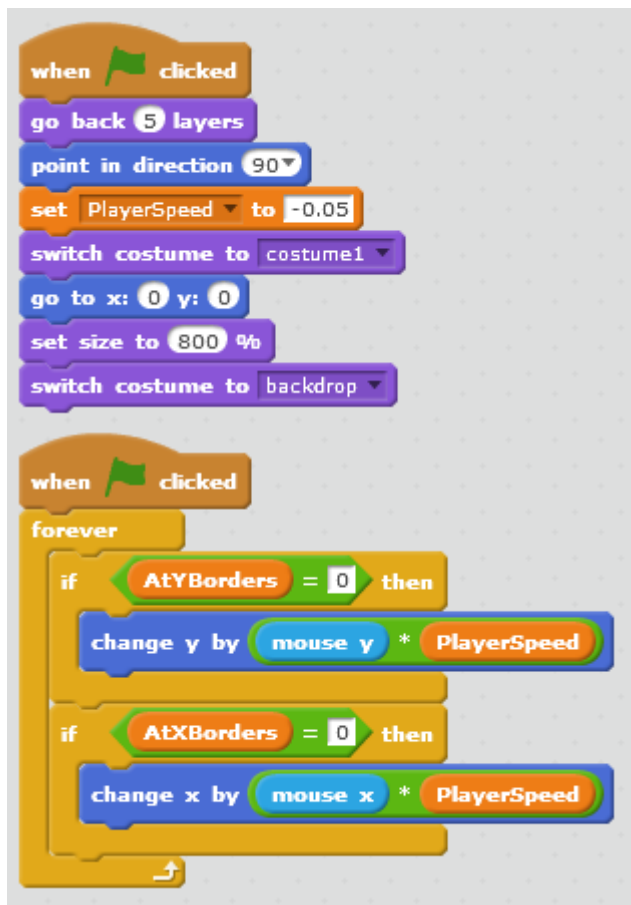


Appendix

Map Object



Character Object



The image shows a Scratch script for a character object. The script is organized into three main sections:

- When I receive PlayerEat:** This section contains three 'change' blocks: 'change size by 0.5', 'change PlayerSpeed by 0.0001', and 'change PlayerScore by 1'.
- When clicked:** This section starts with a 'forever' loop. Inside the loop, there are three 'if' blocks, each checking for a character (Dave, Steve, or John) being touched. Each 'if' block contains a 'CompareAndExecute' block for the character's score, followed by a 'broadcast' block to remove the character, a 'change size by' block for the character's size, and two 'change' blocks: one for PlayerSpeed (multiplied by 0.0001 and the character's score) and one for PlayerScore (5 plus the character's score).



The image shows a Scratch script for a character object. The script is organized into three main sections:

- When clicked:** This section contains three blocks: 'set size to 10 %', 'go to x: 6 y: 4', and 'go to x: 6 y: 4'.

```

define SortRankings
  set i to 1
  set temp to 0
  repeat until i > length of Score + 1
    set j to 2
    repeat until j > length of Score + 1 - i
      if item j of Score > item j - 1 of Score then
        set temp to item j - 1 of Score
        replace item j - 1 of Score with item j of Score
        replace item j of Score with temp
        set temp to item j - 1 of Rank
        replace item j - 1 of Rank with item j of Rank
        replace item j of Rank with temp
      change j by 1
    change i by 1
  
```

```

when clicked
  forever
    if touching color [black] and mouse y > 0 then
      set AtYBorders to 1
    else
      if touching color [black] and mouse y < 0 then
        set AtYBorders to 1
      else
        set AtYBorders to 0
    if touching color [black] and mouse x > 0 then
      set AtXBorders to 1
    else
      if touching color [black] and mouse x < 0 then
        set AtXBorders to 1
      else
        set AtXBorders to 0
  
```

```
when clicked
  show
  go to front
  set PlayerScore to 0
  set DaveScore to 0
  set SteveScore to 0
  set JohnScore to 0
  delete all of Score
  add PlayerScore to Score
  add DaveScore to Score
  add SteveScore to Score
  add JohnScore to Score
  delete all of Rank
  add Player to Rank
  add Bot Dave to Rank
  add Bot Steve to Rank
  add Bot John to Rank
  SortRankings
  forever
    set PlayerSize to size
    SearchPlayer
    SortRankings
    if PlayerScore > 99 then
      broadcast win
    if DaveScore > 99 then
      broadcast GameOver
    if SteveScore > 99 then
      broadcast GameOver
    if JohnScore > 99 then
      broadcast GameOver

define SearchPlayer
  set count to 1
  repeat length of Score
    if item count of Rank = Player then
      replace item count of Score with PlayerScore
    if item count of Rank = Bot Dave then
      replace item count of Score with DaveScore
    if item count of Rank = Bot Steve then
      replace item count of Score with SteveScore
    if item count of Rank = Bot John then
      replace item count of Score with JohnScore
    change count by 1

define CompareAndExecute targetscore
  if PlayerScore < targetscore or PlayerScore = targetscore then
    hide
    broadcast GameOver
```

