MVC

MVC

- MVC is a programming paradigm that is very commonly-used for web design.

- It is used to *abstract* away certain details from the user that are not necessary or are uninteresting for them to see, but that are essential for your site to work properly.
  - The primary motivation for this is **data security**.

MVC

- **M**odel
  - This is where the important data for the site lives, and it may be updated, referenced, or the like as part of the user experience.
- **V**iew
  - These are the pages the user sees when they are interacting with your site, usually based on interaction with the model.
- **C**ontroller
  - This is where the so-called *business logic* of your site lives. Users may submit information to the controller, which will then decide what to present to the user.

MVC

View

Model

Controller

MVC

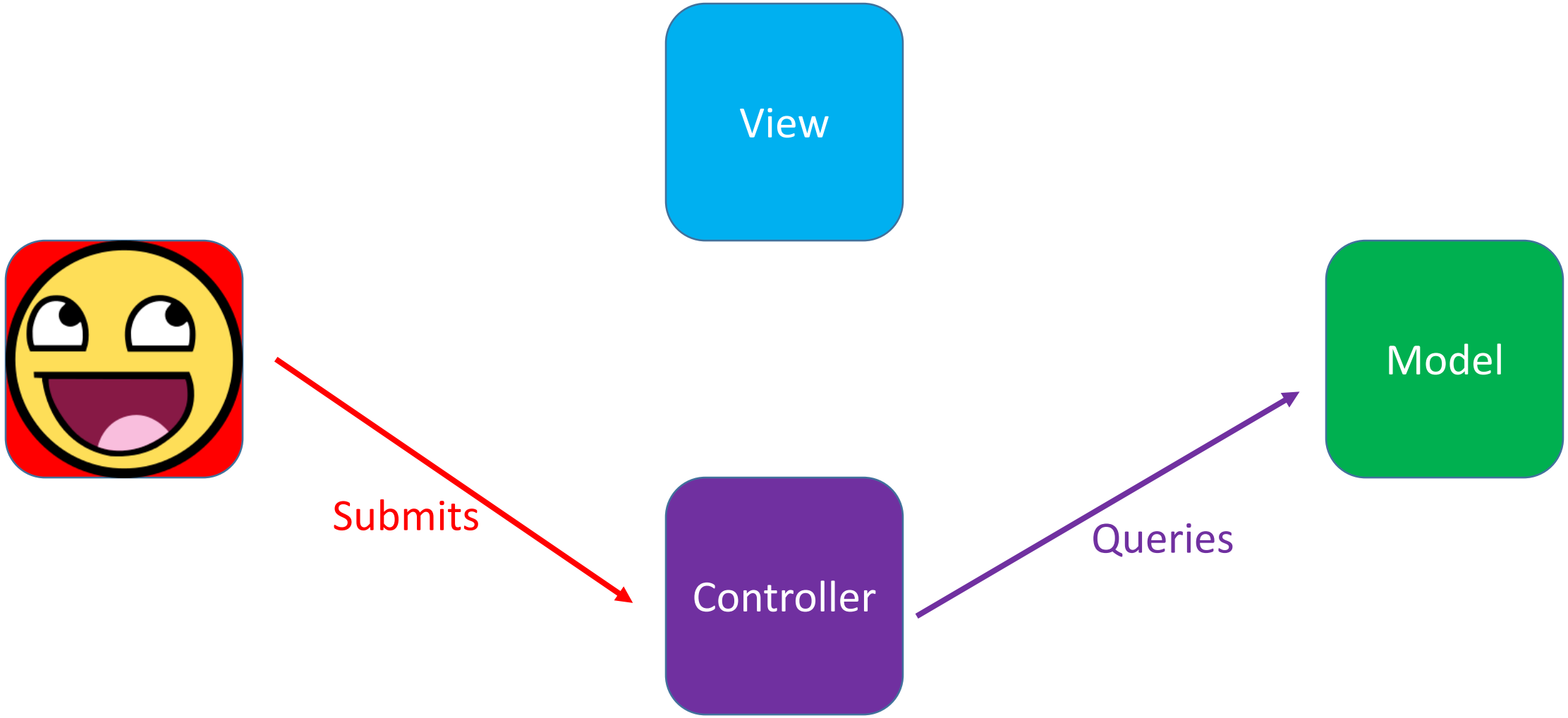
Submits

View

Controller

Model

MVC



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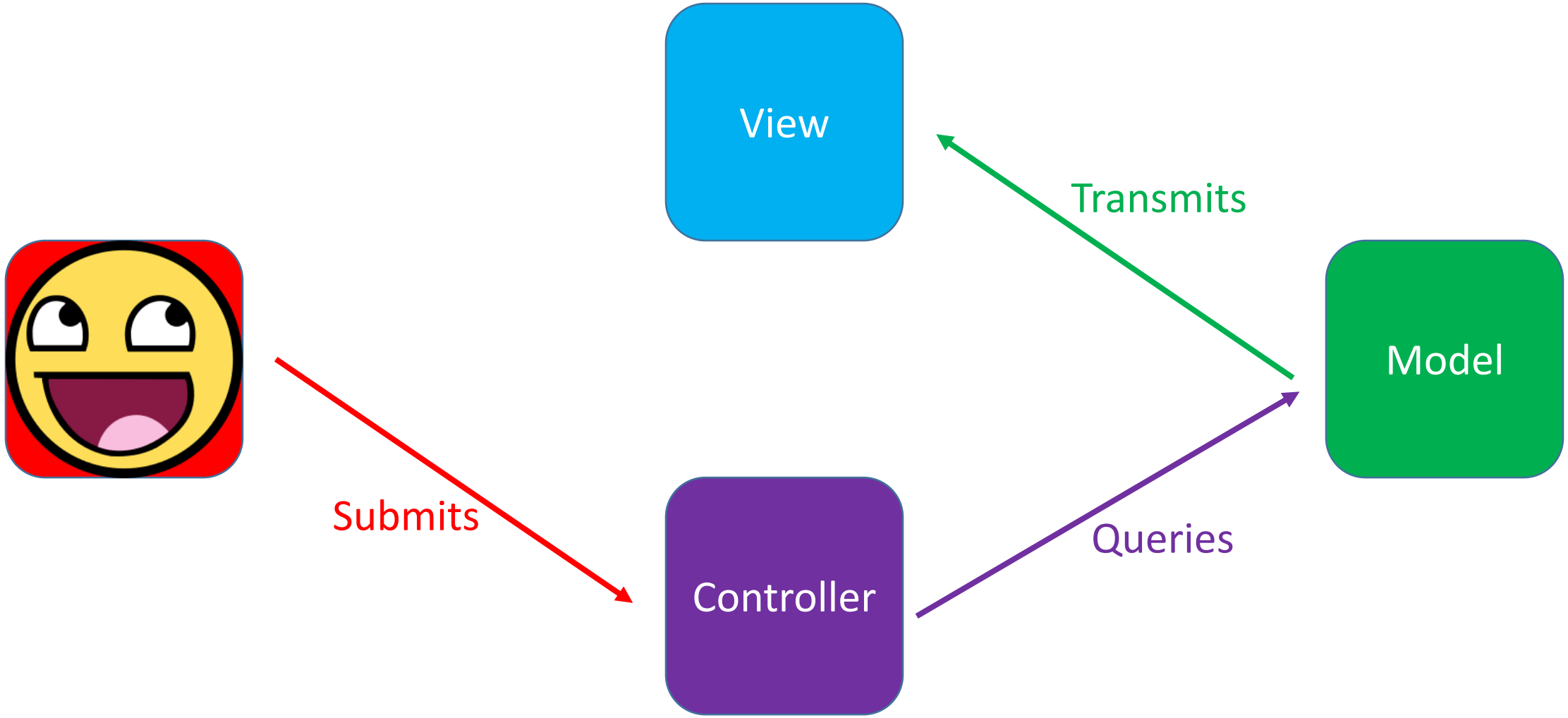

