

# Gamblemine

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## **Introduction:**

A young chap named Gambledorf lost all of his money because of gambling. He loves gambling, but unfortunately, he couldn't do it in the casinos. Instead, he pursued the next best thing: gamblemining. Many of the townsfolk were raving about the gamblemines, but had no courage to gamblemine, because of the underlying dangers, such as bombs, and the bad reputation of gambling. Since Gambledorf lost all of his IQ gambling, he knew that gamblemining was the right choice for him. He said bye to his townsfolk and delved into his adventure of gamblemining. Many hidden adventures await!

Gamblemine is based on the concept of a mining game: a 2D game in which ores and chests are randomly placed in a grid-like fashion. Gamblemine records coins and equipment gained by the player, who chooses which blocks to mine. Gamblemine is made for parents and kids who are potentially obsessed with gambling or want to gamble, but gamble safely. Or anyone who wants to have fun! We want to make it because gambling is fun, but we believe it would be more interesting if combined with other aspects.

Gambledorf will mine and try his best to find the best mine! Any new mines will not have any visible blocks until Gambledorf begins mining. Only blocks that are adjacent to empty spaces are visible to Gambledorf. The ores will reward coins, and chests will reward special equipment. Any chests that are opened by the player take a certain amount of coins, adding to the gamble aspect of this game. The coins can be used to upgrade tools, add specialities to the tools, and open up the best mine area! Tools with specialities could increase the speed of mining. The goal is to try to collect all of the tools.

Gamblemine has an astonishing variety of tools, ores, and chests that the player can discover and tinker around with. Gamblemine also has an elaborate randomization system, meaning that the player would never know what is coming next. Each mine is always shrouded in mystery, and the gamble of spending coins to possibly gain better equipment from chests keeps players on their toes. The fun factor, the mystery, the possibility; all are endless and there for you as the player to enjoy.

## **Instructions:**

The menu page will be the first page the player will see. The buttons on the menu page would be labeled "Tools!", "Mine!", "Rich!" and "Stats!".

The "Tools!" button would lead to an inventory showing the tools that Gambledorf has acquired. In order for the player to view the stats of the tools, they have to hover their mouse over the tool. The information that is displayed is the tool name, rarity, and miningPower. In order for the player to equip a tool, they would have to press down on their mouse button while hovering over the tool that they want to equip. The player can navigate back to the menu page by clicking on the back button located at the top left of the screen.

The "Mine!" button would lead to a mine screen that shows a 2D Grid, each grid will be a picture of a mine (rock, chest or coins after the rock is cracked). The player will be on the top part of

the screen at the start of the game, they will only be able to see the mines that are exposed to the air(there is a block to the top, bottom, left, or right that is null/already cracked), while the others are blacked out. However, the player can only crack those blocks that are adjacent to them(the 3x3 grid that Gambledorf is in the middle). The top middle of the screen would display the amount of coins that Gambledorf has. The top right of the screen would have a reload mine that the player can click to reload and randomly set the blocks as a chest, block, or bomb. To move Gambledorf around the MineScreen, the player would have to click the arrow keys. There is a tool button on the bottom right corner of the MineScreen in which the player can click to go straight to the inventory of Gambledorf. The player can navigate back to the menu page by clicking on the back button located at the top left of the screen.

The “Rich!” button would lead to a screen that functions the same as the where the “Mine!” button ends up. The only difference is that this button only works when the player has **five** tools in their inventory. This mine is considered to be the endgame mine.

The “Stats!” button would open up a screen where the time played, the number of mine blocks cracked, the number of bombs blown, the number of chests opened, and the total amount of coins gained are shown. There are no interactions except for the navigation back to the menu page by clicking on the back button.

### **Features List (THE ONLY SECTION THAT CANNOT CHANGE LATER):**

#### **Must-have Features:**

- The ability for Gambledorf to mine the blocks at the mining site
  - Change the appearance of the blocks in a mine according to its status: mined(will just be removed).
  - Altering the player’s ability to see blocks in the mine. If a block in the mine has an empty space adjacent to it, that block will be visible to the player.
- Tools with different looks and different mining power that can be acquired randomly via opening chests found in the mine. The rich but dangerous mine would have a higher chance for better pickaxes from chests than the normal mine.
- The mine has bombs in it which have a random chance of activating every time the player mines a block. When the bomb blows up, it affects the 4 tiles to its top, left, bottom, and right. If the player is in a tile in the range of the bomb, they lose 150 of their coins, the player would go into debt if they don’t have 150 coins.
- Different types of blocks such as chests that the player can mine. Chests are blocks in which if the player mines chests, then a certain amount of coins is spent, and the equipment put into the inventory of the player.
- The Menu screen, Tools screen, Stats screen
- Movements with collision check and follow the rules of physics (gravity, friction)

