Python Code Reading Recitation A

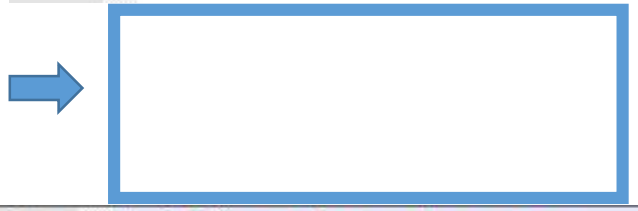
Using List [1/2]

```python
# 3-1 bicycles.py

bicycles = ['trek', 'cannondale', 'redline', 'specialized']
message = "My first bicycle was a " + bicycles[0].title() + "."

print(message)

```



```python
# 3-2 motorcyles.py

motorcycles = ['honda', 'yamaha', 'suzuki', 'ducati']
print(motorcycles)

too_expensive = 'ducati'
motorcycles.remove(too_expensive)
print(motorcycles)
print("\nA " + too_expensive.title() + " is too expensive for me.")

```

Using List [2/2]

```
1  # 3-3 cars.py
2
3  cars = ['bmw', 'audi', 'toyota', 'subaru']
4
5  print("Here is the original list:")
6  print(cars)
7
8  print("\nHere is the sorted list:")
9  print(sorted(cars))
10
11 print("\nHere is the reverse alphabetical list:")
12 print(sorted(cars, reverse=True))
13
14 print("\nHere is the original list again:")
15 print(cars)
16
```

More List Codes [1/3]

```python
# 4-1 magicians.py

magicians = ['alice', 'david', 'carolina']
for magician in magicians:
    print(magician.title() + ", that was a great trick!")
    print("I can't wait to see your next trick, " + magician.title() + ".\n")

print("Thank you everyone, that was a great magic show!")
```

```python
# 4-2 numbers.py

numbers = list(range(1,6))
print(numbers)
```

```python
# 4-3 even_numbers.py

even_numbers = list(range(2,11,2))
print(even_numbers)
```

More List Codes [2/3]

```python
# 4-4 squares.py

squares = []
for value in range(1,11):
    square = value**2
    squares.append(square)

print(squares)

```

```python
# 4-5 palyers.py

players = ['charles', 'martina', 'michael', 'florence', 'eli']

print("Here are the first three players on my team:")
for player in players[:3]:
    print(player.title())
```

More List Codes [3/3]

```python
# 4-6 foods.py

my_foods = ['pizza', 'falafel', 'carrot cake']
friend_foods = my_foods[:]

my_foods.append('cannoli')
friend_foods.append('ice cream')

print("My favorite foods are:")
print(my_foods)

print("\nMy friend's favorite foods are:")
print(friend_foods)
```

```python
# 4-7 dimensions.py

dimensions = (200, 50)
print("Original dimensions:")
for dimension in dimensions:
    print(dimension)

dimensions = (400, 100)
print("\nModified dimensions:")
for dimension in dimensions:
    print(dimension)
```

Code with IF [1/3]

```python
# 5-1 cars.py

cars = ['audi', 'bmw', 'subaru', 'toyota']

for car in cars:
    if car == 'bmw':
        print(car.upper())
    else:
        print(car.title())
```

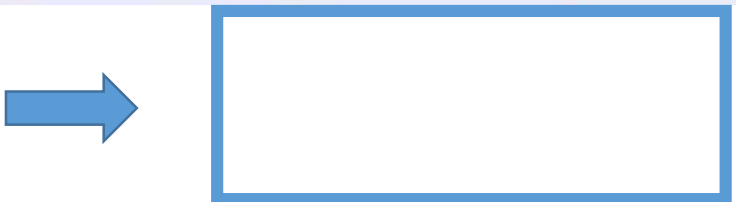
```python
# 5-2 toppings.py

available_toppings = ['mushrooms', 'olives', 'green peppers',
                      'pepperoni', 'pineapple', 'extra cheese']

requested_toppings = ['mushrooms', 'french fries', 'extra cheese']

for requested_topping in requested_toppings:
    if requested_topping in available_toppings:
        print("Adding " + requested_topping + ".")
    else:
        print("Sorry, we don't have " + requested_topping + ".")

print("\nFinished making your pizza!")
```