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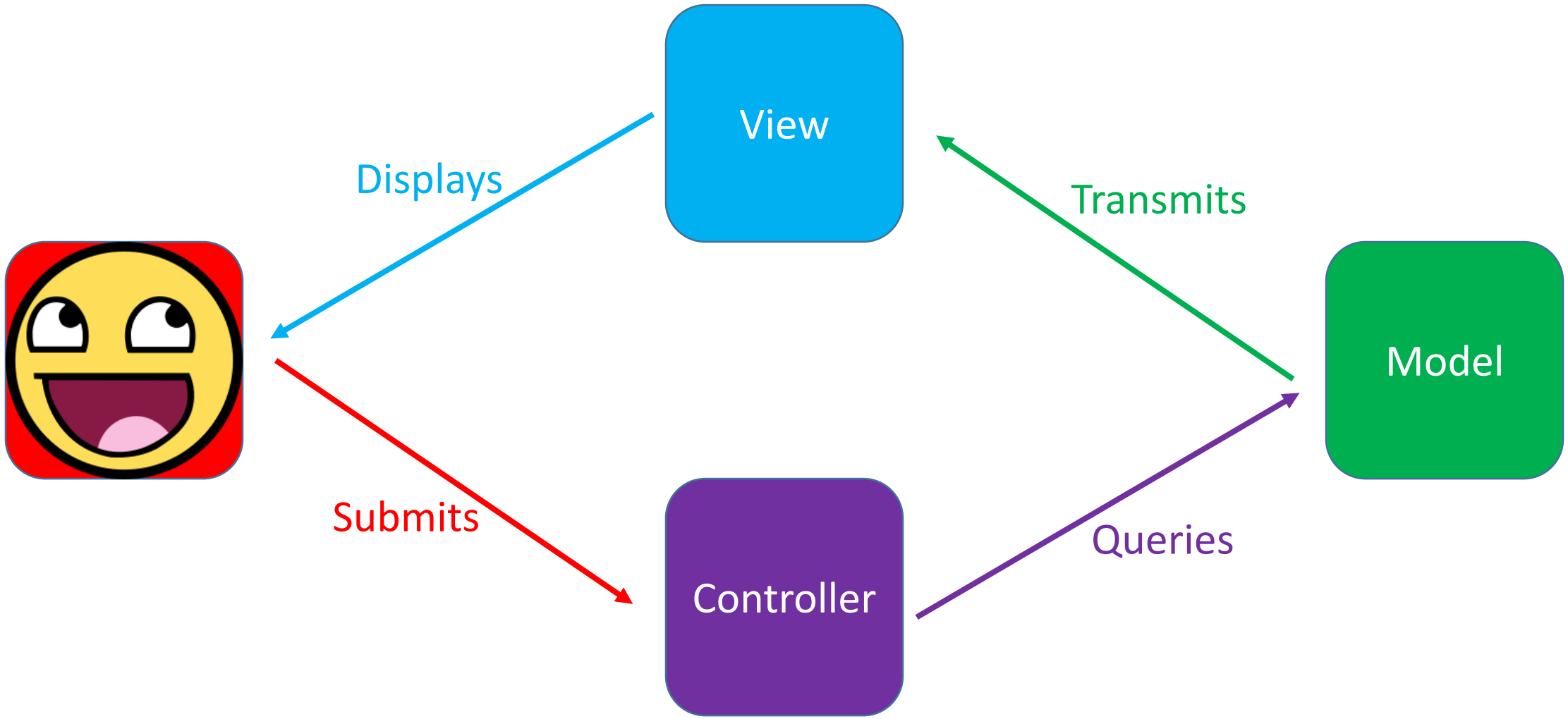
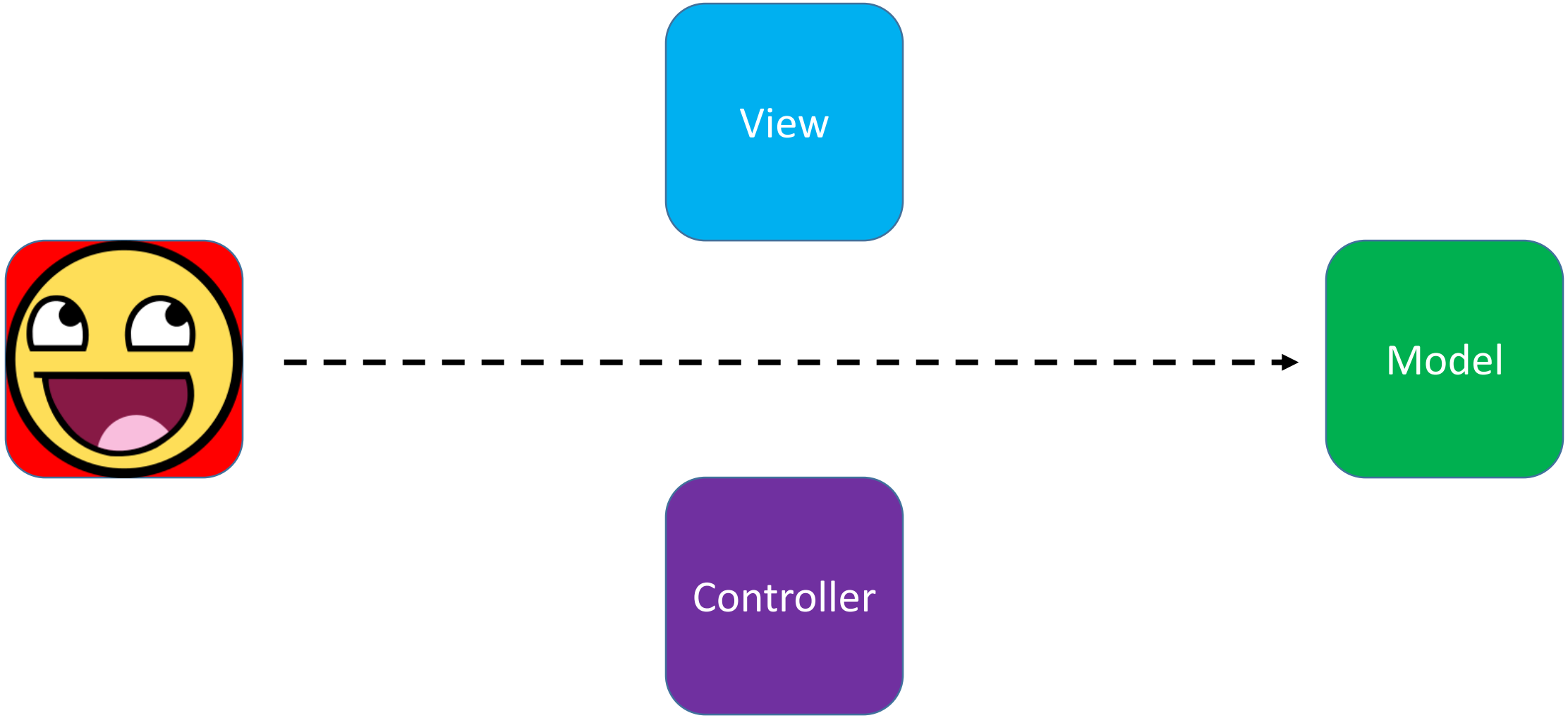

