 2% chance. This chance gets multiplied by 1.4x every time they attack.
- **Eternal:** Eternals refuse to die when they are below 0 health for the first time and revives back with 40% of his initial health.
- **Nightbringer:** Lightbringers deal 2 times more damage when they are on their 35% health.
- **Lightbringer:** Lightbringers take 2 times less damage when they are on their 35% health.
- **Ironclad:** Ironclads ignore the damage and get healed as much as damage by 12.5% chance.
- **Forgotten:** Forgottens deal 8% of their health.
- **Trickster:** Trickster gamble, and deal extra damage by his Attack Damage to enemy or himself with 50% chance.

Patterns we used

- **Strategy**
- **Abstract Factory**
- **Singleton**

How we implemented

- 97 classes and 4090 line of code.
- Abstract Factory and Strategy Patterns are combined to implement Heroes and Origins. This improves code re-usability, reduces complexity and class count from n^2 to $2n$.
- Singleton used for repository and database instances.
- Package Hierarchy:



THANKS FOR LISTENING!