Class Two Code Notes

1. Casting (Type Conversion)

- Converting between data types is known as **casting**.
- Common functions:
  - `int()` to convert to integer
  - `float()` to convert to float
  - `str()` to convert to string

Example:

```python
a = int("2")   # a becomes 2
b = float("3.2")   # b becomes 3.2
```

3. Using `input()`

- `input()` **always returns a string**.
- Convert the input to the desired type using casting.

Example:

```python
# d = input("Enter a value: ")  # Returns a string
# d_float = float(d)            # Convert to float if needed
# print(d_float)
```

4. Multiple Assignment

- Assign multiple variables in a single line:

```python
x, y = 2, 4
```

- `x` will be `2`, and `y` will be `4`.

5. Basic Data Types

1. **int** – e.g., `2` , `-5`
2. **float** – e.g., `3.14` , `2.0`
3. **str** – e.g., `"Hello"` , `"3.14"`
4. **bool** – `True` or `False`

6. Generating Random Numbers

- Use the `random` module to generate pseudo-random numbers.
- `random.randrange(start, end)` gives a random integer in `[start, end)` .

```python
import random
x = random.randrange(0, 10)   # Random integer between 0 and 9
print(x)
```

7. String Functions

7.1 Stripping Whitespace

- `string.strip()` removes whitespace at the beginning and end of a string.

Example:

```python
text = "   Hello World   "
print(text.strip())  # "Hello World"
```

7.2 Replace and Split

- `string.replace(old, new)` replaces all occurrences of `old` with `new` .
- `string.split(separator)` splits a string into a list using the specified `separator` .

Example:

```python
name = "Rehan"
print(name.replace("Re", "Ze"))   # "Zehan"

secondname = "Python"
print(secondname.split("t"))   # ["Py", "hon"]
```

7.3 Concatenation

- Join strings with the `+` operator.

```
full_string = name + " " + secondname
print(full_string)  # "Rehan Python"
```

8. Checking Object Size

- `sys.getsizeof(object)` returns the size of an object in bytes.

Example:

```
import sys
text = "Hello"
print(sys.getsizeof(text))
```

Complete Example

Below is a complete snippet demonstrating these concepts:

```
import random
import sys

# Casting examples
a = int(2)     # 2
b = 3.2        # float
c = "2.2"      # string

print(a + a)  # 4
print(b + b)  # 6.4

# Taking input (commented out to avoid interruption in code)
# d = input("Enter the value of d: ")
# print(float(d))

# Multiple assignment
x, y = 2, 4
print(x + y)     # 6
print("x+y")     # Literal string "x+y"

# Generate a random number from 0 to 9
random_value = random.randrange(0, 10)
print(random_value)

# String manipulation
string = "        WOW This is a sample string          "
print(string)
secondString = string.strip()
print(secondString)
```

```python
# Compare memory sizes
print(sys.getsizeof(secondString))
print(sys.getsizeof(string))

# Replace and split
name = "Rehan"
print(name.replace("", "Zehan"))

secondname = "Python"
print(secondname.split("e"))  # ["Pyth", "n"]

# Concatenation
thirdString = name + " " + secondname
print(thirdString)  # "Rehan Python"
```