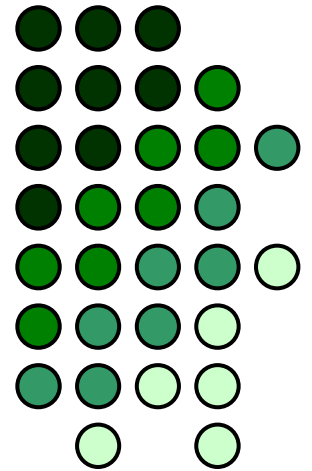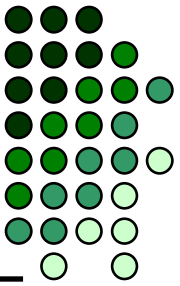# Classes and Objects

Paul Inventado

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Abstraction

- Hiding information and implementation through specialized entities

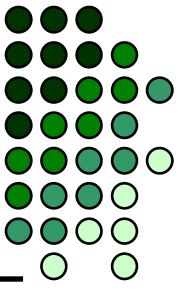**Color: White**
Size: 2.5x1.5 in
....

on() - ...
off() - ...

Color: White
Memory: 4GB
# of Songs: 594
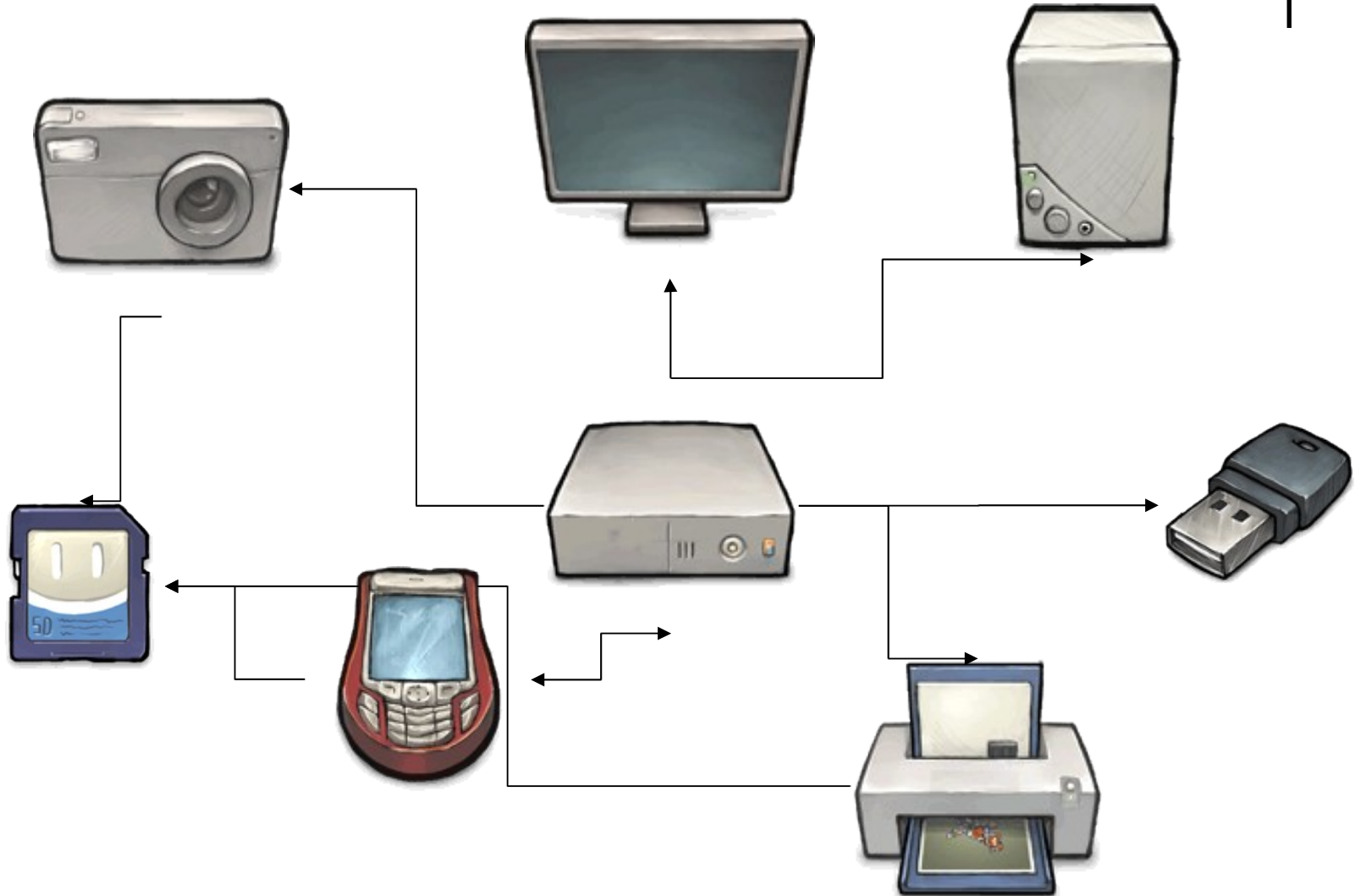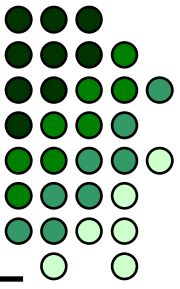**play() - ...**
pause() - ...
stop() - ...

