H

Set ga
put pla

Has mouse
clicked?

No

Yes

Set gameScreen = 1,
put player character in
center

Display that there
is no time left.

Has the player
clicked more or
equal to required?

Yes

Add item to
inventory and set
gameScreen = 1

Write out time to

Has mouse been
clicked?

Set ga
put pla

Variables:

global:
PlayerX, PlayerY
Charact c,p
Bullsystem bs
NPC[ ] people. Item[ ] possibleItems
int gameScreen
ArrayList inventory

charact:
Pvector loc
float diam

Item:

NPC :
PVector loc
float diam

Balance:
balanceX
balanceAngle
balanceEnd
balanceTime

Bulls/BullGame:
PVector loc, vel, mouse
float acc, diam, startTime
int t, count, interval, gameScreenB
String T

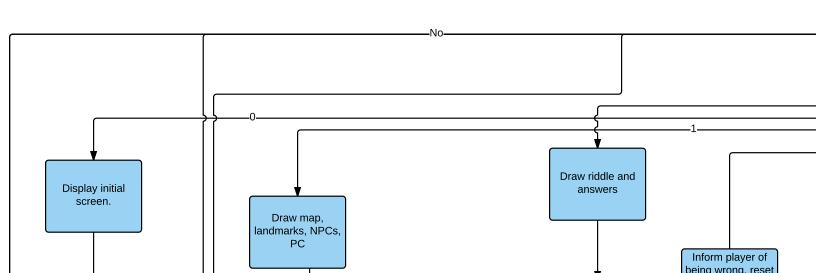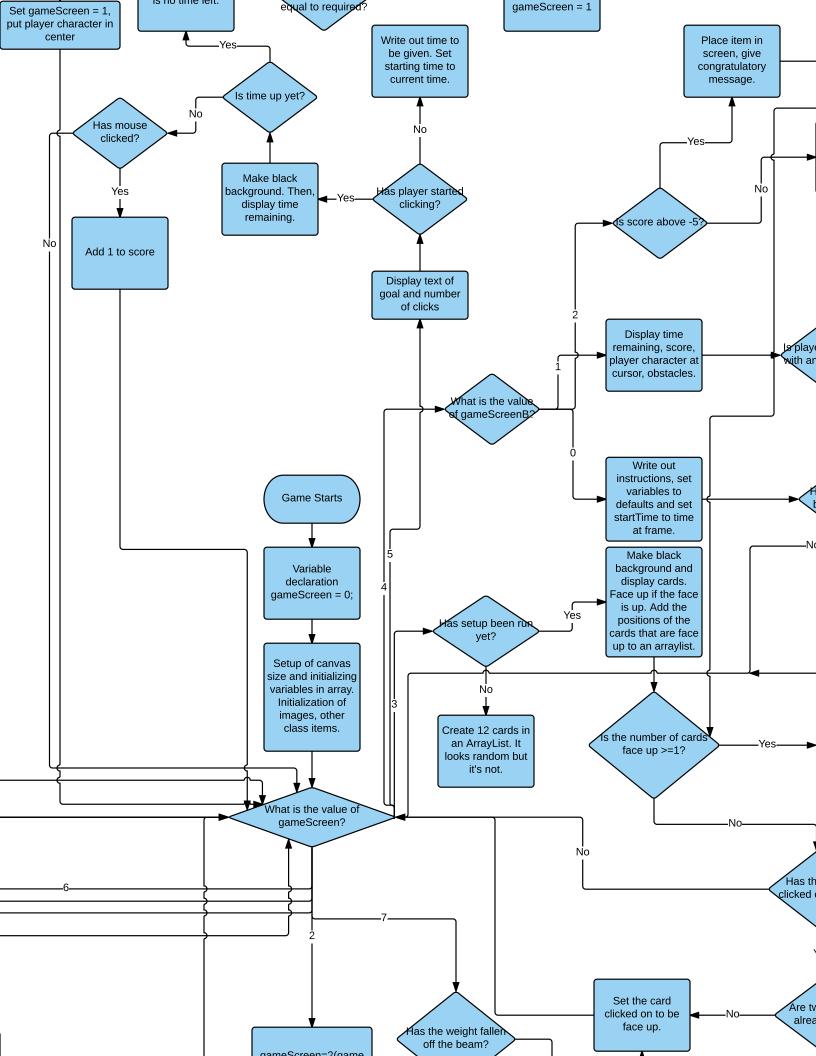**Cards/CardGame:**
boolean up
int id, moves
PVector pos
ArrayList cards, faceUp

Riddles:
PVector loc
float wid

No

No

0

1

Display initial
screen.

Draw map,
landmarks, NPCs,
PC

Draw riddle and
answers

Inform player of
being wrong, reset

Flowchart nodes and connectors:

