



COMP 1023 Introduction to Python Programming

Course Logistics

Dr. James Cheung, Dr. Wilfred Ng, Dr. Desmond Tsoi

Department of Computer Science & Engineering
The Hong Kong University of Science and Technology, Hong Kong SAR, China



Instructor

Dr. Desmond Yau-chat TSOI (Simply call me “**Desmond**” ;))



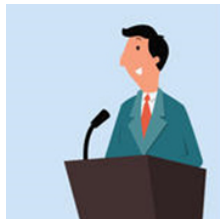
- Personal website:
<http://www.cse.ust.hk/~desmond>
- E-mail: desmond@ust.hk
- Office: Rm 3553 (Lift 27-28)
- Work phone: 2358-6984
- Office hours: To be confirmed



More about Me

List of institutes where I have taught (in chronological order):

- Hong Kong University of Science and Technology (HKUST)
 - Department of Computer Science and Engineering
 - Department of Accounting
- Nanyang Technological University, Singapore (NTU)
 - Department of Computer Science, School of Computer Engineering
- Hong Kong College of Technology
 - Department of Computer and Information Technology (HKCT)
- Community College of City University (CCCU)
Now renamed to UOW College Hong Kong
 - Division of Applied Science and Technology
- Hong Kong Polytechnic University
 - School of Professional Education and Executive Development (SPEED)



Now, I am once again serving CSE, HKUST.

You are welcome to talk to me if you have any questions about further study and/or career development!

Teaching Assistants

Full-time Instructional Assistants (IAs) [2]

- CHUI, Tsz Tou
 - Office: Rm 3543 (Lift 25-26)
 - E-mail: cttts@ust.hk
- USMAN, Muhammad
 - Office: Rm 2532 (Lift 25-26)
 - E-mail: usman@ust.hk

Postgraduate Teaching Assistants (PGTAs) [31]

- CAO, Xilin
 - E-mail: xcaoar@connect.ust.hk
- CHAN, Chun Kit
 - E-mail: ckchancc@connect.ust.hk
- CHEN, Hongxu
 - E-mail: hchenej@connect.ust.hk

- GAO, Yudong
 - E-mail: ygaodj@connect.ust.hk
- GENG, Xinyu
 - E-mail: xgengad@connect.ust.hk
- HE, Zhenqi
 - E-mail: zheci@connect.ust.hk
- HUANG, Yanwei
 - E-mail: yhuangix@connect.ust.hk
- JIAN, Yu Kei
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- KWOK, Tsun On
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- LIU, Bowen
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 - E-mail: jliugj@connect.ust.hk
- LUO, Yan
 - E-mail: yluodj@connect.ust.hk

Teaching Assistants

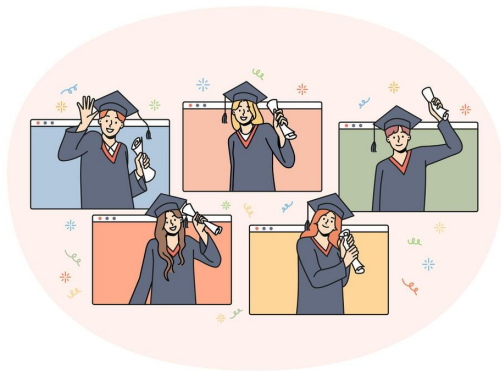
Postgraduate Teaching Assistants (PGTAs)

- MA, Sum Yi
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- SHUM, Ka Chun
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- TAN, Chaolei
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- TO, Tuan An
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- WANG, Zile
 - E-mail: zwangox@connect.ust.hk
- WANG, Ziting
 - E-mail: zwangmu@connect.ust.hk
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 - E-mail: pwuaq@connect.ust.hk
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- YU, Jieming
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Teaching Assistants

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- ZHANG, Zheng
 - E-mail: zzhangla@connect.ust.hk
- ZHOU, Yuguang
 - E-mail: yzhougv@connect.ust.hk



Teaching Assistants

Undergraduate Teaching Assistants (UGTAs) [10]

