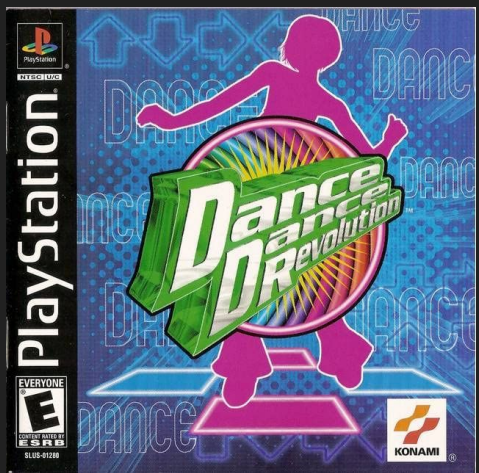


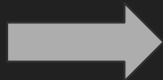
# Dance Apocalypse

A team featuring Phillip Wandyez

# Goal: Put Dance Dance Revolution in Fallout 4



The magic of dance



The fantasy of being  
able to sprint



# A bit about me

Nice to meet you dead  
inside I'm Dad.

# I put off writing Paul Blart Mall Cop 3 to be here

I'm 81 pages into this  
fan-fiction  
screenplay, I am  
invested,

**PAUL BLART**

[Doing a Bane impression] Paul Blart is no longer with us.

**INT. MALL COURTYARD - NIGHT**

**JAMES KENT PRESSES THE RADIO AGAINST HIS CHEST, SIGHING IN RELIEF, THANKING GOD THAT HIS NIGHTMARE IS OVER. JAMES KENT THEN PUMPS HIS FIST INTO THE AIR.**

**JAMES KENT**

He's dead!

**THE AUDIENCE OF HOSTAGES GASPS. MAYA BLART TURNS AWAY, BEGINNING TO WEEP. STUART LOOKS POSITIVELY SHOCKED, IN DISBELIEF THAT PAUL BLART COULD ACTUALLY DIE. AMY GLARES AT STUART, ANGRY THAT HE WOULD HAVE EVEN HELPED AT HIS DEATH. DRAKKAR NODS HIS HEAD.**

**DRAKKAR**

[With approval] Killer.

**VECK PATS JAMES KENT ON THE BACK, CONGRATULATING HIM.**

**VECK**

And now we don't need any of you, no more Blart, no more bait.

**PAUL BLART - RADIO**

[Doing a bane impression] And how many of us remain in this desolate mall?

**JAMES KENT TALKS BACK ON HIS RADIO**

**JAMES KENT**

Don't worry about that. See if you can find where Paul Blart left the others. Then get everyone back here so we can set up the bombs.

I'm also a computer science  
major

I'm just here to earn my programmer socks

How the heck do  
I put stuff in an  
existing game?





# Using developer tools of course!

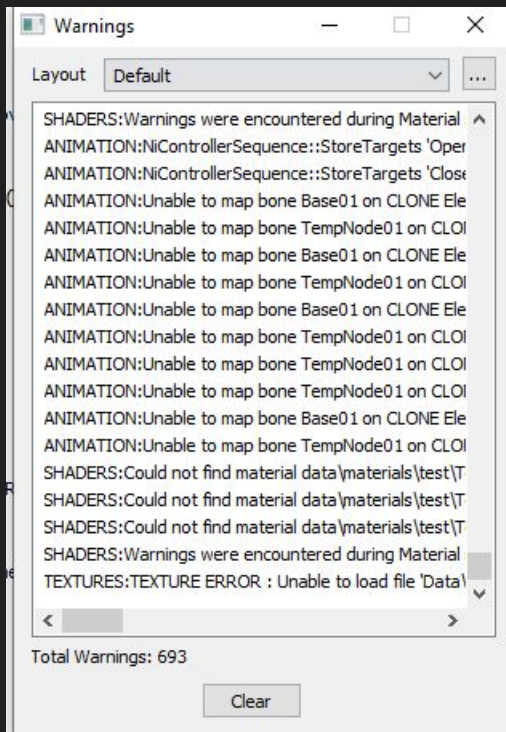


Todd's most feared creation



Obscure programming language

# Fun Facts About the Creation Kit



Peak 2003 Technology - Originally built for Morrowind

Crashes - so make sure you hit that save button!

