



48024 Applications Programming

Dr Angela Huo



Contents

Pre: Open Question Board(<https://padlet.com/angelahuo/appsprog>)

- Announcement
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- Lab6 Preview

[Post your question to https://padlet.com/angelahuo/appsprog](https://padlet.com/angelahuo/appsprog)

Announcement

- Assignment 1 was released at the end of last week
 - You need to complete "Plagiarism" and "Week 6" module and to unlock assignment 1

The screenshot displays a course management system interface. At the top, there are three items: 'Academic integrity', 'Academic-Integrity-online-assessment.pdf', and 'Avoiding Plagiarism Quiz [Engineering & IT]'. The 'Avoiding Plagiarism Quiz' is circled in red. Below this is a section for 'Week 6', which includes a 'Complete All Items' button. Under 'Week 6', there is a 'Module 6: Lists' section, followed by 'Pre-class', 'Study 6', 'Patterns Book 6', 'Demo 6', 'Lecture', and 'Lecture 6'. Red checkmarks are placed next to 'Study 6', 'Patterns Book 6', 'Demo 6', and 'Lecture 6'.

Item	Status
Academic integrity	Completed
Academic-Integrity-online-assessment.pdf	Completed
Avoiding Plagiarism Quiz [Engineering & IT]	Completed
Week 6	
Module 6: Lists	Completed
Pre-class	Completed
Study 6	Completed
Patterns Book 6	Completed
Demo 6	Completed
Lecture	Completed
Lecture 6	Completed

Post your question to <https://padlet.com/angelahuo/appsprog>

Announcement

- Assignment 1 was released at the end of last week
 - You need to complete Lab 6 on ED to be able to submit assignment 1 on ED.

✓ Slides *Java*

☰ Lab 6 - Lists	<div><div></div></div>	✓
<> Tutor demo - Customer	<div><div></div></div>	✓
<> <u>Store</u>	<div><div></div></div>	✓

- Either Java or Python will be counted into final grades, but not both or mixture.

Slides

✓ <> TMS	<div><div></div></div>
✓ <> <u>TMS-Python</u>	<div><div></div></div>

Assignment 1

The progress:

1. Check Study 7 for similar example explanation.
2. Check the Specification, and Spoofy Check on Canvas.
3. Check the FAQ on ED.

Note:

- Everything you need to know is already covered in the study videos.
- Your code is marked by ED, and you will get the potential mark immediately after you submit the code.
- The analysis of spoofing, plagiarism, collusion and general cheating will start two weeks following the due date. If you receive no manual feedback on ED the potential mark is your final mark for assignment 1.

[Post your question to https://padlet.com/angelahuo/appsprog](https://padlet.com/angelahuo/appsprog)

EFS Response

- Thank you all for the amazing feedback! I appreciate it very much!
- Clarification:
 - Flipped Learning: Lecture role is to close the gap between study videos and labs, prepare for the final LMS exam, answering both academic and administrative questions.
 - Python: During the transition from AppsProg to Prog2, current setting satisfy the majority students with various backgrounds and requirements. *↑ Autumn 2023*
- Improvements:
 - Lab specification will be released early by moving to Demo page after week 7. Lab page is only for submission link releasement.
 - Tutor demo solution and Lab Guide is available on Canvas. *2%* *zip* *(Java - Python)*
 - Python specific slides will be added in the lecture.

Teaching Strategy

W1

Previous Mon

---9~10 days---

W2

Tuesday Lecture

---2~3 days---

W2

Thu(Fri)

Materials

Pre-class(Canvas)

- Study Module
- Tutor demo Preview
- Patterns book

Lab materials will be locked until the study module has been completed.

Lab(Canvas+ED)

- Tutor Demo
- Lab exercises

Activities

Lecture: Canvas-->Zoom

Routine

- Announcement
- Study Module: Poll
- Labs:
 - Review current
 - Preview next

30 min break

- Consultation@FLP

W3

Friday

Lab: Canvas-->Group

On-campus Labs:

- See "Tutor list"

Online Labs(Group page):

- BigBlueButton
- Discussion Board

Lab 5 Review

Java

Slides

☰ Lab 5 - Classes	<div><div></div></div>
<> Tutor demo - Customer	<div><div></div></div>
<> <u>Store</u>	<div><div></div></div>