- CHEN, Yifu
- HE, Yulong
- JIA, Ziqi
- LI, Baichuan
- LI, Wenying
- LIU, Haoyun
- MU, Chenen
- SO, Chun Hin
- WONG, Lap Ming
- XIE, Zequan



Course Websites

- Official Course Website (For Lecture Notes, Lab Materials, ...):

<https://course.cse.ust.hk/comp1023>



- Canvas site (For Grades and Discussion via Piazza)

<https://canvas.ust.hk/courses/67970>

Supplementary Website

- For Lecture Videos, Progress, ...:

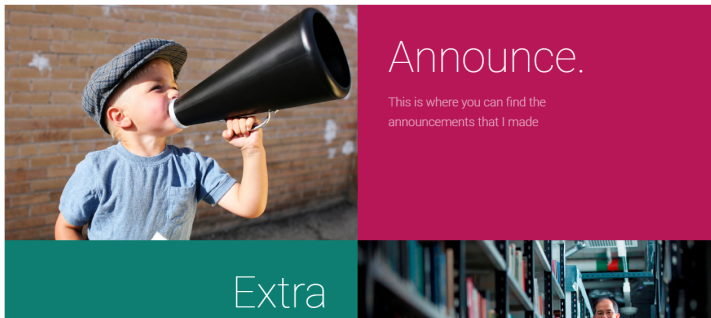
https://www.cse.ust.hk/~desmond/comp1023/Password_Only/

- Login: comp1023
- Password: < please mark it down :) >

COMP 1023 Introduction to Python Programming (Spring 2026)

Supplementary Site

Official Site: <https://course.cse.ust.hk/comp1023/>



Announce.

This is where you can find the announcements that I made

Extra

Instructor

- Dr. Desmond TSOI
- E-mail: desmond@ust.hk (followed by ust.hk)
- Office: Rm 3553
Path Advisor

Course Desc.

This introductory course is designed to provide a comprehensive overview of the

Lectures

- **Section L1 (Dr. Desmond Yau Chat TSOI)**
Tuesday/Thursday, 04:30pm - 05:50pm,
LTC (Lift 25-26)
- **Section L2 (Dr. Desmond Yau Chat TSOI)**
Wednesday/Friday, 01:30pm - 02:50pm,
LTB (Lift 25-26)
- **Section L3 (Dr. Desmond Yau Chat TSOI)**
Wednesday/Friday, 04:30pm - 05:50pm,
LTD (Lift 22)
- **Section L4 (Dr. Tsz Him CHEUNG)**
Tuesday/Thursday, 10:30am - 11:50am,
LTL, CYT (Lift 35-36)
- **Section L5 (Dr. Tsz Him CHEUNG)**
Monday/Wednesday, 12:00nn - 01:20pm,
LTL, CYT (Lift 35-36)
- **Section L6 (Dr. Wilfred Siu Hung NG)**
Tuesday/Thursday, 01:30pm - 02:50pm,
LTL, CYT (Lift 35-36)

Labs

- **Section LA1**
Friday, 03:30pm - 05:20pm,
LTA (Lift 19)
- **Section LA2**
Friday, 09:00am - 10:50am,
LTL, CYT (Lift 35-36)
- **Section LA3**
Wednesday, 01:30pm - 03:20pm,
LTA (Lift 19)
- **Section LA4**
Wednesday, 03:30pm - 05:20pm,
LTA (Lift 19)
- **Section LA5**
Monday, 03:00pm - 04:50pm,
LTB (Lift 25-26)
- **Section LA6**
Friday, 01:30pm - 03:20pm,
LTA (Lift 19)
- **Section LA7**
Wednesday, 3:30pm - 5:20pm,
LTC (Lift 25-26)

Check the lab page on the course website: <https://course.cse.ust.hk/comp1023/index.html#labs>
Check the list of instructional assistants/postgraduate teaching assistants/undergraduate teaching assistants assigned to each lab: <https://course.cse.ust.hk/comp1023/lab-tas.html>

