“Jokes”

Invent Your Own Computer Games with Python

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Introduction

- **How Programs Run on Computers**
- **"Jokes"**
  - Sample Run
  - Source Code
- **Code Explanation**
- **Things Covered In This Chapter**

How Programs Run on Computers

How Programs Run on Computers

- **Operating System (OS)**
  - Ex) Windows, MacOS, Linux or another one.
  - Program that runs other programs called **applications.**

- **Hardware**
  - Parts of the computer that you **can touch**
  - Ex) the monitor, or the keyboard and mouse, or a printer

- **Software**
  - programs like the OS or applications or games that run on the computer.

How Programs Run on Computers

How Programs Run on Computers

- **Machine Code**
  - very basic instructions.
  - simple enough for computer's main microchip to understand.
    - » **CPU** or **Central Processing Unit**
  - written in ones and zeros.
    - » 10101101 00110000 11000000
  - These instructions aren't very easy for humans to work with.

How Programs Run on Computers

How Programs Run on Computers

- **Assembly language**
  - Ex) MOV, JMP, PUSH or XOR
  - makes reading and writing the instructions easier.
  - but still **long** and **complicated.**

- This is where **higher-level programming languages** come in.

How Programs Run on Computers

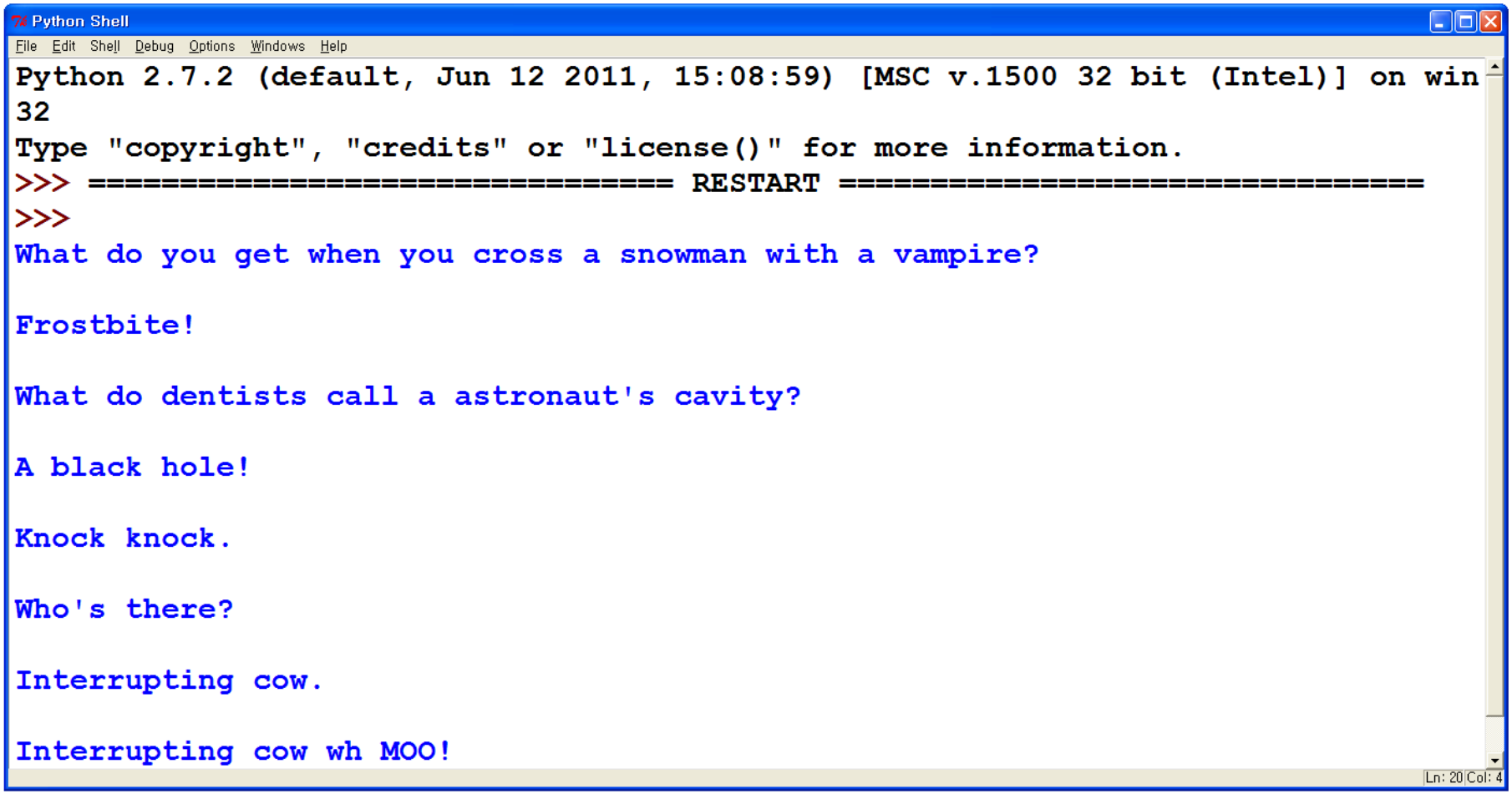
How Programs Run on Computers

- **High-level languages**
  - Ex) Python, Java, C++, Pascal, Perl, Basic, and many others.
  - take care of many of the details of machine code.

- **Interpreter**
  - translates high-level languages into machine code.

“Jokes”

Sample Run



“Jokes”

- Source Code

jokes.py - C:₩Python27₩jokes.py

File Edit Format Run Options Windows Help

```
print 'What do you get when you cross a snowman with a vampire?'
raw_input()
print 'Frostbite!'
print
print 'What do dentists call an astronaut\'s cavity?'
raw_input()
print 'A black hole!'
print
print 'Knock knock.'
raw_input()
print "Who's there?"
raw_input()
print 'Interrupting cow.'
raw_input()
print 'Interrupting cow wh',
print 'MOO!'
```

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Code Explanation

- Three `print` statements.

```
print 'What do you get when you cross a snowman with a vampire?'
raw_input()
print 'Frostbite!'
print
```