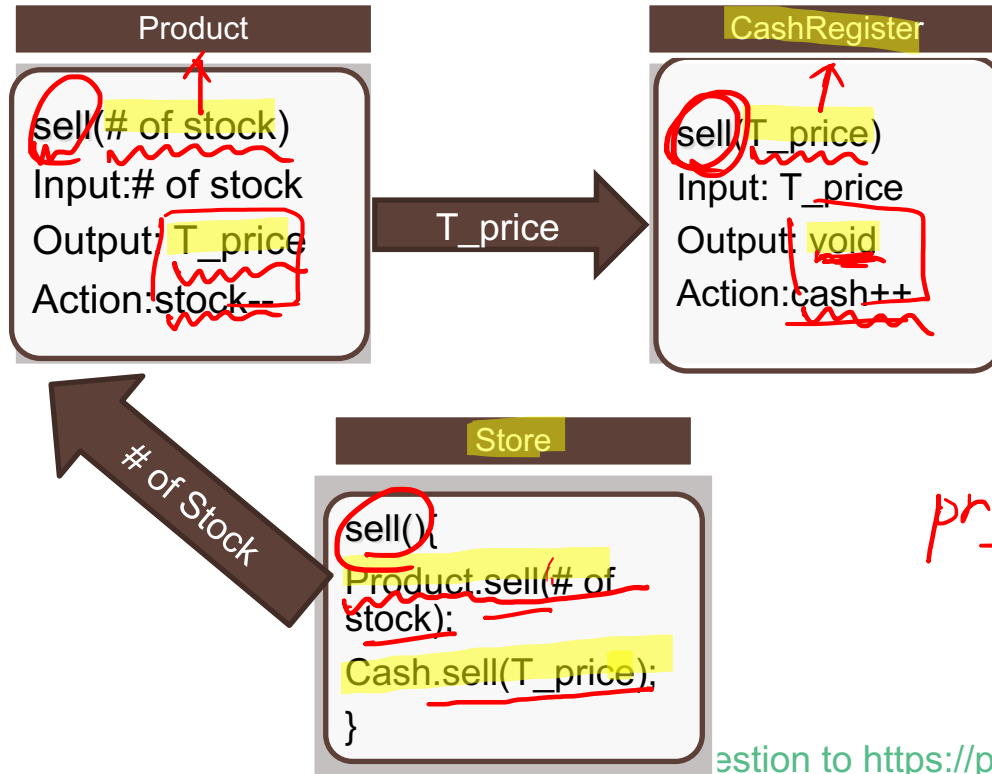
Python

Slides

☰ Lab 5 - Classes	<div><div></div></div>
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<> <u>Store</u>	<div><div></div></div>

Adding cash to the cash register

OO
Spread method.



1. Locate the class with corresponding private field
2. Determine the input and output
3. Implement the method with clear goals
4. Call this method in other classes.

private
transfer data
pass on results.

1.Product's sell method returns the money earned

```
public class Product {  
    ...  
    public double sell(int n) {  
        stock -= n;  
        return n * price;  
    }  
}
```

2. Calling this method.

- This method returns something, so store it

```
public class Store {  
    private void sell() {  
        double money = product.sell(readNumber());  
    }  
}
```

3. CashRegister's sell method adds the money earned

```
public class CashRegister {  
    private double cash;  
    public void add(double amount) {  
        cash += amount;  
    }  
}
```

4. Adding the money to the cash register

- Now add this money to the cash register

```
public class Store {  
    private void sell() {  
        Product: double money = product.sell(readNumber());  
        CashRegister: cashRegister.add(money);  
    }  
    //cashRegister.add(product.sell(readNumber()))  
}
```

sell Product.

Python

- Decimal format:

1,500
↑
1500

```
amount='{:,.2f}'.format(amount)
```

```
print('%s account has $%s' %(accountType, amount))
```

- Field and Constructor

```
def __init__(self, accountType):
```

def __init__(self):

field. self.accountType = accountType

field. self.balance = self.readBalance()

Key points of Week 6

- Type parameter(Generics) vs. Method parameter

<Account>

(Account)

account ()

Account.has(name)

- ArrayList and LinkedList(import)

- Loop
- add()/remove()/set()/get()/size()/clear()
- copy(addall, two solutions)

○ → **Lookup pattern**

○ → **Match function/Find all matches**

○ → **Remove all matches function(two solutions)**

○ Java's ConcurrentModificationException

○ **Remove one match function(two solutions)**

Ass1

}

list application different class.

list object.

Subject

Python deep copy

shallow copy

Which list pattern would you use?

Enter student ID: **12345432**

John Smith (12345432) has mark 78/100

Lookup pattern

Which list pattern would you use?

Enter student ID: **12345432**

Student deleted

Remove one match pattern

Which list pattern would you use?

