Stopwatch, General Design Document

Mechanics

1. Game Mechanics
   1. New game
      1. New game starts player at the top of the building beside the bomb.
      2. Bomb displays 00:10.
      3. Beside player on other side is the stopwatch.
      4. Interacting with stopwatch starts game, player animation proceeds down stairwell into floor 1.
      5. (for discussion with producers) Player can either be given a running start in which the timer arms with a countdown to ensure player is ready, or player can be dropped in from ceiling to begin stage
         1. Advantages of running start is that player is given starting momentum to maintain game pacing
         2. Momentum can be retained by player for good performance.
         3. Requires introductory hallway for most stages, (3-4 second pre-floor cutscene)
      6. Timer hitting 0 ends game
         1. Building is seen in a flash of light, explosion levels city
         2. Final score given, time (main menu currency) rewarded depending on performance
         3. Unlocks given based on time won over all games.
      7. Time resets to 10s after every floor (if not using the Elevator Cut)
      8. Stopwatch can be upgraded to influence time more effectively
   2. Permanent Rewards
      1. Points earned after death (or completion) are saved, added to a master time bank.  Milestones unlock permanent features of the game (palette swaps, shaders, enemies, new setpieces), and time can be ‘spent’ on main menu for new characters, knives, etc.
2. Movement
   1. Running
      1. Character must be able to run in either direction
      2. Character does not immediately stop when told to stop or switch directions (slight slide, see mechanics of similar games)
      3. Character has proper floor detection with running, does not collide into walls.
      4. Character has slight acceleration from standstill, not immediately attaining run speed
      5. Character slowly builds momentum, having a top run threshold which takes a few seconds/second to attain (emphasizing importance of not losing momentum)
   2. Jumping
      1. Character can jump singularly
      2. Character can change direction slightly in air to correct for trajectory
      3. Character can double jump (assuming this is the character’s primary ability
      4. Character can wall jump off vertical surfaces
      5. Character fall speed is affected by time flow.  Jump height is not increased on time slowdown, but fall velocity is.
   3. Falling
      1. Falling is affected by gravity
      2. Falling from a large height causes character to roll, preserves momentum.
      3. Falling is affected by Time flow.  Falling is slower on ALL objects when time flow is reduced.  However this time flow does not affect horizontal motion.
      4. Down + jump causes players to fall through certain platforms if desired.
   4. Ending Fire Escape
      1. Player must shatter through window to complete stage.

E. TimePhase

* + - 1. Using the timespace trigger phases you into a tangential dimension (slightly different colors)
      2. Timespace makes you immune to slight enemies
      3. Lasts a very very short time. (might be upgradable)
      4. Can phase with particular objects and barriers.
      5. Time still passes in phase dimension.
    1. Serves as a quick stationary dodge to avoid certain elements.

