

# CS50



```
from cs50 import eprint
```

# Log into Facebook

**Log In**

**Recover Your Account**

[Sign up for Facebook](#)

GET / HTTP/1.1

Host: www.facebook.com

...

HTTP/1.1 200 OK

Content-Type: text/html

...

```
HTTP/1.1 200 OK
Content-Type: text/html
Set-Cookie: session=value
```

```
...
```

```
HTTP/1.1 200 OK
Content-Type: text/html
Set-Cookie: session=value
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```
...
```

GET / HTTP/1.1

Host: www.facebook.com

...

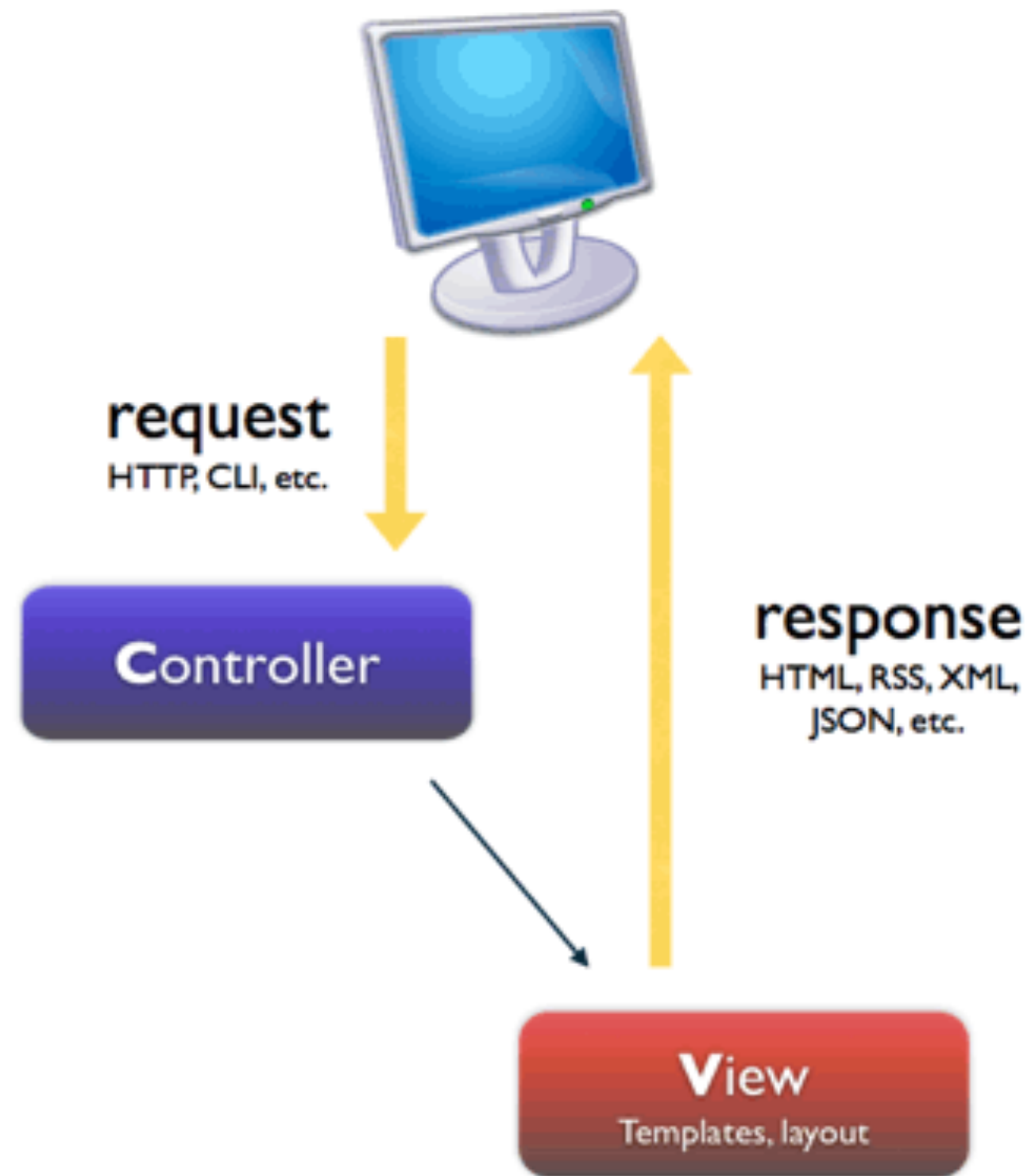


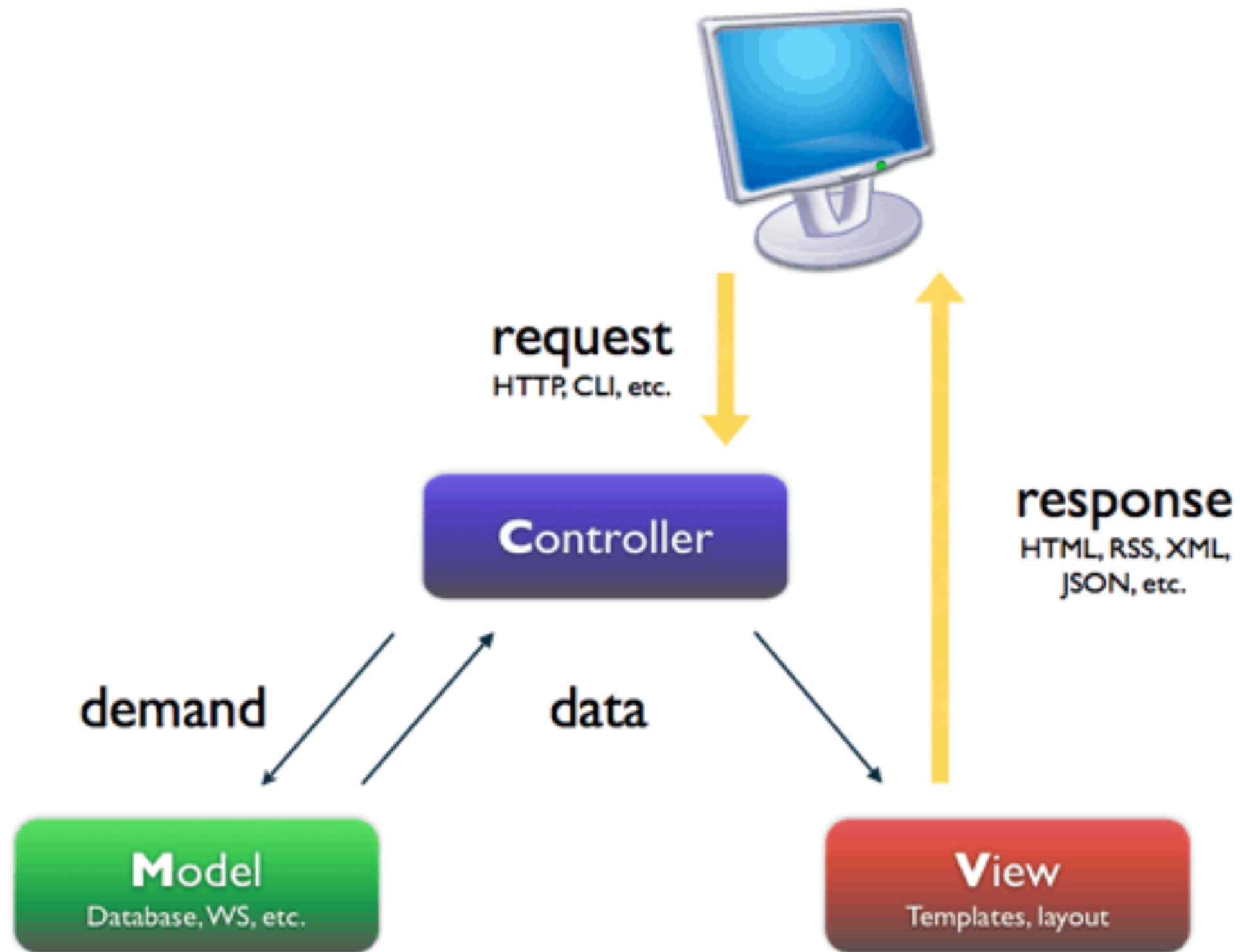
GET / HTTP/1.1

Host: www.facebook.com

Cookie: session=value

...









C



Python



SQL

Untitled spreadsheet - Google

← → ↻ <https://docs.google.com/spreadsheets> 🔍 ☆ ⋮

Untitled spreadsheet

File Edit View Insert Format Data Tools Add-ons Help

Comments [Share](#)

\$ % .0 .00 123 Arial 10 B I A More

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Sheet1







sqlite3

CREATE . . .

