DARK RISING

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Gray italics means it is a stretch goal.

High Concept
DARK RISING is a 2-D top-down shooter about building a base to defend from endless zombie hordes.

Summary
DARK RISING is a 2-D, top-down arcade shooter, zombie survival game where the player can build a base and defensive systems to defend from the swarms of zombies that come out at night. Using a grid system, the player can place barricades traps and launchers to deal with the zombies. The player can recruit survivors, tell them where to stand and *change what kind of gun to use*. The player can construct launchers like the chum launcher which attracts zombies to a certain point, or the explosive barrel launcher which kills zombies but will also blow up their own buildings. The player will have to manually aim and fire these launchers.

There is a day to night cycle in DARK RISING, at night the player will build defenses, command other survivors, fire launchers at the zombie hordes and do everything in their power to survive until morning. When morning arrives, the player leaves their base and goes out into the open to find more resources and survivors so they can beef up their base defenses. Resources are randomly spread across the map each morning, all the player will have to do is walk on top of a resource or a survivor and it will automatically teleport to their base. While the player is out in the open world looking for resources and survivors, there will be some zombies attacking the player (not nearly as much as at night) to defeat these daytime zombies away from their base the player will have to out maneuver and shoot the zombies going after them. *Their character will be equipped with 3 weapons*, a shotgun that knocks zombies back, a sniper that penetrates multiple zombies, and a machine gun with a fast rate of fire and consistent damage.

Each day and night will last around 2 minutes each. As it turns to night, the map will get darker and the player won't be able to see as well, only the area around the player's headquarters building will be visible. After each night, the zombie waves will keep getting exponentially stronger and larger until the player's defenses are obliterated and their headquarters fall. The longer a player's headquarters survives, the higher the score. If the player character dies the game doesn't end, the player simply takes a significant resource penalty. There will be two basic zombie types, fast zombies that outrun the player but have little health, and slower zombies with more health. *There will also be different kinds of special zombies that occur in later waves, zombies that climb barricades, and exploding zombies that obliterate structures.*

Story
No story, we leave the exposition to the player's imagination.

Game Flow

The player starts the game standing next to their headquarters during the night time, they can only see a certain distance around their headquarters building and the rest is darkness. Then out of this darkness, zombies appear and we will tell the player how to move and shoot to defend themselves.   The surrounding darkness will force the player to stick close to their headquarters and defend it as they get used to moving and shooting with their character. Tutorials and tips will be kept to a minimum while we hook the player's attention by having them defend their base alone from the zombies appearing out of the darkness. After about 30 seconds, the sun rises, the darkness fades and the zombies become less frequent. Now we direct the player to leave their headquarters to find resources out in the rest of the open map.

As the player goes out exploring the open, they will run into more zombies that they have to deal with. The player will have to figure out how to maneuver through the enemies and figure out which zombies to target first. The fast zombie types will move faster than the player so the player learns to target these enemies first. The player will soon come across building supplies and survivors, when they pick up these resources we will explain what they do. The player will want to explore as much of map as they can during the daytime so they can get as much resources as possible. In order to travel to as much of the map as possible, the players will have to become skilled at out maneuvering zombies without backtracking in the direction they just came from. This creates a risk-reward mechanic that motivates the player to try and go through the middle of the zombie hordes instead of just running away and shooting from a safe distance.

After about 2 minutes of running around in the open map finding resources and maneuvering through zombies, night will arrive, the map will become darker and the player will be directed back to their base. We tell the player that they can build defenses by opening the build menu (pressing space). The player notices that time has stopped when they opened the build menu and they realize they have all the time in the world to plan where to place their defenses, so their brains switch from a frantic go-go-go mindset and into strategic planning mode. The player notices all the possible structures that they could place appear on the sides of the screen. The builds are classified into certain categories, and we only show one category at a time to make sure that the player isn't overwhelmed with information.   The player gets a general idea in mind and they start to implement that defense, they don't have to worry about placing something in the wrong place because they can remove structures and get a full building supply refund, so defenses can be moved around easily. The player places their defenses, leaves the build menu and starts another night of desperate survival. As the game progresses, the player becomes more skilled at both the daytime resource gathering and defending their base at night. They learn tricks to exploit the zombies by organizing barricades and traps to get the zombies to where they want them to be. They learn how to use the different gun types of the survivors carry (shotguns, snipers and machine guns). They learn how to use the chum launcher to attract zombies to where they want, and they learn how to use the explosive barrel launcher to blow up zombies that aren't near their structures. The many different possibilities of base designing allows the player to experiment and try many different ways to handle different zombie types they have to deal with, so many players will replay the game to try out new strategies and try to get a higher score.