1. Time Mechanics
   1. Slow Down
      1. Time can be slowed down by player by pressing and holding a particular key (TBD)
      2. TIme slowdown affects all movement except knife throwing movement pre-enemy collision, player lateral motion, and upward jumping.
      3. Once a player begins to fall after the apex of the jump, time reduces gravity effect (slowfall)
      4. Knife is affected by time once it hits another enemy (freezing it impaling an enemy mid kill animation), (eliminated by chain upgrade)
      5. Time slows all enemy movement and projectiles
      6. Time slows all environment hazards (lazers, spiketraps, etc)
      7. Time slows all environment pieces where relevant (rain, flying cars, wind, etc) to give the impression of time slowdown.
      8. Slowdown is based on meter which recharges when not used.
         1. Slowdown expires when meter runs out, time returns to normal
   2. Slowdown Meter
      1. Players given a finite meter of slowdown time (stamina bar)
      2. Can be extended with watch upgrade
      3. Holding button (TBD) triggers slowdown
      4. Releasing button returns normal time flow
      5. Dashing uses stamina in meter, disallowing spamming of mechanic, causing player to use dashing and slowdown strategically when used together.
2. Combat Mechanics
   1. TimePhase
      1. Using the timespace trigger phases you into a tangential dimension (slightly different colors)
      2. Timespace makes you immune to slight enemies
      3. Lasts a very very short time. (might be upgradable)
      4. Can phase with particular objects and barriers.
      5. Time still passes in phase dimension.
      6. Serves as a quick stationary dodge to avoid certain elements.
   2. Knife
      1. Players are given a knife which can be upgraded
      2. Can Slash with knife
         1. Range can be increased to make closer to sword slash
      3. Can throw Knife
         1. Ranged attack, player must retrieve knife before using again for slashing or throwing
         2. Chain upgrade eliminates need for manual retrieval
      4. Knife can be upgraded
      5. Players can unlock multiple knives with slightly different abilities
         1. (TBD which new abilities those are)
   3. Bulletcutter
      1. Slashing a time-slow projectile redirects it back at its source
         1. Can be used to kill enemies
         2. Requires precise timing.  Missing simply destroys projectile.
         3. When slowed, holding the melee button creates a focus ring on the nearest projectile, when focus ring flashes, releasing melee will slash bullet and change its direction.
         4. Can reflect knives and lobbed objects.
3. Enemy Mechanics
   1. Stage enemies
      1. Infantry (Basic enemy)
         1. Can patrol slightly
         2. Confined to the plane they are standing on (no jumping)
         3. Enemies and movement effected by time
         4. Can be killed with player knife or dash
         5. Player Takes Damage on contact with enemy or bullet (when not dashing)
         6. (edit) shock baton (melee with range)
      2. Riot Merc (intermediate enemy)
         1. Shielded Enemy (directional)
         2. Must be evaded or phased under and slashed from the rear to kill
         3. Have base enemy ai, slightly slower.
      3. (Stretch) Time Mimic (advanced enemy)
         1. Tracks players movements from X seconds prior, pursue player in exact path player took.
         2. Player takes damage on collision with enemy
         3. Treated as the player’s shadow, force player to not backtrack to same location with punishment of damage.
         4. Requires players to plan routes.
         5. Can set off traps (must be killed by traps)
         6. Dodging eliminates damage take.
         7. NOT affected by time slowdown (mimic exact player movements)
      4. Assassin (advanced enemy)
         1. Can run and move like player
         2. Have knife equipped
         3. Will throw knife if in LOS
         4. Knife can be reflected using bullet cutter
4. Stage Design Mechanics
   1. Skyscraper
      1. Players start at top floor
      2. Each floor is considered a stage
      3. Boss-like challenges presented every 5th floor (increasing difficulty)
      4. Difficulty increases the closer the player works toward the ground floor.
      5. FInal stage of the playthrough occurs at ground floor.
   2. Floors
      1. Each floor is linearly designed based on pre assembled ‘set pieces’
         1. Set pieces consist of individual tilesets/challenges of a stage which can be assembled in various orders to create unique stages, rather than procedurally generate the entire stage.
         2. Set pieces are given a difficulty rating depending on how late in the game they would appear
         3. Pieces would be assembled based on this rating, which relates to floor level. Some setpieces would be considered more difficult in a floor and thus would appear less or appear closer to every 5th floor.
