

Final Project Proposal
"Goldfinger"

Based on: Cookie Clicker/ AdVenture Capitalist/ Tap Titans

Explanation: This project simulates the mechanics of the games Tap Titans and Cookie Clicker, with the theme AdVenture Capitalist. The primary objective here is to create a corporate empire with hundreds of Helpers and to amass lots of gold, while staving off natural disasters and robberies.

Instructions:

User starts off on main screen, which will show total gold, total stats from helper, and instructions on how to obtain gold, access store, etc.

Press **[space]** and **[enter]** for gold.

Press **[S]** and **[enter]** for store.

→ Will bring user to a separate page, which shows available helpers, upgrades, levels, and power ups available for purchase. Each possible purchase will be linked to a separate key.

Press **[Q]** and **[enter]** for sorting.

→ Will display a table based on a 2D array of helpers with their attributes. Can be viewed in ascending or descending order as specified.

Additional instructions will be given on screen if necessary.

Display takes up the entire terminal. Terminal will update with info after every "click" (combo of **[space]** and **[enter]**) .

Some abbreviations:

- CD = cooldown
- dur. = duration

Expenditures:

- Helpers
- Can be (insertion) sorted by name, value, level, and/or gold production, with greatest-lowest and lowest-greatest specification, using keys entered in terminal
- Instantiated when purchased (OOP)
 - Miners
 - Produces gold **every second** (passive)
 - Have to be purchased with gold initially (user starts with 0 miners).
 - Each successive upgrade increases gold/second by the same amount, but costs more

- Engineers
 - Increase gold per **press**
 - Have to be purchased with gold initially (user starts with 0 engineers).
 - Each successive upgrade increases gold/press by the same amount but costs more.
- Gamblers
 - Increase chance of winning the lottery
 - Have to be purchased with gold initially (user starts with 0 gamblers).
 - Higher cost to purchase than regular miners
 - Produce less gold/sec than regular miners
 - **Cannot** be leveled
- Helpers possess upgrades, levels, and quantity
 - Upgrades span an entire class of helper, so the effect is spread across all helpers of the same type.
 - Ex: A tier I upgrade to gamblers will give **all of them** a 2% boost.
 - Levels apply to one specific object.
 - Ex: A level-up to an engineer will increase the stats of that one engineer.
 - Buying more of a certain helper will grant you a base helper. Upgrades will apply, but it needs to be levelled.
 - Ex: Buying another miner will give you a level 1 miner (with base gold per second), but any upgrades purchased will apply to it.
 - The price for each successive level/upgrade/helper will increase exponentially.
- Powerups
 - Some powerups apply to miners, some to engineers, some universal
 - Dependent on cost
 - Cooldown
 - Sharpen Picks (400) (30 seconds dur.) (1 min CD)
 - Doubles gold/second
 - Power Surge (400) (30 seconds dur.) (1 min CD)
 - Doubles the amount of gold/press
 - Extra Chips (400) (30 seconds dur.) (1 min CD)
 - Doubles odds of lottery
 - QAFee (2500 gold) (30 seconds dur.) (5 min CD)
 - Doubles rate of everything

Random events:

- Uses Math.random() with floats every second to find out whether an event has occurred or not
- Lottery
 - 1/2000 (about once every 30 minutes)
 - Extremely low chance to “win” a large sum of gold

- Technical Training
 - 1/100
 - All helpers get an upgrade (more gold gained per miner)
- Accidents
- Possibly deletes instantiated helpers (OOP)
 - Earthquake
 - 1/1000 chance of occurring (about once every 15 minutes)
 - Randomly chooses (the floor of) $\frac{1}{4}$ of all miners randomly and deletes them
 - Thunderstorm
 - 1/1000 chance of occurring
 - Randomly chooses (the floor of) $\frac{1}{4}$ of all engineers randomly and deletes them
 - Bankruptcy
 - 1/1000
 - Randomly chooses (the floor of) $\frac{1}{4}$ of all gamblers randomly and deletes them
 - Robbery
 - 1/10000 (about once every 2 hrs 30 min)
 - Lose all gold

To Do List:

- ☐ Implement "clicking" → pressing the key will gather gold
- ☐ Implement passive gold collecting
- ☐ Due 01/05 F
 - ☐ Write DataStorage
 - ☐ Write the Helper class and associated subclasses
 - ☐ Link time to gold production (just a prototype, in class Woo)
 - ☐ Program the main UI (in class UserInterface)
- ☐ Due 01/08 M
 - ☐ Figure out additive/multiplicative bonuses for helpers.
 - ☐ Write store so that purchases will give the correct bonus.
 - ☐ Program the UI for store
 - ☐ Write RNG events
 - ☐ Lottery
 - ☐ Bad Luck events
- ☐ Due 01/12 F
 - ☐ Get ~~unwilling~~ testers and find bugs.
 - ☐ Add any extras and finish project!
- ☐ 01/15 M
 - ☐ Start demos

2D arrays, sorting arrays, loops, inheritance

Extra:

- ❑ Strikes- have to pay a certain amount for each worker you have or risk all of them quitting the job (losecon) or only one worker remaining (exponential growth to a crawl).
- ❑ Corporate Warfare- the “boss” of the game. Hire hitmen to take out the executives that are encroaching on your mines while defending yourself against attacks.
- ❑ Tax Evasion- Bribe off law enforcement that is coming after you for evading taxes. What will you do: go to court, continuously bribe them until you get caught, or will you fight back?
- ❑ Helper “sidegrades”- additional upgrades that enhance gold production (similar to lemonade stands/ newspaper stands/ car washes from AdVenture Capitalist).
- ❑ Only have to press **[enter]** to update screen.