x: 6
y: 4

Dot Object

```
when I start as a clone
  show
  RandomizeSpawn
  add x position to dotxvalue
  add y position to dotyvalue
  set myindex to length of dotxvalue
  forever
    go to front
    if touching edge? then
      hide
      change x by mouse x * PlayerSpeed
      change y by mouse y * PlayerSpeed
    else
      show
      if not touching Map? then
        delete myindex of dotyvalue
        delete myindex of dotxvalue
        delete this clone
      if AtXBorders = 0 then
        change x by mouse x * PlayerSpeed
      if AtYBorders = 0 then
        change y by mouse y * PlayerSpeed
    TouchChar
    TouchDave
    TouchSteve
    TouchJohn
```

```
when clicked Mother Dot
  hide
  forever
    wait 1 secs
    change color effect by pick random 25 to 100
    create clone of myself
```

```
define TouchDave
  if touching Dave? then
    broadcast DaveEat
    delete myindex of dotyvalue
    delete myindex of dotxvalue
    delete this clone
```

```
define TouchSteve
  if touching Steve? then
    broadcast SteveEat
    delete myindex of dotyvalue
    delete myindex of dotxvalue
    delete this clone
```

```
when clicked
  delete all of dotxvalue
  delete all of dotyvalue
```

```
define TouchJohn
  if touching John? then
    broadcast JohnEat
    delete myindex of dotyvalue
    delete myindex of dotxvalue
    delete this clone
```

```
define RandomizeSpawn
  set temp to pick random 1 to 4 Randomize Spawn Location
  if temp = 1 then
    go to x: pick random -235 to 235 y: 175
  if temp = 2 then
    go to x: pick random -235 to 235 y: -175
  if temp = 3 then
    go to x: 235 y: pick random -175 to 175
  if temp = 4 then
    go to x: -235 y: pick random -175 to 175
```

```

define TouchChar
  if touching Character ? then
    broadcast PlayerEat
    delete myindex of dotyvalue
    delete myindex of dotxvalue
    delete this clone
  
```

Dave Object

```

when I receive DaveEat
  change size by 0.5
  change DaveScore by 1
  change DaveSpeed by -0.1

when clicked
  set DaveSpeed to 5
  hide
  set size to 10 %
  go to x: -240 y: -180

when clicked
  forever
    if ATYBorders = 0 then
      change y by mouse y * PlayerSpeed
    if ATXBorders = 0 then
      change x by mouse x * PlayerSpeed

when I receive RemoveDave
  hide
  stop other scripts in sprite

define SimulateEating
  wait pick random 0 to 3 secs
  change DaveScore by pick random 0 to 3

define PointTowards x y
  if x > x position then
    point in direction 90 - atan of y - y position / x - x position
  else
    point in direction -90 - atan of y - y position / x - x position
  
```

```
when clicked
  forever
    if touching Steve ? then
      if DaveScore < SteveScore or DaveScore = SteveScore then
        broadcast RemoveDave
        broadcast SteveEatDave
        change SteveSpeed by -0.1 * DaveScore
        change SteveScore by DaveScore
      else
        broadcast RemoveSteve
        change size by SteveSize
        change DaveSpeed by -0.1 * SteveScore
        change DaveScore by SteveScore
    if touching John ? then
      if DaveScore < JohnScore or DaveScore = JohnScore then
        broadcast RemoveDave
        broadcast JohnEatDave
        change JohnSpeed by -0.1 * DaveScore
        change JohnScore by DaveScore
      else
        broadcast RemoveJohn
        change size by JohnSize
        change DaveSpeed by -0.1 * JohnScore
        change DaveScore by JohnScore
```

```

define AppearChance chance
if chance = 5 then
  go to front
  RandomizeSpawn
  set size to 10 %
  change size by 0.5 * DaveScore
  change DaveSpeed by -0.1 * DaveScore
  show
  repeat until x position > 250 or x position < -250 or y position > 190 or y position < -190 or not touching Map ?
  change size by size * 2
  if DaveScore > PlayerScore or DaveScore = PlayerScore then
    point towards Character
    move DaveSpeed steps
  else
    PointTowards item 1 of dotvalue item 1 of dotvalue
    move DaveSpeed steps
  set size to 10 %
  change size by 0.5 * DaveScore
hide