         4. Each setpiece would be tested to ensure it would work cohesively with other setpieces (to eliminate dead ends)
         5. Levels would track how many times a particular setpiece appears in a stage to avoid repetitive elements.
         6. Creates the mechanic of speedrunning via pattern recognition, rather than entire stage memorization, in which a player has to learn each piece individually and chain them together using knowledge gained from experience.
      2. Set Pieces
         1. Platforming Pieces
         2. Traps
            1. Spikefalls
            2. Laser traps
            3. Minefields
            4. Null Fields (places where time slowdowns do not work)
            5. Timed Doors
            6. Stealth corridors (spotlights which if triggered activate turrets/lasers in a room)
         3. Portals (in one end and out the other
         4. Turret Halls
         5. Enemy setpieces
         6. Elevator Cuts (see further sections)
         7. Shatter Window (exit)
      3. Elevator Cut
         1. Rare spawning elevator that can appear in certain levels if criteria are met (RNG, player task, etc).
         2. Elevator connects lower floors (can even bypass boss challenges)
         3. RISKY (time does not reset back to 10 if taken), more enemies
         4. Potential for hidden unlocks
         5. Reduces overall game time, best speed runs will require Elevator Cuts.
   3. Rooftop
      1. Serves as the main menu/start of game
      2. On main menu, player appears on the top of the skyscraper with an inactive 00:10 bomb, the other playable characters to select lounging about, settings menu access, knife collection, and the game start, which is accessed by navigating to the stairwell.
      3. On GAME START, player wakes up on the same rooftop as mentioned in overview.
   4. Ground Floor
      1. Final game stage
      2. Reveals game overarching antagonist and player’s function in plot.
      3. Hardest challenge in game (whether platforming or boss), game climax.
      4. Beating ground floor completes Stopwatch
   5. Additional Skyscrapers
      1. Potential addition for taller skyscrapers with different building types (hotel, bank, etc) with a different number of floors
      2. Serves for advanced difficulties.
   6. Daily Runs (from seeded skyscrapers)
      1. Using a leaderboard, daily skyscrapers can be created using a set seed, in which players compete for the best (lowest) overall time for completion, or best floor reached.
5. Environment Mechanics
   1. Time slows down other aesthetic objects in environment.  This can also include ventilation fans in the Elevator Sections.
6. Upgrade Mechanics
   1. After every stage, the player is given the option to upgrade the stopwatch
      1. Can Increase time given from kills
      2. Can increase Stamina Meter
      3. Can increase effectiveness of time slow (to almost standstill)
   2. Upgrades are chosen based on player wants, allows for different playstyles.
   3. Knife Can be upgraded
      1. Stage 1 upgrade (for a set cost) allows for range increase or enhancement of base mechanic (if different knife is selected)
      2. Stage 2 upgrade (for a set cost) enhances the secondary mechanic of the knife.  The default knife is given a chain, no longer requiring a player to manually retrieve the knife.
7. Multiple Characters (stretch goal)
   1. Primary Character - (name TBD but most likely the color corresponding to the default character)
      1. Has quickstrafe dash as the ability, allowing attacks via strafing (normally just a dodge roll for other characters).
   2. Yellow - Triple Jump Ability (third jump expends some stamina)
   3. Cyan - TimeKiller - can slash at multiple bullets for redirection simultaneously using a single button press (uses large portion of stamina gauge), timing not a required element to execute properly.
8. Multiple Knives (stretch goal)
   1. Default - Pocket Knife (no passive)
      1. Increased Range
      2. Throwable
   2. Butterfly (passive, faster slash speed)
      1. Range increase
      2. Radial slash (slashes around the character in all directions)
   3. Karambit (passive, larger window to use BulletCutter)
      1. Range increase
      2. Wall latching (allows player to stand on walls temporarily and jump again (climbing tool).
   4. Occam’s Razor (final unlock) (passive, increases setpiece difficulty tier by 1 per floor (considered hardmode but allows for the best speed run)).
      1. Increased range
      2. On slash kill, time is slowed in addition to gaining the kill bonus.
9. Multiple Towers (stretch goal)
   1. Default tower has 25 floors
   2. Extended towers can have 50, 75, and even 100 floors (marathon)
   3. Only do if base goal is met (unlocked from main menu)