Mechanics
Basics
- The objective of the game is to keep their headquarters alive for as long as possible, the longer it stays alive, the higher the score. The headquarters will always fall eventually.
- During the day, zombies will attack the player if they get within a certain range. At night, a bunch of zombies will spawn all around the map and head towards the player's base.
- The map will be on a day-night cycle, the night will make the map darker. Around the headquarters building there will be a light during the night.

Friendlies
- The player damages zombies primarily by shooting, this gun will be able to be upgraded so one shot can go through multiple zombies, and so skilled players will take advantage of that. The player can also upgrade their gun to do more damage per hit, *or have a faster rate of fire too.* When the player dies, he teleports back to base and is penalized a certain amount of resources (ammo and building supplies)
- Survivors that stay at the player's base will shoot zombies that come with their attack range *and the player will be able to upgrade these survivors damage in different ways (increase amount of zombies a bullet goes through, or increase damage dealt per zombie hit).* When the player initially saves the survivor out in the world, they are teleported to the base. The player can move the survivor around in the base by dragging and dropping them with the right mouse click.

Zombies
- Zombies deal damage by melee attacks, a zombie will kill a survivor with 1 hit (so keep them protected with barricades). The player is more resilient and can survive around 5 hits from a zombie; however the player is slowed significantly while being hit by a zombie, so if the player is out of ammo and defenseless a zombie will just keep hitting him until the player is dead.
- *Other special zombies can throw slime balls, explode, call in reinforcements, or stun humans with screeches.*

Building
- All buildings will be built using a tile map system, each barricade and trap takes up one building tile space, *any larger buildings will take up more.*
- All buildings are built from the build screen, player activates build screen by clicking on the build icon on the top left of their HUD (or pressing a hotkey) while within range of their headquarters building. *Time stops while in the build menu, so the player can take their time planning what they want to do without worrying about night time approaching.*
- The player can only build things within a certain range of their headquarters, which they place at the beginning of the game, and buildings will only be constructed when there are no zombies within range. All buildings planned in the build screen will be erected immediately after the player exits the build screen.
- Barricades are barricades that can be torn down by zombies if zombies do enough damage to it. Zombies will have path finding AI that allows them to go around these barricades if it's more effective, zombie's only attack barricades if their target is blocked off and the way around is a long way. These barricades will have slowly regenerating health, so player doesn't have to worry about repairing any slightly damaged barricades. However, the player will have to rebuild any barricades that are destroyed by zombies.
- The spike pit trap will automatically kill any zombies that go into the tile it is built on and has no expiration time limit, however the spike trap will go away after it has killed a certain amount of zombies (about 10).

- The fire pit trap will deal damage over time as long as a zombie is on top of the tile, there is no limit to how many zombies can be affected by the fire pit, there will be a time limit so the fire pit goes away a certain time after it has been placed.

**Characters**
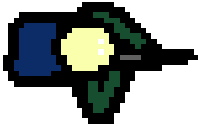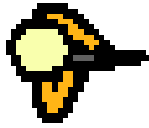
Player   *Survivor*

- Player character – *can switch between 3 guns, shotgun, machine gun, and sniper.* The player stays in control of this character with the camera centered on it at all times, except when in the build menu. If the player dies with this character, a penalty is taken from their supply resources and they respawn back at their headquarters building.
- Survivors – They stay near the base at all times, the player can direct them where to stand in the base to best defend it. They will only move to where the player tells them, even if zombies are hitting them they will just stand there and shoot, unless the player tells them to move. They basically act as turrets that the player can move around whenever they want. *They can also switch between shotgun, machinegun or a sniper weapon.*

- *Chum Launcher – a catapult that shoots guts and brains that the zombies will chase after. It will leave a pile of chum on a location on the map and stay there until a time limit is reached or if zombies eat it all. If used smartly it can buy valuable time for players, or the player could use it just before the barrel launcher for effective results. These launchers don't shoot automatically, the player goes up to them and presses Q to get in them and then manually aims and shoots them.*
- *Barrel Launcher – an explosive barrel catapult that the player can enter and shoot where they want. It will cause an explosion that kills zombies, but will also blow up any structures, so the player will want to use it away from their buildings. Each shot takes about 30 seconds to recharge, so the player will exit the launcher after they use it once and do other things until it has recharged.*
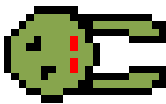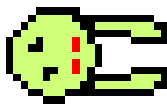
Lumbering Zombie   *Sprinting Zombie*