INSERT . . .

SELECT . . .

UPDATE . . .

DELETE . . .

. . .

```
CREATE TABLE 'registrants'  
  ('id' INTEGER PRIMARY KEY, 'name' TEXT, 'dorm' TEXT)
```

```
INSERT INTO "registrants" ("id", "name", "dorm")  
  VALUES(1, 'David', 'Matthews')
```

```
SELECT * FROM "registrants"
```

```
UPDATE "registrants" SET "name" = 'David Malan' where id = 1
```

```
DELETE FROM "registrants" WHERE id = 1
```

```
...
```

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```
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```

```
...
```

BLOB

INTEGER

NULL

REAL

TEXT

DATETIME

NUMERIC

• • •

Example Typenames From The CREATE TABLE Statement or CAST Expression	Resulting Affinity
INT INTEGER TINYINT SMALLINT MEDIUMINT BIGINT UNSIGNED BIG INT INT2 INT8	INTEGER
CHARACTER(20) VARCHAR(255) VARYING CHARACTER(255) NCHAR(55) NATIVE CHARACTER(70) NVARCHAR(100) TEXT CLOB	TEXT
BLOB <i>no datatype specified</i>	BLOB
REAL DOUBLE DOUBLE PRECISION FLOAT	REAL
NUMERIC DECIMAL(10,5) BOOLEAN DATE DATETIME	NUMERIC

date

time

datetime

...

PRIMARY KEY

UNIQUE

INDEX

NOT NULL

FOREIGN KEY

• • •

JOIN

• • •



```
db = cs50.SQL("sqlite:///lecture.db")
```

BEGIN TRANSACTION

COMMIT

ROLLBACK

SQL injection attack

# Login required

You may establish Yale authentication now in order to access protected services later.

NetID:

Password:

☐ Warn me before logging me in to other sites.

Login

## Please Log In

---

To log in, please select your login type from the tabs below and enter your credentials. If you're not sure what login type to use, [look here for how you login with HarvardKey.](#)

HarvardKey	HUID	eCommons	XID
------------	------	----------	-----

Login Name (in the form of an email address):

Password:

**Login**

## Please Log In

---

To log in, please select your login type from the tabs below and enter your credentials. If you're not sure what login type to use, [look here for how you login with HarvardKey](#).

HarvardKey	HUID	eCommons	XID
------------	------	----------	-----

Login Name (in the form of an email address):

me@examplemailprovider.com

Password:

' OR '1' = '1

**Login**

```
username = request.form.get("username")
password = request.form.get("password")

db.execute(f"SELECT * FROM users
WHERE username = '{username}' AND password = '{password}'")
```

```
username = request.form["username"]  
password = request.form["password"]
```

```
db.execute("SELECT * FROM users  
WHERE username = 'me@exampleemailprovider.com' AND password = '' OR '1' = '1''")
```



```
username = request.form["username"]  
password = request.form["password"]
```

```
db.execute("SELECT * FROM users  
WHERE username = :username AND password = :password", username=username, password=password)
```

```
username = request.form["username"]  
password = request.form["password"]
```

```
db.execute("SELECT * FROM users  
WHERE username = 'me@examplemailprovider.com' AND password = '\ OR \'1\ = \'1'")
```





ZU 0666', 0, 0); DROP DATABASE TABLE;

FL PASIKOWSKI D. 18.11.2018 18.11.2018 18.11.2018

HI, THIS IS  
YOUR SON'S SCHOOL.  
WE'RE HAVING SOME  
COMPUTER TROUBLE.



OH, DEAR - DID HE  
BREAK SOMETHING?

IN A WAY - )



DID YOU REALLY  
NAME YOUR SON  
Robert'); DROP  
TABLE Students;-- ?



OH, YES. LITTLE  
BOBBY TABLES,  
WE CALL HIM.

WELL, WE'VE LOST THIS  
YEAR'S STUDENT RECORDS.  
I HOPE YOU'RE HAPPY.



AND I HOPE  
YOU'VE LEARNED  
TO SANITIZE YOUR  
DATABASE INPUTS.



Symbol	Name	Shares	Price	TOTAL
NFLX	Netflix, Inc.	1	\$193.77	\$193.77
CASH				\$9,806.23
				<b>\$10,000.00</b>

# CS50

