



# Defuse the Bomb

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# **1. Changes and Team Dynamic**

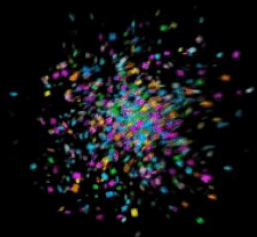
# Changes

- Added a hint button
  - Can use if there are more than 2 hints left
  - Defuses random phase
  - Costs you 2 strikes

```
# check if the hint button is pressed
if (gui._hint):
    # if there are more than 2 strikes left
    if (strikes_left > 2):
        # create a list to hold active threads
        active_threads = []
        # add active phases to the list
        if (keypad._running):
            active_threads.append(keypad)
        if (toggles._running):
            active_threads.append(toggles)
        if (wires._running):
            active_threads.append(wires)
        if (button._running):
            active_threads.append(button)
        # randomly choose a phase from the active threads
        phase = choice(active_threads)
        # mark the chosen phase as defused
        phase._defused = True
        # call the strike function twice
        strike()
        strike()
    # reset the hint flag
    gui._hint = False
```

# Changes

- Added gif for success and fails



**SUCCESS! YOU WIN!**



**YOU HAVE FAILED!**

# Changes

- Added gif for success and fails

```
# if success is true
if success:
    # set the gif image file path for the success gif
    image_file = os.path.join(os.getcwd(), "success.gif")
    # set the sound file path for the success mp3
    sound_file = os.path.join(os.getcwd(), "success.mp3")
else:
    # set the image file path for the explosion gif
    image_file = os.path.join(os.getcwd(), "explosion.gif")
    # set the sound file path for the explosion mp3
    sound_file = os.path.join(os.getcwd(), "explosion.mp3")
# call the function to display the right gif and play the sound file
self.display_animated_image(image_file, sound_file)
```

```
# display an animated image
def display_animated_image(self, image_file, sound_file):
    # create a frame to hold the animated image with a black background
    animation_frame = Frame(self, bg="black")
    # position the frame in the grid
    animation_frame.grid(row=0, column=0, columnspan=3, sticky=EW)

    # open the image file
    animation_image = Image.open(image_file)

    # create a list to store all the animation frames
    animation_frames = []
    # iterate through the frames of the animation image
    for frame in ImageSequence.Iterator(animation_image):
        # append the PhotoImage object for each frame to the animation_frames list
        animation_frames.append(ImageTk.PhotoImage(frame))
    # store the number of frames in the animation
    num_frames = len(animation_frames)

    # create a label to display the animation with a black background
    animation_label = Label(animation_frame, bg="black")
    # pack the label inside the frame
    animation_label.pack()

    # initialize pygame.mixer
    pygame.mixer.init()
    # load the sound file
    pygame.mixer.music.load(sound_file)
    # play the sound file
    pygame.mixer.music.play()

    # define an inner function to animate the gif
    def animate(frame_num=0):
        # make animation_label, animation_frames, and num_frames accessible inside the function
        nonlocal animation_label, animation_frames, num_frames

        # update the label's image to display the current frame
        animation_label.configure(image=animation_frames[frame_num])

        # check if there are more frames to display
        if frame_num < num_frames - 1:
            # update the frame number
            next_frame_num = frame_num + 1
            # call the animate function after 50ms to keep the animation going
            self.after(50, animate, next_frame_num)

    # start the animation
    animate()
```



# Changes

- Added sounds
  - Ticking when timer is counting down
  - Success noise
  - Fail noise
  - Booting up noise

# Changes

- Modified the keypad phase
  - The keyword is assigned to a riddle
  - The passphrase is the answer to the riddle

Keyword	Riddle	Keyword	Riddle
BANDIT	What gets wet while drying?	MIGHTY	What five-letter word becomes shorter when you add 2 letters to it?
BUCKLE	You walk into a room that has a match, a candle, a kerosene lamp, and a fireplace. What do you light first?	NATURE	What five-letter word has one left when you remove two letters?
CANOPY	What has many keys but can't open a single lock?	REBORN	What fills up a room but takes up no space?
DEBATE	David's parents have three kids. Harry, Joe, and what is the name of the third?	RECALL	You make me, save me, change me, and raise me. What am I?

# Team Dynamic

- Met goals by preplanning what we wanted to achieve
- Each got a turn taking the bomb home



## 2. Future Plans

The background of the slide is a deep blue gradient that transitions into a lighter blue and greenish hue towards the bottom right. Overlaid on this background is a complex network of thin white lines connecting small white dots, creating a series of interconnected geometric shapes, primarily triangles and quadrilaterals, reminiscent of a wireframe or a molecular structure.

# Other Ideas

- Make the phases dependent on each other
  - Ex: need to solve toggles before the keypad
- Add a storyline and make it feel like a mission
  - Ex: add commentator audio that talks the player through the story

# **3. What We Learned**

The background of the slide is a blue gradient, transitioning from a darker blue on the left to a lighter blue on the right. Overlaid on this gradient is a complex network of white lines and dots, forming a series of interconnected triangles and polygons. The lines vary in thickness and opacity, creating a sense of depth and connectivity. The dots are small white circles that serve as vertices for the geometric shapes. The overall effect is a modern, tech-oriented aesthetic.

# Takeaways

- Taught importance of communication
- Time management
- Creativity

# 4. Changes to the Project

The background of the slide is a deep blue gradient that transitions to a lighter blue and greenish hue towards the bottom right. Overlaid on this background is a complex network of thin white lines connecting small white dots, creating a series of interconnected triangles and polygons. This geometric pattern is most prominent on the right side of the slide, where it forms a large, intricate structure that resembles a molecular model or a network diagram. The overall aesthetic is modern and technological.



# Changes for Next Year

- Start project at the start of the term
- More hands on with designing the bomb and assembling
- Instead of giving us all the prewritten code at once, we could write some of it together as a class
  - like we did with the toggles and wires phases
  - help understand the code more