```

```

when clicked
  forever
    set DaveSize to size
    AppearChance pick random 1 to 10
    SimulateEating

define RandomizeSpawn
  set temp to pick random 1 to 4
  if temp = 1 then
    go to x: pick random -235 to 235 y: 180
  if temp = 2 then
    go to x: pick random -235 to 235 y: -180
  if temp = 3 then
    go to x: 235 y: pick random -175 to 175
  if temp = 4 then
    go to x: -235 y: pick random -175 to 175

```


Steve Object

```
when I receive SteveEat
  change size by 0.5
  change SteveScore by 1
  change SteveSize by -0.1

when clicked
  set SteveSpeed to 5
  hide
  set size to 10 %
  go to x: -240 y: -180

when clicked
  forever
    if ATYBorders = 0 then
      change y by mouse y * PlayerSpeed
    if ATXBorders = 0 then
      change x by mouse x * PlayerSpeed

when I receive SteveEatDave
  change size by DaveSize

when clicked
  forever
    if touching John ? then
      if SteveScore < JohnScore or SteveScore = JohnScore then
        broadcast RemoveJohn
        broadcast JohnEatSteve
        change JohnSpeed by -0.1 * SteveScore
        change JohnScore by SteveScore
      else
        broadcast RemoveJohn
        change size by JohnSize
        change SteveSpeed by -0.1 * JohnScore
        change SteveScore by JohnScore
```

```
define AppearChance chance
  if chance = 5 then
    go to front
    RandomizeSpawn
    set size to 10 %
    change size by 0.5 * DaveScore
    change DaveSpeed by -0.1 * DaveScore
    show
    repeat until x position > 250 or x position < -250 or y position > 190 or y position < -190 or not touching Map ?
      change size by size * 2
      if SteveScore > PlayerScore or SteveScore = PlayerScore then
        point towards Character
        move SteveSpeed steps
      if PlayerScore > SteveScore then
        PointTowards item 1 of dobvalue item 1 of dotyvalue
        move SteveSpeed steps
      set size to 10 %
      change size by 0.5 * SteveScore
    hide
```

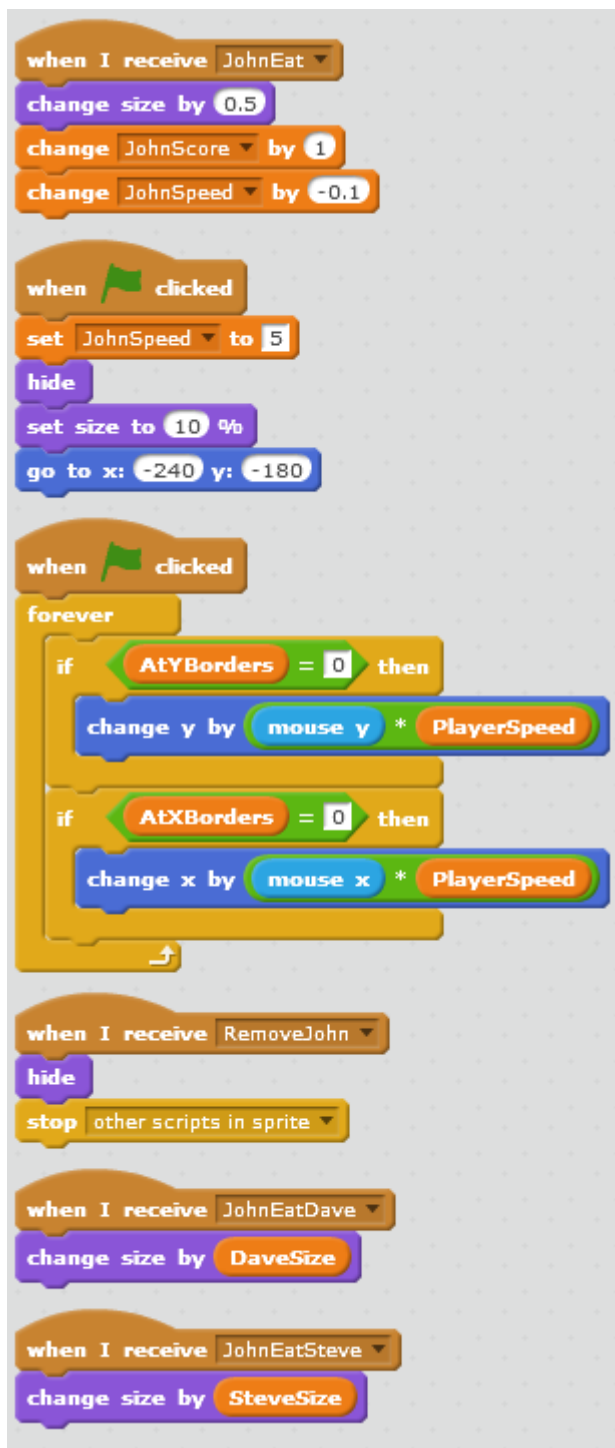
```
define SimulateEating
  wait pick random 0 to 3 secs
  change SteveScore by pick random 0 to 3
```

```
when I receive RemoveSteve
  hide
  stop other scripts in sprite
```

```
when clicked
  forever
    set SteveSize to size
    AppearChance pick random 1 to 10
    SimulateEating
```

```
define PointTowards x y
  if x > x position then
    point in direction 90 - atan of y - y position / x - x position
  else
    point in direction -90 - atan of y - y position / x - x position
```