Environment

1. Environment Art
   1. Streamlined, but contains elements which can be seen to slow down if triggered by player
2. Environment Style
   1. Minimalist
   2. Cyberpunk influence
   3. Night + rain
   4. Stage background + music changes every 5th floor
3. Mood
   1. Efficient
   2. Bleek (see blade runner)
   3. Not hyperfuturistic, but future to the point where it’s still feasible from the player
   4. Bold color design (neon colors) but easy differentiation between elements in gameplay. SHOULD BE COLORBLIND SUPPORTIVE FROM GETGO

Art Design

1. Art Style
   1. Depending on what the team’s strengths are, 2d or 3d, but MUST be sidescroller
   2. Cyberpunk future (with superhot influence maybe)?
   3. Keep it simple while maintaining the theme! Don’t need much to get the feeling across (large black ominous buildings, glow, rain, tiny lights in sky for flying cars, etc)
2. Art complimenting gameplay (playing toward team strengths)
   1. Gameplay is primary focus, art must complement the streamlined nature of the game as to not be too distracting, and emphasizing goal of get to the end.
   2. Entire game can be textureless if light ambience is done right.  Superhot has no texture work at all.
3. User Interface
   1. MINIMALIST, timer in bottom, stopwatch on side w stamina bar, that is IT.
   2. No HP, no ammo, just time.
   3. Timer rotates with time regain, loss, slow
   4. I would prefer we keep the iconic pixel stopwatch as in the logo
4. Character Design
   1. Single color characters (neon colors)
   2. Meant to be nameless faces with different abilities (hence their names being only their color)
   3. Importance exposed in gameplay with small dialog quips between 5th floors.  Fully exposed at end
5. Enemy Design
   1. Single color (red preferably, can be changed with palette swaps)
   2. Simple, bold, effective.
6. Weapon Design
   1. Minimalist, more modern design (guns, kinetic weapons, knives etc)
7. Building Appearance
   1. Can be futuristic, but dark blocky sleek objects against the dark sky.
8. Menu Appearance
   1. Pre-game menu is interactive on rooftop, player walks to select options.
   2. In game pause menu to simulate pressing ‘pause’ on the stopwatch
   3. Character select involves simply slashing over a different character model on the rooftop (wherever they are lounging)
   4. Weapon menu cycles through knives (rotating wheel above character’s head, slashing selects new knife)
   5. Purchasing can be as easy as pressing enter over new purchasable item
   6. Bomb interaction shows amount of saved time points, stats, unlocks, etc.

Sound Design

1. Sound FX design
   1. Dan has a large library of sound files from the UCCS film dept and royalty free ones to help supplement sound team
   2. Effective impactful sound design (jarring where necessary)
   3. Slowdowns also affect time, immersion
2. Music Design
   1. Old school Drum and Bass (seba, alaska, bachelors of science, etc.)
   2. 8-9 music tracks + menu, boss challenge, ending, credits (which double as game theme).  See flywrench OST for suitable examples of music.
3. Voice Design (currently not available) - as of right now no voice work will be required for game.

Story Design

1. Player wakes up on rooftop with 0 exposition as to what has occurred
2. Player allowed to jump and interact freely on top of building until interaction with stopwatch, which triggers game, allows player to compose themselves.
3. Time is frozen, bomb locked at 00:10, touching mysterious stopwatch beside player activates time, starts bomb counter.
4. Discovered Terrorist/mysterious organization has taken over the building and planted the bomb on the top in an attempt to blow up the city in which the player interacts.  It is assumed that with 10 seconds left on the timer, that the members of this organization are willing to die in the explosion in order to ensure the building is secure.
5. Discovered that the stopwatch is connected to the bomb detonator and that interacting with the watch to slow or pause time does the same for the bomb.  However the flow of time is dictated by the stopwatch.  It is implied that only 10 seconds pass for the entire universe in the game, despite the player’s character experiencing far more than 10 seconds.  This is the only character in the game to experience time for more than 10 seconds besides certain bosses.
6. Player attempts to flee using stopwatch to control countdown and buy enough time to stop the bomb and the organization occupying the building.
7. INTERFACE SHOWS PLAYER MOVING TO PENTHOUSE WITH ELEVATOR LIKE MINIMALISTIC CUTSCENE OF A BUILDING SHAPE, WITH A RED BAR RESEMBLING THE LOCATION OF THE PLAYER.  EVERY FLOOR BAR SCROLLS DOWN WITH FLOOR # DISPLAYED BESIDE

7.  Player is fed tiny bits of plot through dialog between characters and challenges/bosses, implying that other entities in the tower are fully aware the player forgot why they were there and that the stopwatch is capable of time manipulation.

8.  Organization sends time mimics to stop player.  It is evident that the organization is aware of the time mechanic and actively uses it to their own advantage.