Crashes when you hit the save button.

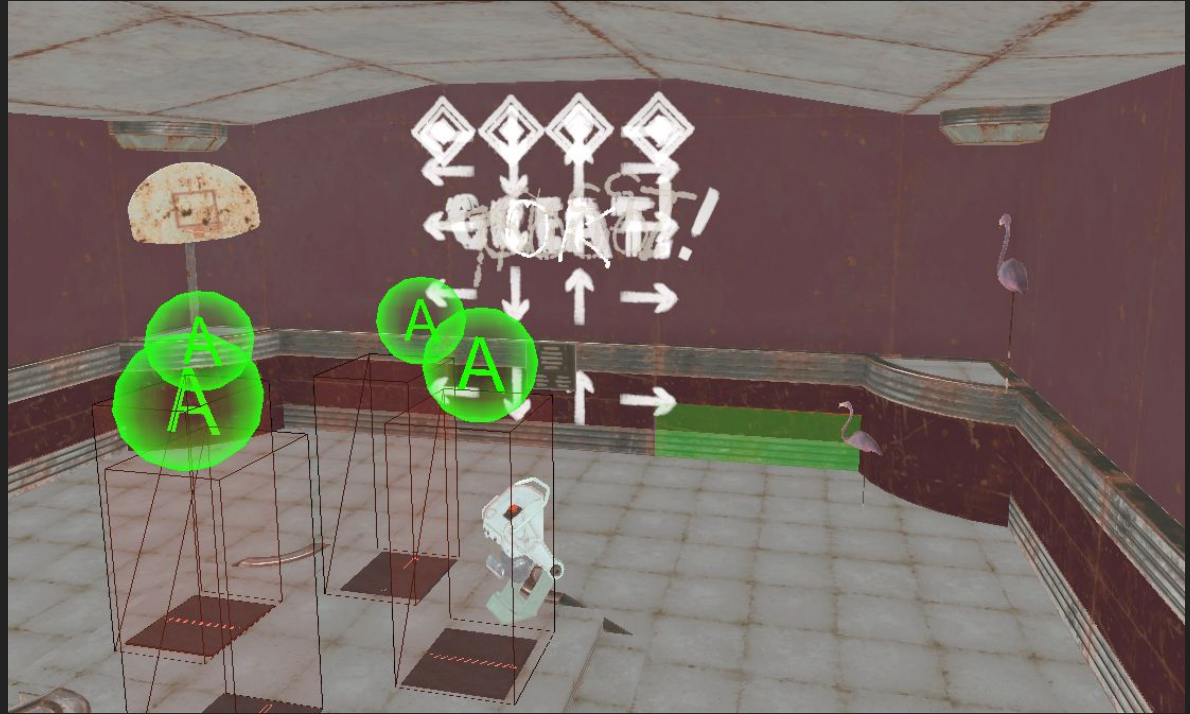
You know you are succeeding the more warnings you generate.

What does it tell us when the warnings have a dedicated layout button



All scripts must be attached to objects

My code is  
powered by  
flamingos and  
basketball  
hoops.



This is the dark path of object oriented programming

# Fun Facts About Papyrus

Little to no documentation!

All documentation was created by the community through trial and error!

You cannot iterate through a string

Arrays are capped at 151 entries

Arrays CANNOT increase in size (yay?)