Lecture and Lab Locations

- LTA: https://navigate.ust.hk/path/app/location/id?remote_id=UST1106
- LTB: https://navigate.ust.hk/path/app/location/id?remote_id=UST1108
- LTC: https://navigate.ust.hk/path/app/location/id?remote_id=UST1110
- LTD: https://navigate.ust.hk/path/app/location/id?remote_id=UST1112
- LTL, CYT: https://navigate.ust.hk/path/app/location/id?remote_id=CYTLTL

Lecture Class Arrangements During Weather Warning Signals

- In the event of a **black rainstorm warning**, **typhoon signal no. 8 or above**, or **extreme conditions**, all **scheduled lecture classes will be conducted online via Zoom**. Please use the Zoom links provided on the next page to join the online classes.
- Additionally, the **Zoom lecture videos will be provided** for your review in case you experience an unstable network connection due to adverse weather conditions.



Zoom Meeting Links

(For Online Classes During Adverse Weather Conditions)

- L1: <https://hkust.zoom.us/j/96189008508?pwd=Aq2epZ2sNFE00qHYENNuItPGIvTM01.1>
- L2: <https://hkust.zoom.us/j/94314399256?pwd=cpfHY4vgTCaW9CYsCbV50U9F9r9fYn.1>
- L3: <https://hkust.zoom.us/j/91922523585?pwd=glDBbbwNknvltAGSg5ZEbANjsmPH7V.1>
- L4: <https://hkust.zoom.us/j/95617870380?pwd=n1o0Xqn9c6b3U07wewR7RDEadnX3hb.1>
- L5: <https://hkust.zoom.us/j/99778426955?pwd=CMefpCRgzzvFcIXTxg0S2eiT9wCxjJ.1>
- L6: <https://hkust.zoom.us/j/95373575845?pwd=QzE7iNdCczsLph3VjxBdXZChXscEae.1>

Lecture Videos Release Policy

- The RVC lecture videos for all sections will be posted on Canvas every Friday.
- In addition, my lecture videos (RVC and Zoom) for L1, L2, and L3, will also be posted on my supplementary website.



Labs

Note

- There will be no labs in Week 1 (February 2 - 6).
- The first lab starts in Week 2 (February 9 - 13).



Labs

- The first **60 minutes** will be dedicated to a **tutorial**. Your TAs will briefly go through the details of the lab exercise (including the requirements) and let you try answering some Python questions about what you have learned in class via iPRS, as well as explain the answers. These techniques will be helpful for your lab work and exams.
- The next **50 minutes** will be for a **Q&A session**. You are welcome to ask questions about the lab exercises and programming assignments during this time.



Attendance will be taken using iPRS during the **first 60 minutes** of the lab.
<https://course.cse.ust.hk/comp1023/iprs-guide/>

Important Notes about the Labs

- You **must attend the registered lab session**. If you need to go to a different lab session, seek prior approval from your course instructor.
 - **Each lab attendance will be awarded 1 point.**
 - Since there are a total of **10 lab meetings**, the **maximum attendance point you can earn is 10.**

Attendance points for Lab 1 will be awarded based on completing the “Did you know?” Canvas Quiz.

- To **earn attendance points for each lab**, you need to **answer questions from the teaching assistants** during your lab time.
 - To make sure you stay for the first 60 minutes, please **use the iPRS to answer all the questions**. You won't be penalized for wrong answers, so we encourage you to try answering everything.
 - At the end of the lab, your teaching assistant will **randomly select half of the questions to check, and you'll earn 1 attendance point if you answered all of those.**
 - If you run into any technical issues that prevent you from submitting your answers using iPRS, please inform the teaching assistants before the lab ends. They won't be able to assist you if you wait until after the lab.

Important Notes about the Labs

- 10 lab exercises will be given to consolidate your understanding of course materials.
 - Only 5 lab exercises will be graded. Tentatively, they are Labs 2, 4, 6, 7, & 9.
 - 10 points for each graded lab and only the best 4 will count towards the final grade. So, the maximum is 40 points.
 - To get points/partial points for the lab, you are required to finish the requirement/program and submit it to ZINC (automatic grading system) on or before the due date. No late lab assignments will be accepted.