9.  Upon reaching a particular point in the game, it is discovered that the player is infact the person who started the bomb entirely (against their will) for the organization, and the stopwatch was designed to let the user escape the blast radius in time.  This watch was supposed to be in possession of Crimson, the organization leader, to escape in time to repeat the bombing in another city.  However the player’s character stole the watch, consumed an amnesiac, and paused the watch upon consumption with the initial intent of stopping the bomb upon awaking and, if failing, being able to die without the guilt of committing the bombing themselves.  Thus the player entrusted their future counterpart to successfully stop the bomb.

10. Upon encountering Crimson, it is also discovered that the Stopwatch, if shattered within the last millisecond if its countdown, would freeze time permanently for the bomb and the last person to interact with the watch.  This proves to be the only method of properly diffusing the bomb.  Therefore the player in the final moments of the ground floor battle, throws the watch into the path of the bullet using the bulletcutter technique taught to the player earlier in the game.  The watch collides with the bullet, effectively freezing time in place for the player for all eternity, but also freezing the bomb.  The bullet in real time was deflected using the Bulletcutter technique and kills Crimson in real time outside the perception of the player.  The player then stumbles back to the top of the building, to find the bomb frozen at 00:00:01, time permanently frozen.  The player, having saved the city, is also forced with the realization that they are forever trapped in their own parallel universe of frozen time while the rest of the universe moves on safely  with the bomb defused.  The game cuts to black once the player makes the choice to either return down the stairwell (typical ending) or throwing themselves from the rooftop, each resulting in a unique achievement upon completion.

Ending is designed to be melancholy, as the player is a hero, but is punished cruelly for it, with no one knowing of their actions (with the rest of the universe only experiencing 10 seconds of time while the player’s character has experienced far more).

Rooms are 16 blocks high with character size being 2.

Jump starts at 4, goes to 8.

Acceleration speeds (3+ blocks

Future features (potential)

Rare Floors

* black out floor - no lights in building, city illuminates through window, occasional chopper lights up room with light pass.
* Construction floor - stage is far more open, (need to find which variance works)

For Dan:

**Development Backlog:**

~~Character run left~~

~~Character run right~~

~~Character jump x 1~~

~~Character collide with floor~~

Character collide with all

~~Character accelerates from momentum~~

~~Character can swipe (slash)~~

~~Character can attack enemies~~

~~Character loses momentum on enemy contact~~

~~Enemies collide with floor and character~~

Enemy dies from thrown knife

Debug Base stage

--

(Easy)

Debug Stage for testing new features (testing function and flow)

* Player
  + Put player in level
* Platforming
  + Create level portion for testing platforming
* Running
  + Create level portion for testing running speed up, slow down and turning
* Enemies
  + Place enemies in level
  + Create level portion for testing enemy movement
  + Create level portion for testing enemy attacking behavior
  + Create level portion for testing enemy death behavior

(Medium)

Player Jumping

* In air movement
  + Able to move freely but restricted movement speed
    - In Air Speed (3 blocks/s)
  + Jump speed cannot exceed movement speed (9 blocks/s)

(Medium)

Enemy AI

* Enemy movement (use path or check for ground underneath)
  + Create paths
  + Create ground check
  + Create movement in left direction
  + Create movement in right direction
* Infantry AI
  + Create check for player
  + Infantry attack animation
  + Infantry attack sound
  + Attack when player enters attack range (2 blocks)
  + Shield Bearer AI
  + Create shield object
  + Create shield “hit” sound
  + Deflects attacks in left direction
  + Deflects attacks in right direction

Advanced motion

--

(hard) Double Jump, wall jump.

Character can use the

Character can double jump

Character can throw knife

Thrown knife travels through air

Thrown knife rotates in air

Thrown knife can hit enemy

Knife stays in position where enemy died

Player can retrieve knife

Player cannot throw knife or slash if knife is not retrieved (if thrown = true)

Base enemy can patrol back and forth (set number of blocks)

Enemy can fire bullets at the position of the player

Bullets are objects that travel through air and are visible to player

Bullets cause player to lose momentum

Bullets disappear on floor/wall contact

Offscreen bullets are removed

Bullet impact creates small particle effect

Base Time Mechanic

--

Time slow effects player falling motion (slow to fraction of speed)

Time slow effects bullet motion

Time slow effects enemy motion

Time slow effects environment

Time slow does not affect player horizontal movement

Time slow does not affect knife throw before impact

Time slow slows enemy kill animation when knife hits

Bullet Cutter

--

Player can slow time (granted it works)

Player can slash a bullet in range

Bullet changes vector to return to sender

Player does not take damage from cut bullets

Bullet cut animation has small glimmer and sound for affirmation bullet has been returned

Projectile becomes player color

Projectile is now unable to damage player

Projectile moves toward appropriate enemy’s new position

Projectile kills appropriate enemy.