- Read the first line, press Enter, and then read the punch line.
- The user can still type in a string and hit Enter
  - because we aren't storing this string in any variable.
- The last `print` statement call has no string.

Code Explanation

Escape Characters

```
print 'What do dentists call an astronaut\'s cavity?'
raw_input()
print 'A black hole!'
print
```

- **a slash** right before the single quote (that is, the apostrophe).
  - \ is a backslash, / is a forward slash.
  - tells us that the letter right after it is an escape character.
  - escape character helps us print out letters.

Code Explanation

Some Other Escape Characters

- What if you really want to display a backslash?
- This line of code would not work.

```
>>> print 'He flew away in a green\teal helicopter.'
He flew away in a green eal helicopter.
```

Code Explanation

Quiz

- Instead, try this line

```
>>> print 'He flew away in a green\\teal helicopter.'
```

Code Explanation

Escape Characters

Escape Character	What Is Actually Printed
\\	Backslash (\)
\'	Single quote (')
\"	Double quote (")
\n	Newline
\t	Tab

Code Explanation

Quotes and Double Quotes

- Strings don't always have to be in between single quotes.
- You can also put them in between **double quotes.**

```
>>> print 'Hello world'
Hello world
>>> print "Hello world"
Hello world
```

Code Explanation

- Quiz

```
>>> print 'Hello world"
```

Code Explanation

Quotes and Double Quotes

- \' **to have a single quote** in a string surrounded by **single quotes.**
- \" **to have a double quote** in a string surrounded by **double quotes.**

```
>>> print 'I asked to borrow Abe\'s car for a week. He said, "Sure."'
I asked to borrow Abe's car for a week. He said, "Sure."
>>> print "He said, \"I can't believe you let him borrow your car.\""
He said, "I can't believe you let him borrow your car."
```

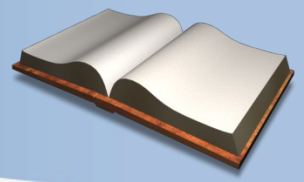
Code Explanation

Using Commas

```
print 'Interrupting cow wh',
print 'MOO!'
```

- **Comma** means we do not want to `print` a newline at the end.
- This is why `'MOO!'` appears next to the previous line.

Things Covered In This Chapter



- Using `print` with no parameters to display blank lines.
- Escape characters.
- Using single quotes and double quotes for strings.
- Using commas at the end of print statements.