- **Set gameScreen = 1, put player character in center**
- **Is no time left.**
- **equal to required?**
- **gameScreen = 1**
- **Place item in screen, give congratulatory message.**
- **Is time up yet?** (Yes / No)
- **Write out time to be given. Set starting time to current time.**
- **Has mouse clicked?** (Yes / No)
- **Make black background. Then, display time remaining.**
- **Has player started clicking?** (Yes / No)
- **Is score above -5?** (Yes / No)
- **Add 1 to score**
- **Display text of goal and number of clicks**
- **Display time remaining, score, player character at cursor, obstacles.**
- **Is player ... with an ...** (1)
- **What is the value of gameScreenB?** (2 / 1 / 0)
- **Write out instructions, set variables to defaults and set startTime to time at frame.**
- **Game Starts**
- **Variable declaration gameScreen = 0;**
- **Make black background and display cards. Face up if the face is up. Add the positions of the cards that are face up to an arraylist.**
- **Has setup been run yet?** (Yes / No)
- **Setup of canvas size and initializing variables in array. Initialization of images, other class items.**
- **Create 12 cards in an ArrayList. It looks random but it's not.**
- **Is the number of cards face up >=1?** (Yes / No)
- **What is the value of gameScreen?** (6 / 7 / 2 / 5 / 4 / 3)
- **Has th... clicked ...**
- **No**
- **gameScreen=2(game...**
- **Has the weight fallen off the beam?**
- **Set the card clicked on to be face up.**
- **Are tw... alrea...** (No)

```mermaid
flowchart

Q1{Has mouse been clicked?} -->|Yes| A1[Set gameScreen to 1]
Q1 -->|No| J1

B1[Tell player to try harder] --> Q2{Has mouse been clicked?}
Q2 -->|Yes| A2[Set gameScreenB to 1]
A1 --> J1

Q3{Is any obstacle at bottom of screen?} -->|No| Q4
Q3 -->|Yes| C1[Change that obstacle's properties to original]
C1 --> Q5

Q4{Is player in contact with any obstacle?} -->|Yes| C2[Change obstacle's properties to original, increment score by -1,]
C2 --> Q3

Q5{Is score less than -5, and time remaining more than 0?} -->|Yes| C3[Change gameScreenB to 2]
Q5 -->|No| Q6

Q6{Is time less than or equal to 0?} -->|Yes| C3
Q6 -->|No| X

Q7{Has the screen been clicked?} -->|Yes| C4[set gameScreenB to 1]
Q7 -->|No| N1

Q8{Are the two cards the same?} -->|Yes| D1[Remove all cards with the same face.]
Q8 -->|No| Q9

D1 --> Q10{Is the number of cards remaining 0?}
Q10 -->|No| Q9
Q10 -->|Yes| D2[Add that NPC's item to the inventory. Then, gameScreen = 1;]

Q9{Has the mouse clicked on a card?} -->|Yes| Q11{Are two cards already up?}
```
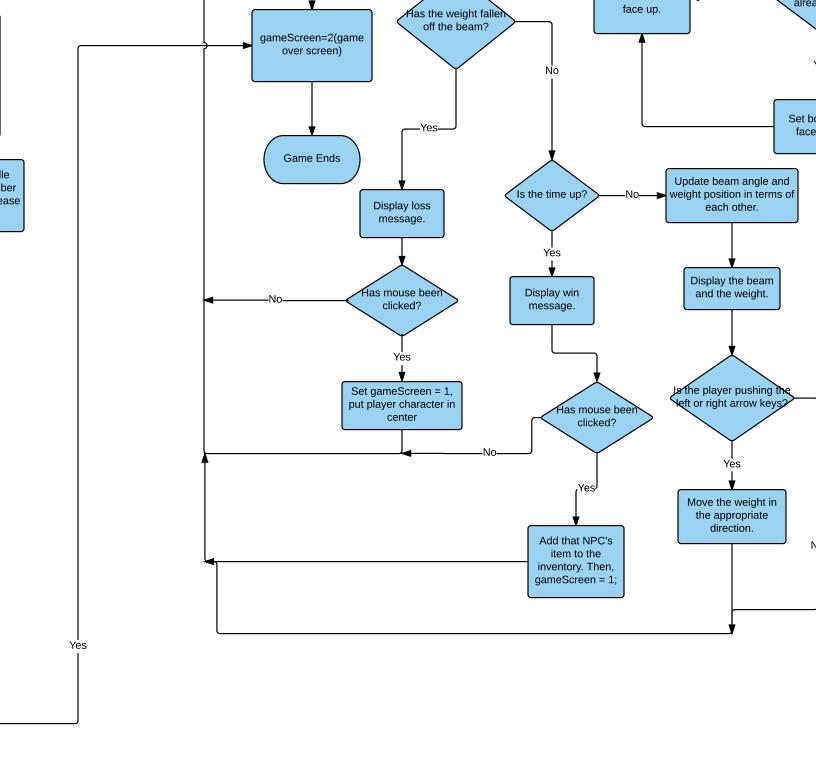
PC

Has the mouse been clicked? — No

Yes

gameScreen = 1;

is character overlapping People[5] (goaltemple)?

Yes

z clicked?

Yes

temple unlocked (all items obtained)?

Is player character overlapping NPC?

Yes

Has NPC's item already been acquired? — No → **Display dialog offering challenge.**

Yes

Display appropriate dialog

Display inventory

No

Has 'z' been pressed?

No

Yes

Change gameScreen to value of that character's game.

No

No

Has mouse clicked on correct answer? — No → **Inform player of being wrong, reset riddle question tracker to 1. Set player's position to be in the center of screen and change gameScreen to 1**

Yes

Was it the last riddle? — No → **Change riddle question number tracker to increase by one**

Yes

Add key to inventory, change gameScreen to 1

face up.

already

Set bo
face

Has the weight fallen
off the beam?

No

gameScreen=2(game
over screen)

Game Ends

lle
ber
ease

Yes

Display loss
message.

Update beam angle and
weight position in terms of
each other.

Is the time up? —No→

No— Has mouse been
clicked?

Yes

Display the beam
and the weight.

Yes

Display win
message.

Set gameScreen = 1,
put player character in
center

Is the player pushing the
left or right arrow keys?

No— Has mouse been
clicked?

Yes

Yes

Move the weight in
the appropriate
direction.

Add that NPC's
item to the
inventory. Then,
gameScreen = 1;

N

Yes

already up?

Yes

Set both to be
face down.

nd
s of

item to the
inventory. Then,
gameScreen = 1;

he
s?

No