No multidimensional arrays

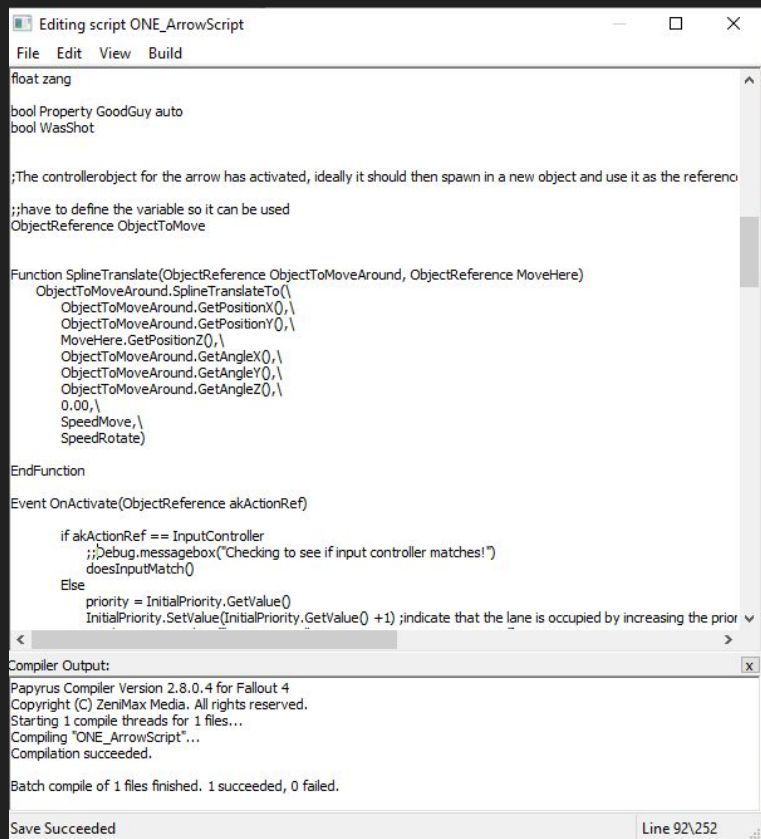
You cannot initialize an array with values manually

You cannot initialize an array at all.

No switch statement, (Elseif is our friend)

Functions randomly don't work despite working before! (Looking at you TranslateToRef()!!!!)

ChatGPT doesn't know how to code in Papyrus! Which means you have to do it yourself.



This is your IDE, and until 2023  
this was your only option

Okay What is Dance  
Dance Revolution?