View
Displays
Transmits
Model
Submits
Controller
Queries

MVC



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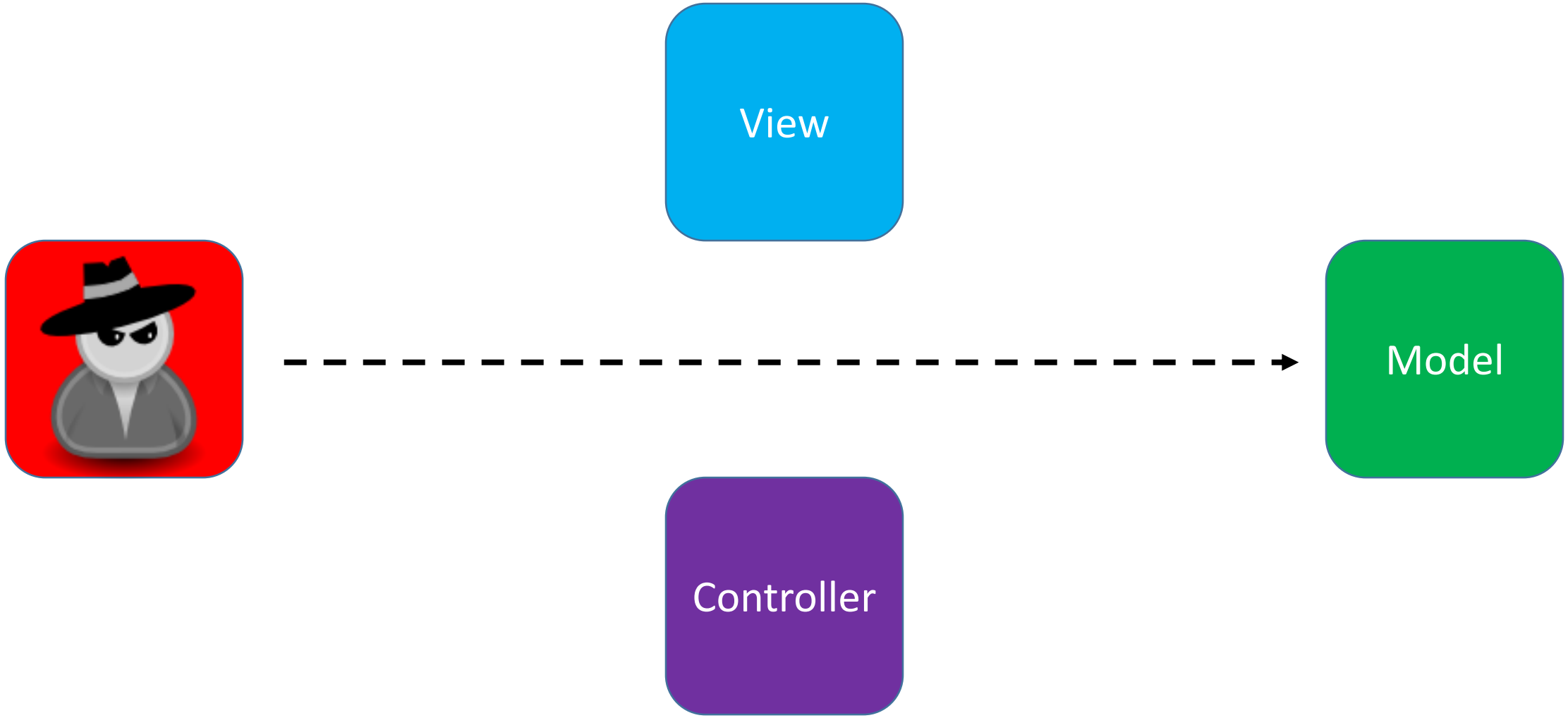