End Of Stage

--

Contacting window triggers small cutscene with player being thrown through window

* Time freezes similar to prototype trailer
* Glass breaks on window
* Shards are time effected, slow to a stop
* End of stage shows amount of kills, time used, current run time, spendable points gained from run
* Properly starts new stage

Timer element

--

Timer in UI given base time

Timer counts down

Timer slows based on time slow mechanic

Time is awarded from kills

Expired timer ends game

Time resets on new stage

UI stopwatch element moves hands in correspondence with time flow rate.

Adding time moves second hand back

Stamina Bar

--

TImeslow bar implemented

Timeslow bar appears in UI beside timer

Time slow bar decreases when slow button is pressed

Time slow ends when bar is depleted.

Bar recharges over time

Bar drains X amount on dash strafe

Player cannot dodge strafe on 0 stamina

Stopwatch Upgrade

--

Between levels stopwatch UI with bars appear

UI element for watch and bars

Clicking >  arrow beside upgrade row adds a red block in that row

Clicking < arrow reduces row by 1 red block

Row displays text of upgrade (text is animated)

Adding a red block spends X amount of points

Confirming selection turns all red blocks to blue, ensuring they’re permanent upgrades

Game variables are modified by the number of blocks in the row.

Time slow is improved by # of blocks in the time slow efficiency row.

Time Stamina is improved by the # of blocks in the time stamina row

Time reward is improved by the # of blocks in the reward row

Knife Upgrade

--

Knife upgrade UI displays on same screen as stopwatch upgrade

Knife upgrade contains only 2 checkboxes

Clicking checkboxes fill it with a red block

Clicking the x beside that row removes the red block

Clicking the first box subtracts (5) points from available to spend

Clicking first box ungreys the second box (initially greyed out until first box is filled)

Clicking second box subtracts (15) points from available to spend

Pressing confirm locks both boxes with white boxes in the place of the red ones

Upgrades are applied to knife.

(5) tier increases range by 2

(10) tier toggles variable for secondary ability)

Knife Secondary Ability

--

Knife has secondary attribute that is only active when the (10) tier is toggled.

Secondary main attribute adds chain to knife

* Throwing knife displays chain (gravity affected line) that drapes between knife and player.
* On knife kill, knife quickly returns to player (quarter second), knife visibly flies back to player
* If knife misses, when knife leaves screen or hits wall, knife returns to player.
* Only one knife can be thrown at once.

Different platforms

--

* Solid blocks are colliders in which player cannot pass through
* Bullets cannot pass thru
* Enemies cannot pass thru
* Lasers cannot pass thru
* Players can collide with walls and stop
* Players can walljump off solid blocks
* If a player is near the top of the platform, player parkours over the top of the block, maintaining momentum (forward directed ledge grab)
* Player runs off edge of block
* Platform blocks allow player to pass thru if jumping up
* Platform blocks allow player to drop through by pressing jump + down
* Bullets travel through platforms
* Enemies can stand on platforms
* Sides of platforms do not affect player momentum
* Laser emitter block
* Emits tripwire lasers either pulsed or solid
* Emitters can be toggled using a switch plate
* Do not have collision with player (wall mounted to another block)
* Pressure block
* Pressure block toggles associated objects
* Can be floor mounted or wall mounted
* Pressed on player contact
* Return to idle animation when released
* Toggle for (x) time period
* Ventilation fan
* Damages player on normal contact
* Player must slow time to go in between blades
* Has proper collider
* Is time affected
* Destroys all passing projectiles
* Interrupts lasers
* Prefab can be multiple blocks tall.
* Turret block
* Can fire bullets at player
* Fires bullets every (x) frames
* Can sometimes be destroyed by player (toggle state when placed)
* Have physical collider
* Can be rotated in room
* Can be influenced by pressure plate
* Has firing sound
* Has destroy sound
* Dummy Launcher Turret block
* Can fire rockets at player
* Rockets fly linearly in direction of turret facing
* Same destruction and switch attributes of turret
* Guided launcher block
* Launches guided rockets at player
* Same attributes as dummy launcher.
* Glass wall
* Wall that can only be shattered with momentum buildup
* Standing and walking to glass does not break collider
* Shatters when speed is <= than a particular speed
* Animates glass break
* Has glass break sound (smaller than main window shatter)
* Can be oriented in any direction.
* Alarm laser emitter
* Same attributes as base laser, has unbroken laser line
* Breaking laser line triggers connected objects
* Alarmed Glass
* Same attributes as glass wall
* Breaking triggers connected objects