Code with IF [2/3]

```
1  # 5-3 magic_number.py
2
3  answer = 17
4
5  if answer != 42:
6      print("That is not the correct answer. Please try again!")
```

```
1  # 5-4 banned_users.py
2
3  banned_users = ['andrew', 'carolina', 'david']
4  user = 'marie'
5
6  if user not in banned_users:
7      print(user.title() + ", you can post a response if you wish.")
```

Code with IF [3/3]

```python
# 5-5 voting.py

age = 17
if age >= 18:
    print("You are old enough to vote!")
    print("Have you registered to vote yet?")
else:
    print("Sorry, you are too young to vote.")
    print("Please register to vote as soon as you turn 18!")
```

```python
# 5-6 amusement_park.py

age = 12

if age < 4:
    price = 0
elif age < 18:
    price = 5
elif age < 65:
    price = 10
elif age >= 65:
    price = 5

print("Your admission cost is $" + str(price) + ".")
```

VS

```python
age = 12

if age < 4:
    price = 0
elif age < 18:
    price = 5
elif age < 65:
    price = 10
else:
    price = 5

print("Your admission cost is $" + str(price) + ".")
```

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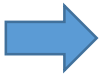
Code with Dictionary [1/4]

```
1  #  6-1 alien.py
2
3  alien_0 = {'x_position': 0, 'y_position': 25, 'speed': 'medium'}
4  print("Original position: " + str(alien_0['x_position']))
5
6  # Move the alien to the right.
7  # Figure out how far to move the alien based on its speed.
8  if alien_0['speed'] == 'slow':
9      x_increment = 1
10 elif alien_0['speed'] == 'medium':
11     x_increment = 2
12 else:
13     # This must be a fast alien.
14     x_increment = 3
15
16 # The new position is the old position plus the increment.
17 alien_0['x_position'] = alien_0['x_position'] + x_increment
18
19 print("New position: " + str(alien_0['x_position']))
20
```



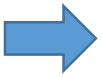
Code with Dictionary [2/4]

```
# 6-2 favorite_languages.py

favorite_languages = {
    'jen': 'python',
    'sarah': 'c',
    'edward': 'ruby',
    'phil': 'python',
    }

for name, language in favorite_languages.items():
    print(name.title() + "'s favorite language is " +
        language.title() + ".")
```

```
# 6-3 user.py

user_0 = {'username': 'efermi',
          'first': 'enrico',
          'last': 'fermi',
          }

for key, value in user_0.items():
    print("\nKey: " + key)
    print("Value: " + value)
```

Code with Dictionary [3/4]

```
# 6-4 aliens.py

# Make an empty list for storing aliens.
aliens = []

# Make 30 green aliens.
for alien_number in range (0,30):
    new_alien = {'color': 'green', 'points': 5, 'speed': 'slow'}
    aliens.append(new_alien)

for alien in aliens[0:3]:
    if alien['color'] == 'green':
        alien['color'] = 'yellow'
        alien['speed'] = 'medium'
        alien['points'] = 10
    elif alien['color'] == 'yellow':
        alien['color'] = 'red'
        alien['speed'] = 'fast'
        alien['points'] = 15

# Show the first 5 aliens:
for alien in aliens[0:5]:
    print(alien)
print("...")