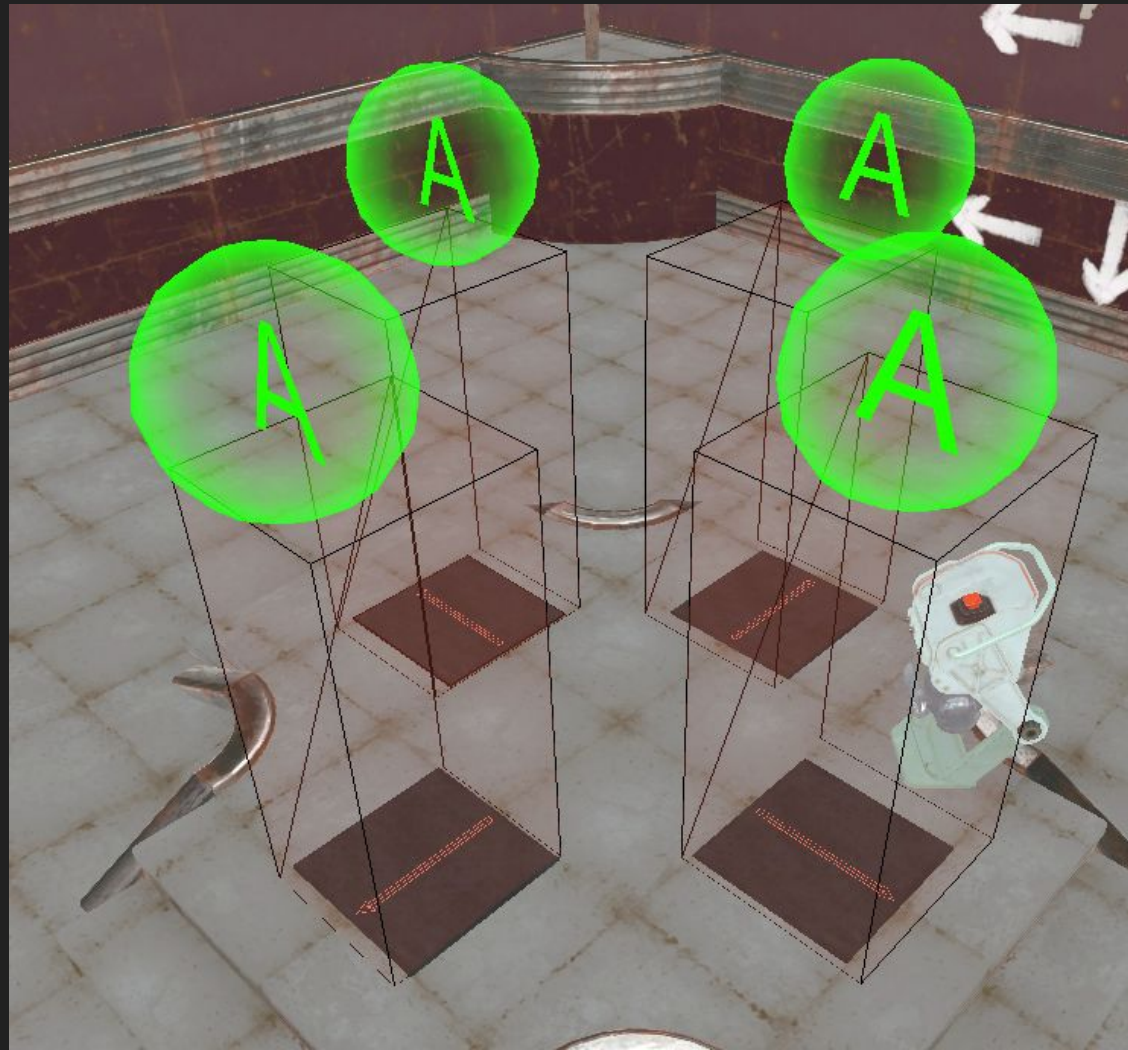
It's a rhythm game with 4 inputs, a score counter, and encouraging words

# Bad news, you can't program custom inputs in Fallout 4

Additional hotkeys using the Fallout 4 Script Extender are not available to those that use Bethesda.net to download any modifications to their games (i.e. 70% of the playerbase on XBOX, PC)