- Lumbering zombie – makes up the bulk of the zombie attack force, they move slightly slower than the player does and they have a medium amount of health. They attack with melee and as time goes on they get progressively stronger and more numerous.
- Sprinting zombie – not quite as abundant as the lumbering zombie, but there are still a decent amount of them. These guys move faster than the player character and therefore present a major threat during the daytime when the player isn't protected by barricades. They have lower health than lumbering zombies.
- *Exploding zombies – will explode for massive area damage on the first building or barricade it encounters, this explosion also kills other zombies in the blast radius. They have very little health*

so the player will want to target and kill these guys and make them explode before they get too close.

- *Zombie bosses – tons of health, very slow, deal lots of melee damage.*

Resources

Building supplies coin

Survivor coin

- There are 2 resources the player can find lying around the map, building supplies and survivors. These resources are randomly placed every morning. The player collects these resources by simply walking over a coin they find, and depending on which coin it is, they will either get more building supplies or another survivor will appear at their base.
- Building supplies are the sole resource used for buying any building, trap, or barricade in the build menu *and it is also used for buying upgrades for their character or defensive buildings or survivors.*
- Survivors, the player find these guys out in the world during the day (usually trapped by a large zombie horde), rescue them, then they teleport straight to their base and stay there shooting any zombies that get within range of them until they are killed or the game ends. The player can tell them exactly where to stand in their base by using the build menu. They are basically organic turrets that the player can move around.

Environment

There will be natural terrain in levels that units can't move over, so the player can use that to their advantage if they wanted to. There will be a day-night cycle and the color theme of the background map will put an emphasis on light during the day and darkness at night.

Controls

Character controls-

- WASD to move
- Mouse to aim, left mouse click to shoot.
- The player can drag and drop other survivors with the right mouse click and the survivors will walk to that area.
- *Mouse scroll to switch weapons.*
- *The player enters launchers with "Q" and uses the mouse to aim and fire them.*

Building menu controls

- Open the build menu by pressing space while within range of their headquarters building.
- Use the left mouse to select and place structures when the build menu is open
- Build menu will be intuitive, different building categories will appear when the mouse cursor is placed over a certain area and be minimized when the mouse cursor leaves that area.
- The player selects a structure to build by clicking the left mouse, they place it by clicking the left mouse again over a location.

Visuals

This game will have simple, stylized visuals. Structures, survivors and zombies will be simplistic so the player doesn't get sensory overload when hordes of zombies start swarming, all the survivors are shooting, and things are being destroyed. This game is a little on the complicated side, so visually we will try to make the game as non-threatening and approachable as possible. All the zombies and survivors are the tops of heads with arms sticking out, so there will be very little (if any) animation for them. The background theme will progressively change to reflect the day to night cycle. There will be a cloud of smoke animation whenever a barricade or building is torn down.

Audio

No character dialogue sounds. There will be sounds for zombie hits, shooting, explosions, destroyed structures, some sort of ominous alarm to warn of an incoming night attack wave. There will be a lot of things going on at once in this game, so to prevent sensory overload, sound volume will be adjusted significantly given how far away the action is from the player.

AI Behavior

Zombies will have grid based A* path finding to find their way around the barricades built by the player. Zombies will first find a target to go after by finding the closest target to attack (the player, survivors and buildings). After they find a target they will calculate the best way to get there using a grid A* path finding algorithm. Grid blocks with a trap or barricade on it will have a higher path finding movement cost to go over them, so zombies will avoid these and go around them if possible. Zombies aren't that smart though, they will only avoid obstacles to a certain extent.

Other survivors the player recruit for their base will not move unless the player explicitly tells them to, they will have to have similar path finding AI as the zombies so that they can move around barricades and traps in order to go to the grid position that the player commands. Survivors will also have to have AI that tells them which zombies to shoot at, they will only shoot at zombies within their attack range and the closest zombie will have priority.

Physics

Not much physics involved in this top-down 2-D shooter. We will have to have collision between bullets and zombies. Zombies will also have to have collision with barricades, traps, survivors and the player. *Shotguns will also knock zombies back a little.*

Multiplayer

None.

Miscellaneous

None.