Graphical Programming Reference Sheet

CS IN SCHOOLS

Complete documentation can be found here

Defining Colours

```
background(R, G, B)
# R - The amount of red (0-255)
# G - The amount of green (0-255)
# B - The amount of blue (0-255)
# Try this Colour Picker!
```

Setting the Canvas Size

```
setCanvasSize(width, height)
# width - the width of the canvas
# height - the height of the canvas
```

The Basics

```
fill(R, G, B) # Sets colour of next drawing
background(R, G, B) # Sets background colour


# R - The amount of red (0-255)
# G - The amount of green (0-255)
# B - The amount of blue (0-255)
```

Useful Shapes

```
rect(x, y, width, height)
# x - the x location of the bottom left corner
# y - the y location of the bottom left corner
width - the width of the rectangle
height - the height  of the rectangle


circle(x, y, radius)
# x - the x location of the centre of the circle
# y - the y location of the centre of the circle
# radius - the radius of the circle (the size)

line(x1, y1, x2, y2)
# x1 - the x location of the start of the line
# y1 - the y location of the end of the line
# x2 - the x location of the start of the line
# y2 - the y location of the end of the line


triangle(x1, y1, x2, y2, x3, y3)
# x1, y1 - a point of the triangle
# x2, y2 - a point of the triangle
# x3, y3 - a point of the triangle

# More shapes can be found here!
```

while Loops

```
# This code animates a circle!

x = 100
y = 100

while y <= 200:
      background(48, 221, 174)
      circle(x, y, 50)
      x = x + 50
      y = y + 50
      sleep(0.5)
```

Function Definitions

```
# This code creates a tree function
# NOTE: this won't draw a tree by itself,
# you still have to call the function!


def tree(x, y):
    fill(164, 116, 73)
    noStroke()
    rect(x, y, 40, 120)
    fill(0, 255, 40)
    circle(x + 20, y + 180, 80)
```

Calling a Function

```
# This code calls the tree function
# defined above - now a tree will be drawn!

tree(164, 116)
```

For Loops

```
# This code draws 10 circles


for x in range(50, 501, 50):
    circle(x, 50, 20)
```

Creating Sprites

```
ball = CircleSprite(50, 100, 30)
ghost = TextSprite("👻", 50, 100, 30)


More sprites and their info can be found here!
```

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Sprite Attributes

```
ghost = TextSprite("👻", 50, 100, 30)

print(ghost.x) # prints the existing x
print(ghost.y) # prints the existing y
print(ghost.width) # prints sprite width
print(ghost.height) # prints sprite height

ghost.speedX = 1 # creates speedX
ghost.speedY = -1 # creates speedY
```

Sprite Methods

```
ghost = TextSprite("👻", 50, 100, 30)
food = CircleSprite(100, 300, 10)

# Draw the ghost sprite
ghost.draw()

# Move the sprite to the specified x and y
food.moveTo(200, 300)
food.draw()

# Add the specified x and y to the current
# x and y
ghost.moveBy(1, 1)
ghost.draw()

# Set the colour of the sprite
food.setColour(200, 100, 40)
food.draw()

# Check for sprite collision
if ghost.overlaps(food):
    # <do something>
```

Useful Keys

A - Z	KEY_A, KEY_B, …, KEY_Z
0 - 9	KEY_0, KEY_1, …, KEY_9
Left Arrow	KEY_LEFT
Right Arrow	KEY_RIGHT
Up Arrow	KEY_UP
Down Arrow	KEY_DOWN
Space Bar	KEY_SPACE
Enter	KET_ENTER

Fun Emojis

🤡	👻	👾	🐙
🦀	⚡🪰	🏈	🎾
😁	🦔	🦋	😻
🐭	💃	🧟‍♀️	🧚‍♀️

For More Emojis

ON MAC	Press the ‘fn’ key - it’s usually on the bottom left of your keyboard. 
ON WINDOWS	Press ‘windows logo key’ + ‘.’ - you’ll have to press them at the same time.