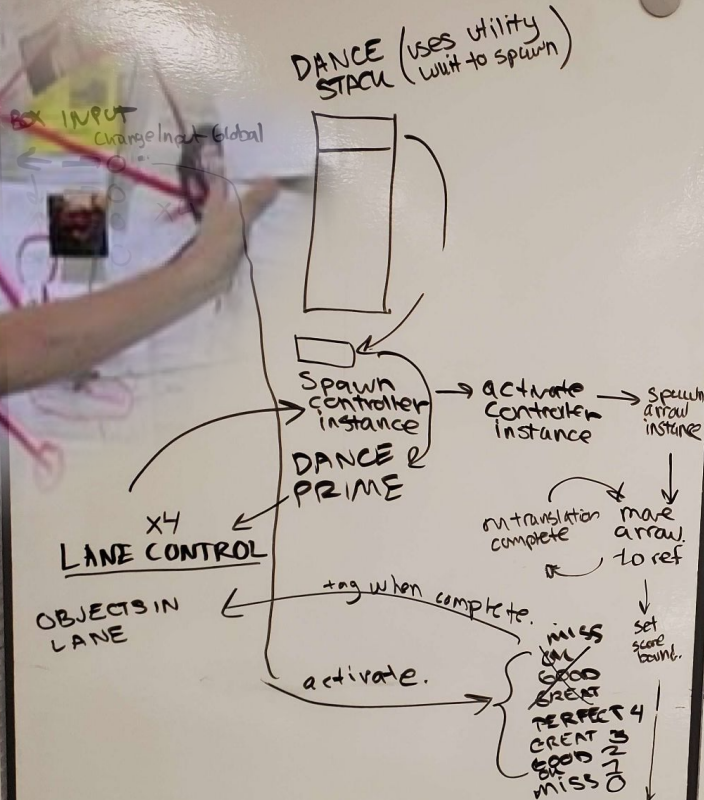
# Solution: Make inputs out of inputs

Surround the player  
with triggerboxes  
representing input  
directions





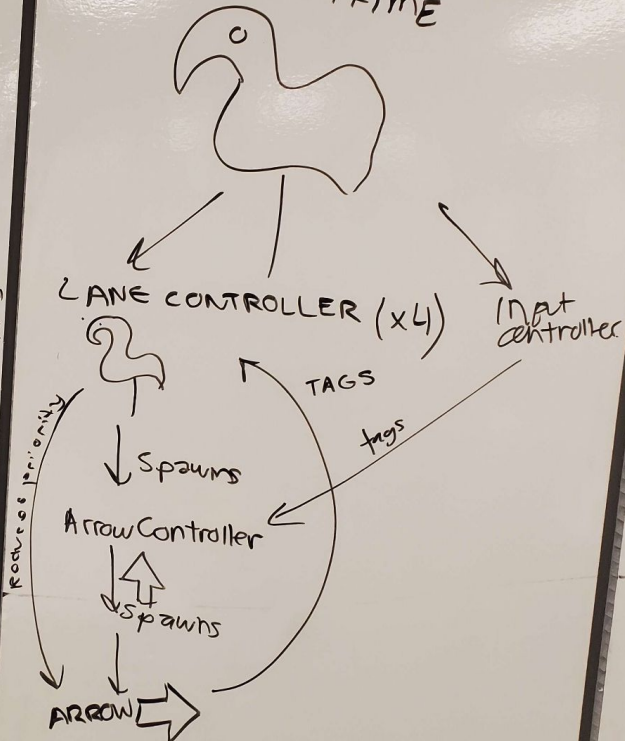
How does the rest of it  
work?



### POTENTIAL ISSUES:

- ① mismatch input
- ② double up  
When + two arrows in same direction follow in rapid succession, what happens?

## FLAMINGO ORIENTED DANCE PRIME



It just works.

# Boring explanation for technical people who love reading

The DanceStack is a stack of dance moves and timing for the moves

The dance moves are fed according to their timing to DancePrime

DancePrime feeds the dance move to the appropriate LaneController

The LaneController creates an instance of an ArrowController because objects being moved cannot process other scripts, so they need a controller so they can handle other interactions

The ArrowController instance creates an instance of an Arrow

The ArrowController moves the arrow through various zones representing scoring

The ArrowController listens for inputs from the InputController which represents player input (those triggerboxes you saw)

The ArrowController sends the score matching the input and arrow instance position to the ScoreController

The ScoreController shows encouraging words and tallies score.

Wow that sounds so  
straightforward!

“I’m sure it can’t be too hard”

-Phillip Wandyez 24 hours ago

# REMEMBER: PAPYRUS CAN'T INITIALIZE ARRAYS

I DID NOT KNOW THIS, NOWHERE IS THIS INDICATED - I WENT AND HAD CONTACT COMMUNITY EXPERTS.

HOW DO YOU STORE DATA???

NO REALLY? HOW??? THE COMMUNITY DOCUMENTATION SUGGESTS CREATING A NEW OBJECT TYPE CONTAINING AN ARRAY, AND THEN MAKING A ARRAY OF THAT OBJECT TYPE,.