#### **Want-to-have Features:**

- Skins (for example, turning Gambledorf into Kermit). Special pickaxes would appear in the player’s tools after the player hits a certain total coin or pickaxe discovery completion milestone in the stats. Those pickaxes would change Gambledorf into a different looking character. (Kermit pickaxe being equipped == Kermit skin)

- 2 different types of mine (normal mine and rich but dangerous mine)
  - Normal: If the player gets bombed, they lose 150 coins
  - Dangerous: If the player gets bombed, they lose 300 coins
- Statistics page for life-time coins gained, time played, and blocks mined, as well as an index for every tool
- Sell tools to obtain coins(coins are used to buy/upgrade tools)
- Animation features - when the player mines, there are certain animation movements associated with the mining.

### **Stretch Features:**

- Include advertisements like actual games.
- Three mines instead of two mines, this will include a normal mine, a rich mine, and another rich mine, but it is filled with dangerous mines, such as bombs.
- Casino: A place where the player can bet any number of coins and based on the value of the dice roll they will gain or lose a certain percentage of the coins bet. This system would be implemented if the player is feeling like doing more forms of gambling, or has extra coins to spare and would like to gamble for more.

### **Class List:**

- Sprite - Represents any object that moves and is affected by gravity
- DrawingSurface - Represents the area where all images are drawn and managed using ScreenSwitcher in this class
- Gambledorf - Can move up, down, left, and right, and mine blocks.
- Block - A tile inside a mine that, when mined, gives the player coins.
- Bomb - When Gambledorf mines this block, the bomb explodes and destroys blocks in the locations adjacent to it.
- MineScreen - Represents the superclass that provides a template of the area where the player is able to mine blocks.
- NormalMine - A mine screen with equipment to find in chests, bombs are not as harmful, blocks give a normal amount of coins.
- RichMine - A mine screen with new equipment to find in chests. Bombs take away more coins from Gambledorf, blocks give more coins. All types of blocks are harder to crack. All chests, bombs, and blocks have different looks in comparison to the NormalMine.
- Equipment - The equipment that Gambledorf acquires from chests and uses to mine. Equipment has different amounts of effectiveness at mining blocks with the rarer equipment requiring less clicks to break a block.
- Gamblemine - The main method which helps set up the program.
- Chest - A type of block that when the player has enough coins, can be mined to get a chance at getting better equipment.
- Screen - Ensures other screen subclasses have dimensions.
- InventoryScreen - A screen where the player can see and equip tools by clicking on the tool the mouse is hovering over.

- MenuScreen - The starting screen where the player can start the game and go to the other screens.
- StatsScreen - Where the player can see the amount of pickaxes discovered in mine areas, the total amount of coins gained, the amount of time played, total bombs mined, total chests mined, and total blocks mined.
- ScreenSwitcher - Changes the screen from MenuScreen, StatsScreen, NormalMine, RichMine, and InventoryScreen.
- Rectangle - Helps with the drawing of the blocks on the minescreen, as well as the overall interface and design of the program. Uses PApplet to draw rectangles.
- Shape - Helps set up the basic properties of Rectangle.

### **Credits:**

- Amy: MineScreen class, NormalMine, RichMine, DrawingSurface, Gamblemine, StatsScreen. Implemented the switch screen feature. Created rainbowPickaxe.png, monkeyDorfLeft.png, monkeyDorfRight.png, kermitDorfLeft.png, kermitDorfRight.png, StonksPickaxe.png.
- Jack: Created the Block class, Bomb class, Rectangle class, Shape class. Created the images of RichMine, updated a large portion of the UML diagram, as well as the readme. Created DogePickaxe.png, GoldPickaxe.png, BananaPickaxe.png, KermitPickaxe.png, also tested for bugs in the game.
- Cameron: Gambledorf physics and movement, mouse interactions with blocks in MineScreen, created the images of NormalMine, MenuScreen, Chest class, InventoryScreen. Added in the MenuScreen images, and created TheGreatPickaxe.png, Pickaxe.png, BaguettePickaxe.png, and BombPickaxe.png.
- Google Gemini - Used to create images shown in program
- Chat-GPT - Used to create images shown in program