Enter student ID: 12345432

Enter mark: 84

John Smith's mark updated

Lookup pattern

Which list pattern would you use?

Enter student's name: **John**

Found:

3 { John Smith
John Lee
John Small

result

sublist.add(match.item);

Find all matches pattern

Which list pattern would you use?

Delete students with zero marks? (y/n) **y**

3 students deleted

subject = 3 students

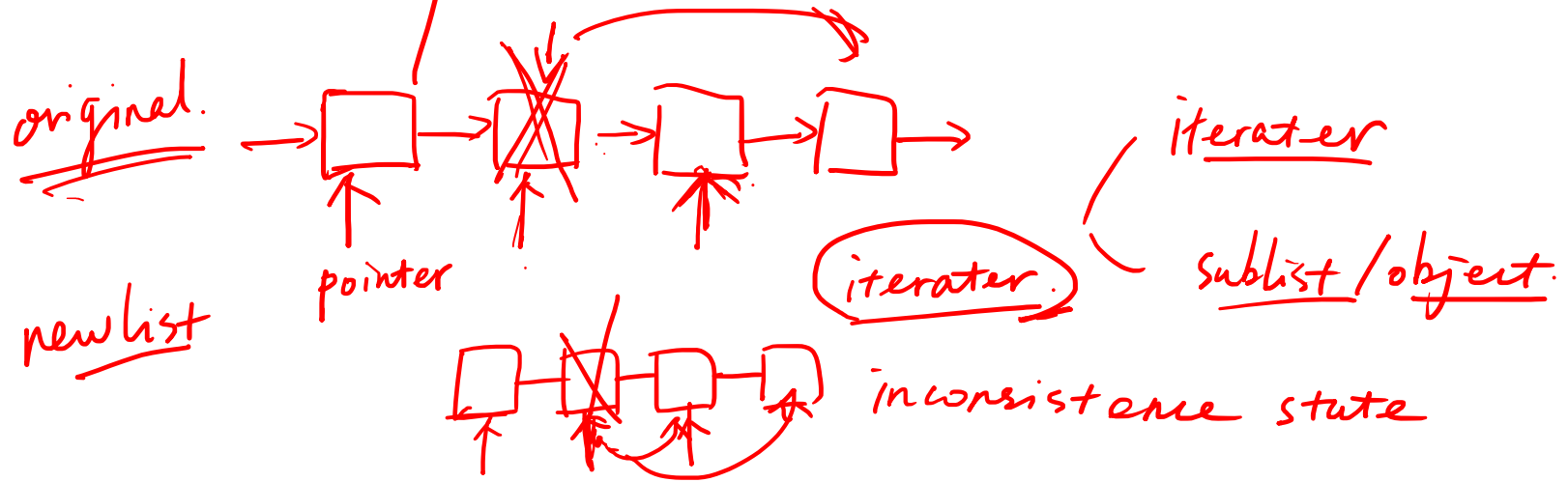
Remove all matches pattern

When do not use the pattern

Which of the following could NOT copy the list?

- `LinkedList original = new LinkedList("three", "blind", "mice");`

What causes a ConcurrentModificationException when you are iterating through a list?



How many errors in the following program?

```
public class Customer {  
    private static String bankName;  
    private Account account;  
  
    public static void main(String[] args) {  
        Customer customer1 = new Customer();  
        Customer customer2 = new Customer();  
        X customer1.balance=100; new Account()  
        X customer2.balance=200;  
        X System.out.print(customer1.balance);  
        X System.out.print(customer2.balance);  
    }  
}  
  
public class Account {  
    public double balance;  
    private Account()  
    public Account() {  
        System.out.print("Balance: $");  
        6 X return In.nextDouble();  
    }  
}
```

4

5

6

Remove all

- **Solution #1:** Make a list of z words, then remove them all at once:

```
LinkedList<String> zWords = zWords(list);  
list.removeAll(zWords);
```

- **Solution #2:** Use an iterator:

```
for (Iterator<String> it = list.iterator(); it.hasNext();)
    if (it.next().contains("z"))
        it.remove();
```

The first solution is simpler but slower (loops over the list twice).

The second solution is more complex but more efficient (loops once).

Lab 6

- 30 min Intro + Demo
- 10 min analysis
- Remaining time -- Coding(Submit to ED every single step)
- NOTE:
 - Lab 6 and Study 7 are critical preparation for the assignment1.
 - Next lab 7 will offer assignment support. Bring along your code!!!

Contact

- Subject Coordinator and Lecturer: Angela Huo
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- Contact information on Canvas

See you next week!