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CS 1010 – Intro to Interactive Entertainment
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Module 8 – TIO: Design Discussion – Core Mechanics

1. Which of the five major types of mechanics will your game use, if any? Will your game use more than one of them? If it doesn't use any of them, what will the mechanics be like instead? – Physics and progression mechanics will be the primary mechanics used in *Shadow Realms*.
2. What entities and resources will be in the game? Which resources are made up of individual entities (such as a resource of airplanes consisting of individual planes that the computer can track separately) and which are described by mass nouns (such as water, which cannot be separated into discrete objects)? – Entities would be the player avatar, NPCs, enemies, and environmental objects. Resources would be energy absorbed that can be used for upgrades and currency for equipment.
3. What unique entities will be in the game? – The player's shadow form, magical artifacts that unlock abilities, and intractable lore items would be unique entities.
4. Which entities will actually include other entities as part of their definition? (Remember that an avatar may have an inventory, and an inventory contains objects.) – The player will have an inventory that can be considered an entity which includes equipment and collected items like potions, keys, and other consumable and key items.
5. What attributes describe each of the entities that you have identified? Which attributes are numeric and which are symbolic? – Consumables would be numeric, such as 3 potions that when used restore 50 HP each. Equipment would be symbolic relationships such as equipped or stored.
6. Which entities and resources will be tangible, and which will be intangible? Will any of them change from one state to another, like the resources in *Age of Empires*? – Items like potions are tangible, while shadow energy may change states based on player actions.
7. What mechanics govern the relationships among the entities? Remember that any symbolic entity requires mechanics that determine how it can get into each of its possible states and how other entities interact with each possible state. Which entities have their own mechanics connected only with themselves? – Mechanics that govern the relationship among the entities would primarily be proximity triggers for interaction, combat, and collection.
8. Are there any global mechanics in the game? What mechanic governs the way the game changes from mode to mode? – Global mechanics govern transitions between exploration, combat, and puzzle-solving, using abilities like the shadow form to alter the game state.
9. For each entity and resource, does it come into the game world at a source, or does it start off in a game world that does not provide a source for additional entities or resources? If it does come in at

a source, what mechanics control the production rate of the source? – Most resources are found in the environment or dropped by enemies. Mechanics like cooldowns or energy limits regulate replenishment.

10. For each entity and resource, does it go out of the game world at a drain, or does it all remain in the game world and never leave? If it does go out at a drain, what conditions cause it to drain? – Resources like health and shadow energy deplete in combat or ability use. Loss occurs under conditions like damage or environmental hazards.
11. What conversion processes exist in your world? What trader processes exist? Do any feedback loops or mutual dependencies exist? What means have you provided to break or prevent deadlocks? – Resources may be sold and traded for other resources or consumables. There are not any direct feedback loops or mutual dependencies outside of this that I've recognized.
12. Can your game get into a state of equilibrium? Static or dynamic? Does it include any form of decay or entropy that prevents states of equilibrium from forming? – Perhaps this game could be considered to have a dynamic equilibrium as shadow energy regenerates over time, but increasing difficulty (entropy) prevents stasis.
13. How do mechanics create active challenges? Do you need to establish any mechanics to detect if a challenge has been surmounted? – Mechanics like time-limited puzzles or combat waves create challenges. Success is detected by triggers, such as clearing enemies or activating switches.
14. How do mechanics implement actions? For each action that may arrive from the user interface, how do the core mechanics react? – Core mechanics react to inputs by triggering abilities (e.g. a button press for shadow form initiates traveling through the environment or combat actions).
15. For autonomous entities such as non-player characters, what mechanics control their behavior? What mechanics define their AI? – NPC behavior follows AI patterns based on roles. Enemies will patrol or attack, while friendly NPCs offer quests or guidance. AI adapts to player actions within predefined logic.