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- Adhering to this paradigm means that you separate
  - the data required for your website
  - from the logic (PHP) that implements your website's functionality
  - from the simple aesthetics and page templates

- This also means that you can make files you need in order to run your sites but that will never be accessed by users (for example, anything that you might `require_once()`) not publicly accessible.
  - Ever received a "403 Forbidden" error?

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- To change the permissions of a file to make it accessible (or not) to the public, you need to befriend a possibly-new Linux command, `chmod`.

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```
chmod <permissions> <file(s)>
```

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```
chmod 600 helpers.php
```

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```
chmod a+x includes/
```

MVC

- The so-called *octal numbers* permissions scheme assigns permissions to three categories of users simultaneously.

```
chmod 711 file
```

- This would, for example, assign you the right to read, write, and execute the file, and would allow others (specifically, your group and the world) to only execute the file.

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Octal #	Read (r)	Write (w)	Execute (x)
0	NO	NO	NO
1	NO	NO	*YES*
2	NO	*YES*	NO
3	NO	*YES*	*YES*
4	*YES*	NO	NO
5	*YES*	NO	*YES*
6	*YES*	*YES*	NO
7	*YES*	*YES*	*YES*

MVC

Octal #	Read (r)	Write (w)	Execute (x)
0			
1			
2			
3			
4			
5			
6			
7			

MVC

Octal #	Read (r)	Write (w)	Execute (x)
0	**0**	**0**	**0**
1	**0**	**0**	**1**
2	**0**	**1**	**0**
3	**0**	**1**	**1**
4	**1**	**0**	**0**
5	**1**	**0**	**1**
6	**1**	**1**	**0**
7	**1**	**1**	**1**

MVC

- The so-called *symbolic* permissions scheme also can assign permissions to three categories of users simultaneously, but is typically best used to apply (or remove) a position across the board.

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chmod a+x file
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- This would, for example, add (or maintain) the right to execute the file to all three categories.

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Reference	Class
a	all
g	group
o	others
u	user

Mode	Description
r	read access
w	write access
x	execute access

Operation	Description
+	add perm
-	remove perm
=	exactly this perm

MVC

- To check the permissions of a file, you can run the `ls` command with which you're probably quite familiar, with a small tweak, adding the `-l` flag.

```
username@ide50:~/workspace $ ls -l
```

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```
username@ide50:~/workspace $ ls -l
total 8
drwx-w---- 2 ubuntu ubuntu 4096 Oct 30 00:58 php/
drwx-w---- 3 ubuntu ubuntu 4096 Oct 30 00:55 php-webdev/
-rw------- 1 ubuntu ubuntu   28 Oct 30 01:01 test.php
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