



Tutorial

CPSC 217

Function

- What is a function?
 - A named set of statements
 - a function should perform a clearly defined specific Functions
 - May take parameters (Passing values to the function)
 - May return values

- General form:

```
def functionName(parameters):  
    body
```

return values ← Optional

Optional

Task 01:

- Write a program that draw the following 5 music notes using simple graphics.
 - You must define a function to draw a single music note.



Task 01: Solution

```
from SimpleGraphics import *
```

Function Name

Function Parameters

```
def music_note(x, y, color):
```

```
    setColor(color)
```

```
    rect(0+x,0+y,100,10)
```

```
    rect(0+x,20+y,100,10)
```

```
    rect(0+x,0+y,10,100)
```

```
    ellipse(-30+x,90+y,40,30)
```

```
    rect(90+x,0+y,10,100)
```

```
    ellipse(60+x,90+y,40,30)
```

Function Body

```
background("white")
```

```
music_note(50,100,"red")
```

```
music_note(200,100,"black")
```

```
music_note(350,100,"blue")
```

```
music_note(500,100,"yellow")
```

```
music_note(650,100,"green")
```

**Function Calling
with different
parameter values**

**Function
Calling**

Best Approach

```
from SimpleGraphics import *
```

```
music_note(x, y, color):  
    setColor(color)  
    rect(0+x,0+y,100,10)  
    rect(0+x,20+y,100,10)  
    rect(0+x,0+y,10,100)  
    ellipse(-30+x,90+y,40,30)  
    rect(90+x,0+y,10,100)  
    ellipse(60+x,90+y,40,30)
```

```
def main():  
    background("white")  
    music_note(50,100,"red")  
    music_note(200,100,"black")  
    music_note(350,100,"blue")  
    music_note(500,100,"yellow")  
    music_note(650,100,"green")
```

```
main()
```



Function Documentation

- Function documentation is very important for a Function.
- **Function header documentation:**
 - Say about its purpose (What it does)
 - Briefly describe the parameters
 - What it will return.
- Detail Documentation is not necessary for **Main function.**



Task 1 solution with proper documentation



```
from SimpleGraphics import *
```

#Definition: Draw a music note into a target location with desire color

#@param x: x coordinate of the location

#@param y: y coordinate of the location

#@param color: Desire color name

```
def music_note(x, y, color):  
    setColor(color)  
    rect(0+x,0+y,100,10)  
    rect(0+x,20+y,100,10)  
    rect(0+x,0+y,10,100)  
    ellipse(-30+x,90+y,40,30)  
    rect(90+x,0+y,10,100)  
    ellipse(60+x,90+y,40,30)
```

Main function: Your program starts from here.

```
def main():  
    background("white")  
    music_note(50,100,"red")  
    music_note(200,100,"black")  
    music_note(350,100,"blue")  
    music_note(500,100,"yellow")  
    music_note(650,100,"green")
```

```
main()
```




My PPT slides

- ▶ You can find my created PPT slides at the following link:

<https://sites.google.com/site/samicsemist/cpsc217win16>