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C203

Problem 1

Code:

```python
class money:

    def __init__(self, amount: int = 0, denomination: str =  "Unknown"):
        self.amount = amount
        self.denomination = denomination

    def __str__(self):
        return f"Amount is: {self.amount}\nDenomination: {self.denomination}"

    def __getitem__(self, key):
        if key == 0:
            return f"{self.amount}"
        elif key == "":
            return f"{self.denomination}"
        else:
            return ""
```

```python
from Money import money


def test(self):
    self.wallet = money()
    self.wallet2 = money(100)
    self.wallet3 = money(100, "USD")

    print("Action: Invoking the Money class constructor using Money()\nOutput")
    print(self.wallet)
    print("\nAction: Invoking the Money class constructor using Money(100)\nOutput:")
    print(self.wallet2)
    print("\nAction: Invoking the Money class constructor using Money(100, \"USD\")\nOutput:")
    print(self.wallet3)


if __name__ == '__main__':
    test(money)
```

Output:

```
Action: Invoking the Money class constructor using Money()
Output
Amount is: 0
Denomination: Unknown

Action: Invoking the Money class constructor using Money(100)
Output:
Amount is: 100
Denomination: Unknown

Action: Invoking the Money class constructor using Money(100, "USD")
Output:
Amount is: 100
Denomination: USD


** Process exited - Return Code: 0 **
```

Problem 2

Code

```python
class Student:  4 usages
    def __init__(self, id_number: int = 0, name: str = "Unknown", course: str = "Unknown"):
        self.id_number = id_number
        self.name = name
        self.course = course

    def __str__(self):
        return f"{self.id_number} - {self.name} - {self.course}"

    def validate_info(self):  1 usage

        if self.name.replace(__old: " ", __new: "").isalpha() and len(str(self.id_number)) == 9:
            print("Student information is valid.")
        else:
            print("Student information is not valid.")
```

```python
from student import Student


def main():  1 usage
    print("Action: Invoking __str__() method with the following Student information:")

    s1 = Student( id_number: 123456789,  name: "John Doe",  course: "Computer Science")

    print("ID:", s1.id_number)

    print("Name:", s1.name)

    print("Course:", s1.course)

    print("\nOutput:")

    print(s1)

    print()

    print("Action: Invoking __str__() method with the following Student information:")

    s2 = Student( id_number: 12345,  name: "Jane Doe",  course: "Mathematics")

    print("ID:", s2.id_number)

    print("Name:", s2.name)

    print("Course:", s2.course)

    print("\nOutput:")

    print(s2)

    print()
```

```
36
37          print("Action: Invoking validate_info() method with the following Student information:")
38
39          s3 = Student( id_number: 987654321,  name: "Alice123",  course: "Physics")
40
41          print("ID:", s3.id_number)
42
43          print("Name:", s3.name)
44
45          print("Course:", s3.course)
46
47          print("\nOutput:")
48
49          s3.validate_info()
50
51          print()
52
53
54    ▷    if __name__ == '__main__':
55          main()
56
```

Output:

```
Action: Invoking __str__() method with the following Student information:
ID: 123456789
Name: John Doe
Course: Computer Science

Output:
123456789 - John Doe - Computer Science

Action: Invoking __str__() method with the following Student information:
ID: 12345
Name: Jane Doe
Course: Mathematics

Output:
12345 - Jane Doe - Mathematics

Action: Invoking validate_info() method with the following Student information:
ID: 987654321
Name: Alice123
Course: Physics

Output:
Student information is not valid.


Process finished with exit code 0
```