Potential - lowtime gates

Projectiles

--

Bullets are affected by time

Bullets are shot by appropriate enemies

Bullets are shot by appropriate turrets

Bullets cause player time loss

Player can ‘cut’ bullets and change vector

Cut bullets can return to sender

Returned bullets can kill enemies

If bullet is cut and enemy is already dead, fire bullet horizontally away from player into nearest wall (or collider)

Bullets can be ignored with dash

Lasers can be pulsed or made into a solid line(32px long laser sprite element)

Time effects lasers

Travel in laser orientation direction

Contact with lasers lower time

Contact with lasers kill momentum

Lasers emitted from alarm laser can trigger alarmed sensor

Lasers can be dodged (or ignored) with dash

Dumb Rocket can fly in linear line

Rocket destroyed on appropriate walls and floors

Rockets are destroyed on platform block collision

Rockets accelerate from base speed to final speed

Rockets travel in direction pointed

Rockets can be slowed

Slowed rockets can be used as platforms

Hitting rocket on nose causes detonation of rocket

Rocket causes time loss to player

Rocket can break glass blocks and duct vents

Dodging through rocket destroys rocket

Dodged rocket explosion does not harm player

Smart Rocket has all base rocket attributes

Smart rocket pursues player

Modules

--

Modules are formed with some saved information in a 16x16 grid.

Modules can accommodate all blocks

Modules can be created and saved

Modules are assigned a difficulty value

Modules are placed in floor based on difficulty value

Modules cannot be repeated simultaneously

Modules cannot be overly repeated in floor

Grouped modules (larger set pieces) are assembled correctly based on prefab ID

Floors

--

Running through game generates floors with appropriate modules

More difficult floors get different modules

Finishing one floor goes to another of higher difficulty

Skyscraper

--

Floors are arranged in low difficulty to high

Traversing to a new floor triggers lower floor cutscene

Requires art for lower floor bar and skyscraper

Requires sound

Ground floor is final floor

Beating ground floor ends game

Bomb Explode

--

TImer reaching 0 detonates bomb

Bomb explosion shows building being blown up

Displays final score and time

Adds final point accumulation to point bank

Prompt if necessary for user to enter name to leaderboard

* Requires leaderboard structure

Elevator cut

--

Floors generate a random module containing an elevator door that is 2 blocks x 2 blocks

Interacting with door causes player to descend into shaft

Shaft consists of vertical hallway with platforms

Enemies can spawn in elevator.

Shaft is 10 modules high

Bottom of shaft has exit door

Exiting door starts much lower stage with timer set to what the time was upon interacting with the exit door

Stage Aesthetic design (?)

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Stages contain walls and windows

Windows look out to behind building at other buildings and city

Lights can shine and effect shadows inside the rooms where applicable

Weather can be seen through windows

Breaking out of final window shows outside of current building, background city, weather fx

Lighting in stage effects shadows (talk with art)

Swinging lamps (?)

Wall lights

Possible blackout stages where only light is backlit city?)