```



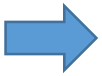
Code with Dictionary [4/4]

```python
# 6-5 pizza.py

# Store information about a pizza being ordered.
pizza = {
    'crust': 'thick',
    'toppings': ['mushrooms', 'extra cheese'],
    }

# Summarize the order.
print("You ordered a " + pizza['crust'] + "-crust pizza " +
      "with the following toppings:")

for topping in pizza['toppings']:
    print("\t" + topping)
```

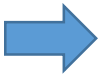
```python
# 6-6 many_users.py

users = {'aeinstein': {'first': 'albert',
                       'last': 'einstein',
                       'location': 'princeton'},
         'mcurie': {'first': 'marie',
                    'last': 'curie',
                    'location': 'paris'},
         }

for username, user_info in users.items():
    print("\nUsername: " + username)
    full_name = user_info['first'] + " " + user_info['last']
    location = user_info['location']

    print("\tFull name: " + full_name.title())
    print("\tLocation: " + location.title())
```

While Loop Code [1/5]

```
1  # 7-1 parrot.py
2
3  prompt = "\nTell me something, and I will repeat it back to you:"
4  prompt += "\nEnter 'quit' to end the program. "
5
6  active = True
7  while active:
8      message = input(prompt)
9
10     if message == 'quit':
11         active = False
12     else:
13         print(message)
```



```
1  # 7-2 greeter.py
2
3  prompt = "If you tell us who you are, we can personalize the messages you see."
4  prompt += "\nWhat is your first name? "
5
6  name = input(prompt)
7  print("\nHello, " + name + "!")
```



While Loop Code [2/5]

```python
#  7-3 rollercoaster.py

height = input("How tall are you, in inches? ")
height = int(height)

if height >= 36:
    print("\nYou're tall enough to ride!")
else:
    print("\nYou'll be able to ride when you're a little older.")
```

```python
# 7-4 even_or_odd.py

number = input("Enter a number, and I'll tell you if it's even or odd: ")
number = int(number)

if number % 2 == 0:
    print("\nThe number " + str(number) + " is even.")
else:
    print("\nThe number " + str(number) + " is odd.")
```

While Loop Code [3/5]

```
1  # 7-5 counting.py
2
3  current_number = 1
4  while current_number <= 5:
5      print(current_number)
6      current_number += 1
7
```

```
1  # 7-6 cities.py
2
3  prompt = "\nPlease tell me a city you have visited:"
4  prompt += "\n(Enter 'quit' when you are finished.) "
5
6  while True:
7      city = input(prompt)
8
9      if city == 'quit':
10         break
11     else:
12         print("I'd love to go to " + city.title() + "!")
13
```

While Loop Code [4/5]

```python
# 7-7 confirmed_users.py


# Start out with some users that need to be verified,
#  and an empty list to hold confirmed users.
unconfirmed_users = ['alice', 'brian', 'candace']
confirmed_users = []

# Verify each user, until there are no more unconfirmed users.
#  Move each verified user into the list of confirmed users.
while unconfirmed_users:
    current_user = unconfirmed_users.pop()

    print("Verifying user: " + current_user.title())
    confirmed_users.append(current_user)

# Display all confirmed users.
print("\nThe following users have been confirmed:")
for confirmed_user in confirmed_users:
    print(confirmed_user.title())
```

```python
# 7-8 pets.py

pets = ['dog', 'cat', 'dog', 'goldfish', 'cat', 'rabbit', 'cat']
print(pets)

while 'cat' in pets:
    pets.remove('cat')

print(pets)

```

While Loop Code [5/5]

```
# 7-9 mountain_poll.py

responses = {}

# Set a flag to indicate that polling is active.
polling_active = True

while polling_active:
    # Prompt for the person's name and response.
    name = input("\nWhat is your name? ")
    response = input("Which mountain would you like to climb someday? ")

    # Store the response in the dictionary:
    responses[name] = response

    # Find out if anyone else is going to take the poll.
    repeat = input("Would you like to let another person respond? (yes/ no) ")
    if repeat == 'no':
        polling_active = False

# Polling is complete. Show the results.
print("\n--- Poll Results ---")
for name, response in responses.items():
    print(name + " would like to climb " + response + ".")
```