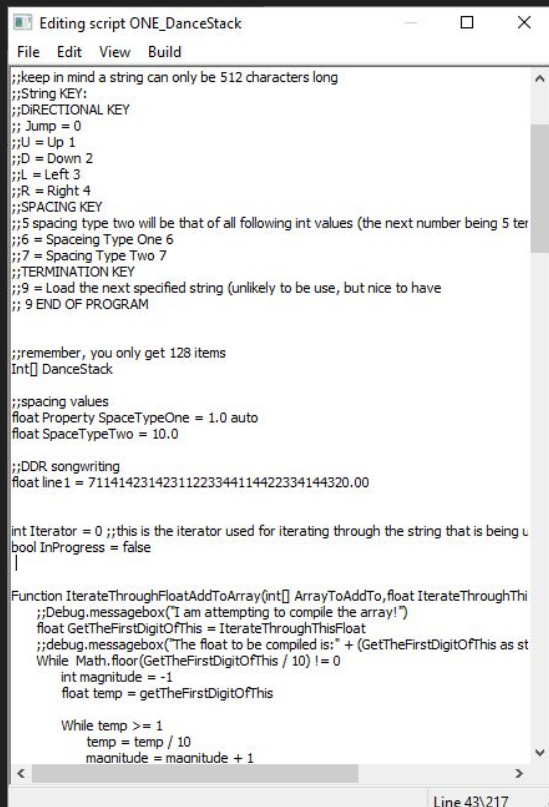
MADNESS.

OR. Orrrrrrr

Fill an array with ints

But ints have a limit of digits in Papyrus

So create a float where each digit represents a command, parse it, convert the parse to ints, and fill an array.



```
Editing script ONE_DanceStack
File Edit View Build

;;keep in mind a string can only be 512 characters long
;;String KEY:
;;DIRECTIONAL KEY
;; Jump = 0
;;U = Up 1
;;D = Down 2
;;L = Left 3
;;R = Right 4
;;SPACING KEY
;;5 spacing type two will be that of all following int values (the next number being 5 ter
;;6 = Spacing Type One 6
;;7 = Spacing Type Two 7
;;TERMINATION KEY
;;9 = Load the next specified string (unlikely to be use, but nice to have
;; 9 END OF PROGRAM

;;remember, you only get 128 items
Int[] DanceStack

;;spacing values
float Property SpaceTypeOne = 1.0 auto
float SpaceTypeTwo = 10.0

;;DDR songwriting
float line1 = 71141423142311223344114422334144320.00

int Iterator = 0 ;;this is the iterator used for iterating through the string that is being u
bool InProgress = false
|

Function IterateThroughFloatAddToArray(int[] ArrayToAddTo,float IterateThroughThis
;;Debug.messagebox("I am attempting to compile the array!")
float GetTheFirstDigitOfThis = IterateThroughThisFloat
;;debug.messagebox("The float to be compiled is:" + (GetTheFirstDigitOfThis as st
While Math.floor(GetTheFirstDigitOfThis / 10) != 0
    int magnitude = -1
    float temp = getTheFirstDigitOfThis

    While temp >= 1
        temp = temp / 10
        magnitude = magnitude + 1
```

It truly feels like writing code by hand on papyrus



Okay it's working, what are  
the other problems?

# Problem: What Happens When There Are Two Arrows In One Lane?

A priority system was created, whereupon each instance of the arrow was assigned a priority based on the global priority, the more arrows, the greater the global priority climbed. An arrows would not send its score until it reached the highest priority (zero), arrows when they reached the end of the lane would broadcast to all other arrows to reduce their priority and decrement the global priority.

Blah blah blah let's see it work

It does work!

<https://www.youtube.com/watch?v=A08AmDJaAWY>

Comedy Category Entry wooh

THANK YOU FOR READING OR WATCHING