Ideas: Player breaks out of building, tube of light (semi transparent and vertical) envelopes character) the tube constricts, character disappears, reappears on next floor out of light tube (vertical)

Meeting notes (9/16)

Working further ahead. (1-2 weeks)

By this meeting on friday, we shoild have backlog populated with at least 1 or two sprints worth of tasks and features, and then we should go through and turn them into all delineated tasks for the week.

Each task as a paragraph story defining the tasks and an appropriate checklist.

Every thursday, go through with team, and prioritize things for that week, estimate hour number, and assign teams.  This also gives them buy into the process due to hour count and te team determines their tasks and their hours (they feel ownership of tasks)

Ownership and agency is key from the team.  Let them feel like the project is theirs.  Learning from dwindle to help people feel important.

Begin working on product backlog (have 2 weeks flushed out ahead of time.

WEEK 2

Module Creator (single block)

Creates module with 16x16 block, each block is 1x1.  Can be clicked to place, can be saved as a prefab(?)

* Create block prefab
* Create player prefab
* Create enemy prefab
* Place in room
* Grid snapping
* 16x16

3 entrance and exit types.  A B C.  A is bottom, B is mid, C is top.  Each module has a script which only stitches together compatible modules.  Prefab contains enemy.

Wall collisions

* Wall stops player
* Wall stops enemy
* Wall stops knife throw

(Easy)

Debug Stage for testing new features (testing function and flow)

* Player
  + Put player in level
* Platforming
  + Create level portion for testing platforming
* Running
  + Create level portion for testing running speed up, slow down and turning
* Enemies
  + Place enemies in level
  + Create level portion for testing enemy movement
  + Create level portion for testing enemy attacking behavior
  + Create level portion for testing enemy death behavior

(Medium)

Player Jumping

* In air movement
  + Able to move freely but restricted movement speed
    - In Air Speed (3 blocks/s)
  + Jump speed cannot exceed movement speed (9 blocks/s)

(Medium)

Enemy AI

* Enemy movement (use path or check for ground underneath)
  + Create paths
  + Create ground check
  + Create movement in left direction
  + Create movement in right direction
* Infantry AI
  + Create check for player
  + Infantry attack animation
  + Infantry attack sound
  + Attack when player enters attack range (2 blocks)
  + Shield Bearer AI
  + Create shield object
  + Create shield “hit” sound
  + Deflects attacks in left direction
  + Deflects attacks in right direction

Stage end prefab which changes scene

Class Hierarchy + folder structure for game

Finish module creator if it isnt finished yet.

State machine for the player (n trello)

1. Normal
2. Jumping
3. Attacking
4. Damaged (i frames)

Different type of platforms

1. Pass through platforms
   1. Player can pass vertically upward through the block
   2. Falling player collides with top and can stand
   3. Player has no collision with sides of block
   4. Pressing down and jump causes player to fall through block.
2. Damaging block
   1. On contact, subtracts time
   2. Player loses momentum but can retain some horizontal motion
   3. On contact, activate damaged player state
   4. If player is in damaged state, do not redamage until normal state

Time Pocket Dodge

* Ticking sound effect
* Slowdown sound effect
* Animation dodge
* Player avoids enemy and projectile
* Enemy cannot take damage from player
* Time resumes to normal and player returns to normal state after dodge

Timer mechanic

* Killing enemy loses time by X factor
* Gaining time from enemy kills
* Timer counts down
* User interface element
* Timer hitting 0, enter an endgame state (temporarily move to other scene)

Slowdown function

* Design a hierarchy where each class can call a slowdown method which effects the update method of the class, so we can attach a slowdown to any future object
* Time slows enemies
* Time slows down any projectiles on screen
* Time slow modifies maximum player fall rate
* Triggers slowdown FX (see dan for that sound fx)
* Slows down timer
* Timer slowdown drains stamina bar
* Stamina bar reaches 0, time resumes as normal

Stamina Bar

* UI element
* Hitting button drains bar
* Bar drains depending on drain rate variable
* Time is affected by the time rate variable
* When bar hits 0, bar stops draining
* When bar hits 0, time resumes as normal
* When button is released, bar goes up again slowly
* Button can be repressed even if bar is not full
* Bar does not recharge while button is down.