John Object



```
when I receive JohnEat
  change size by 0.5
  change JohnScore by 1
  change JohnSpeed by -0.1

when clicked
  set JohnSpeed to 5
  hide
  set size to 10 %
  go to x: -240 y: -180

when clicked
  forever
    if AtYBorders = 0 then
      change y by mouse y * PlayerSpeed
    if AtXBorders = 0 then
      change x by mouse x * PlayerSpeed

when I receive RemoveJohn
  hide
  stop other scripts in sprite

when I receive JohnEatDave
  change size by DaveSize

when I receive JohnEatSteve
  change size by SteveSize
```

The image shows a Scratch script for a character named John. The script is organized into several event-driven blocks:

- JohnEat:** When the character receives the 'JohnEat' message, its size increases by 0.5, its score increases by 1, and its speed decreases by 0.1.
- Clicked (Initial Setup):** When the green flag is clicked, the character's speed is set to 5, it is hidden, its size is set to 10%, and it is moved to the coordinates (-240, -180).
- Clicked (Movement):** When the character is clicked, it enters a 'forever' loop. Inside the loop, it checks if it is at the top or bottom borders (AtYBorders = 0). If so, it moves vertically by the mouse's y-coordinate multiplied by its speed. It also checks if it is at the left or right borders (AtXBorders = 0). If so, it moves horizontally by the mouse's x-coordinate multiplied by its speed.
- RemoveJohn:** When the character receives the 'RemoveJohn' message, it is hidden and all other scripts in the sprite are stopped.
- JohnEatDave:** When the character receives the 'JohnEatDave' message, its size increases by 'DaveSize'.
- JohnEatSteve:** When the character receives the 'JohnEatSteve' message, its size increases by 'SteveSize'.

```

define AppearChance chance
if chance = 5 then
  go to front
  RandomizeSpawn
  set size to 10 %
  change size by 0.5 * JohnScore
  change JohnSpeed by -0.1 * JohnScore
  show
  repeat until x position > 250 or x position < -250 or y position > 190 or y position < -190 or not touching Map ?
  change size by size * 2
  if JohnScore > PlayerScore or JohnScore = PlayerScore then
    point towards Character
    move JohnSpeed steps
  if PlayerScore > JohnScore then
    PointTowards item 17 of dotxvalue item 17 of dotyvalue
    move JohnSpeed steps
  set size to 10 %
  change size by 0.5 * JohnScore
hide

```

```

define CompareAndExecute targetsize
if JohnScore < targetsize or JohnScore = targetsize then
  broadcast GameOver

define PointTowards x y
if x > x position then
  point in direction 90 - atan of y - y position / x - x position
else
  point in direction -90 - atan of y - y position / x - x position

define SimulateEating
wait pick random 0 to 3 secs
change JohnScore by pick random 0 to 3

```

```

when clicked
  forever
    set JohnSize to size
    AppearChance pick random 1 to 10
    SimulateEating

define RandomizeSpawn
  set temp to pick random 1 to 4
  if temp = 1 then
    go to x: pick random -235 to 235 y: 180
  if temp = 2 then
    go to x: pick random -235 to 235 y: -180
  if temp = 3 then
    go to x: 235 y: pick random -175 to 175
  if temp = 4 then
    go to x: -235 y: pick random -175 to 175

```

Sprite1 Object

```

when clicked
  hide

when I receive GameOver
  go to front
  show
  stop all

```

Sprite2 Object

```

when clicked
  hide

when I receive win
  go to front
  show
  stop all

```