Color: White
Memory: 120GB
Processor: Core 2 Duo
Graphics: Nvidia 128MB
boot() - ...
playMovie() - ...
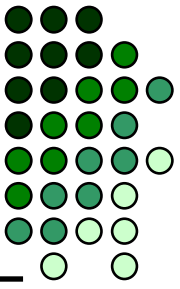shutdown() - ...

Advantages of Abstraction

- Less complex view of the system

- No need to worry about the implementation of another entity

- Other entities are assumed to work
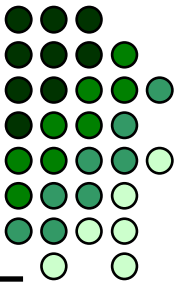
Advantages of Abstraction

Abstract Data Types
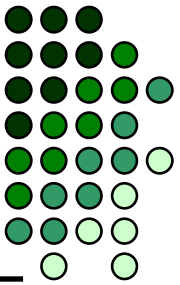
- data structure

- contains single or multiple information

- contains a set of operations

- may be defined by a programmer (user defined data type)
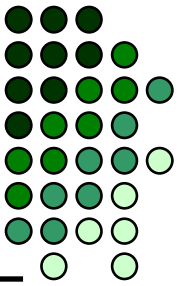
Classes

- actual representation of abstract data types in OOP
- contains attributes and methods
  - attributes – properties of the class
  - methods – operations of the class
- serves as a blue print for objects

Classes

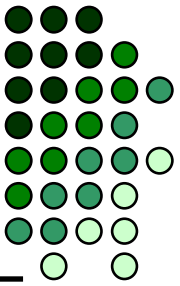| Person |
|---|
| name
gender
height
weight |
| getName()
getGender()
getHeight()
getWeight()
say(String text)
walk(int X, int Y) |

Objects

- instance of a class (follows the blue print provided by the class)
- uniquely identified by a name (identifier)
- has a state and behavior
  - state – status of the attributes
  - behavior – use of the methods

Classes and Objects

Person

name
gender
height
weight

---

getName()
getGender()
getHeight()
getWeight()
say(String text)
walk(int X, int Y)

Name: Bruce Wayne   getName()
Gender: Male   say(String text)
Height: 6'2   walk(int X, int Y)
Weight: 210 lbs   ...

Name: Joker   getName()
Gender: Male   say(String text)
Height: 6'5   walk(int X, int Y)
Weight: 191 lbs   ...

Name: Harvey Dent   getName()
Gender: Male   say(String text)
Height: 6'0   walk(int X, int Y)
Weight: 182 lbs   ...

Classes and Objects

1) Identify the classes and the objects from the list below

2) Categorize the objects that are instances of a class

Wonder Woman	UP
UST	Gloria Arroyo
Superhero	DLSU
A1	Spiderman
President	George Bush
Batman	Backstreet Boys
Boy Band	University

Classes and Objects

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