Your final total lab points = $\frac{(\text{attendance points} + \text{best 4 lab scores from ZINC})}{50} \times 10$

ZINC: <https://zinc.cse.ust.hk/>

Important Notes about the Labs

- Although we do not expect you to finish the lab exercises before you attend the lab, we expect you to **have read the lab materials and understand what you are required to do.**
- The lab materials will be made available approximately three days prior to the first lab session in a week.
- **Public holiday policy:**
 - If a day is a **public holiday**, students are **not require to attend the labs** held on that day.
 - There will be **no attendance points for these labs** for only those students who originally supposed to attend these labs; other students are not affected.
 - As different students may be affected by different public holidays, the final total lab attendance points will be **normalized according to the number of labs a student has to take.**
 - For labs that require submission, students **must still submit them to ZINC for grading in order to receive the lab assessment points.**

Course Description

- The course consists of, per week:

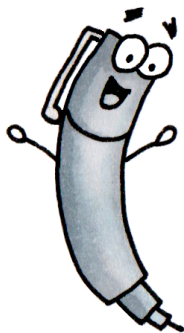
- 3 hours of lectures
- 2 hours of lab

and it gives 3 credits for successful completion of the course.

- Prerequisites: Nil

- Exclusions (9 Courses):

- COMP 1021 Introduction to Computer Science
- COMP 1022P Introduction to Computing with Java
- COMP 1029P Python Programming Bridging Course
- COMP 2011 Programming with C++
- COMP 2012H Honors Object-Oriented Programming and Data Structures
- COMP 2211 Introduction to Artificial Intelligence
- CIVL 1121 Introduction to Computation for Civil Engineers
- IEDA 4000G Python for Analytics
- ISOM 3400 Business Applications Development in Python



Course Objectives/Aims

- This introductory course is designed to provide a **comprehensive overview of the Python programming language and its core concepts**, such as **data types, variables, operators, and control structures**, as well as the **collection data types, including lists, tuples, sets, and dictionaries**.
- Additionally, it covers the **language's functions** and the **fundamentals of object-oriented programming**.
- The course also **explores a range of useful Python modules and packages**, such as **NumPy, Pandas, and Matplotlib**, through meaningful examples and applications, as well as hands-on experimentation using a well-known integrated development environment and AI tools.
- Furthermore, this course will **discuss good programming practices and debugging skills**.



Note

COMP 1023 is a course that teaches you the basics of programming. This course is important because it prepares you for other courses, like COMP 2011, where you'll learn C++, and COMP 2211, which is about Artificial Intelligence.

Topics

- Introduction to Computers and Programming
- Python Programming Fundamentals
- Branching Statements
- Looping Statements
- Collections – container data types
- Modularization – Functions and Recursions
- Modularization - Modules, Packages, and Libraries
- Object-Oriented Programming
- NumPy
- Pandas
- Matplotlib



Intended Learning Outcomes

On successful completion of this course, you are expected to be able to:

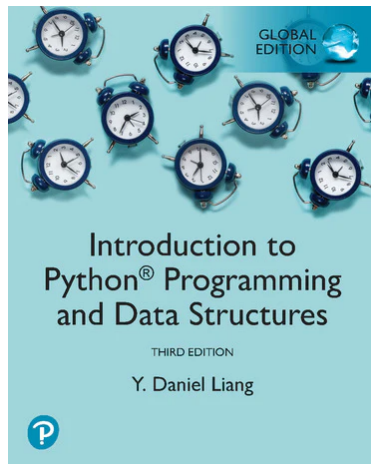
1. Implement solutions to simple problems by writing well-structured Python programs leveraging fundamental programming constructs.
2. Develop modular, reusable Python programs through the effective use of functions and modules.
3. Understand the core principles of object-oriented programming to create robust, maintainable Python applications.
4. Analyze and visualize data using appropriate libraries and tools.
5. Write Python code that adheres to industry-standard best practices for coding style and documentation.



Recommended Textbook

- [Introduction to Python Programming and Data Structures](#), Y. Liang, Pearson, c2022, Third Edition.
- ISBN: 9780137915972 (797 pages)

There are only few printed copies available in the campus textbook service point. On the other hand, you may purchase an e-version of book from the service point.



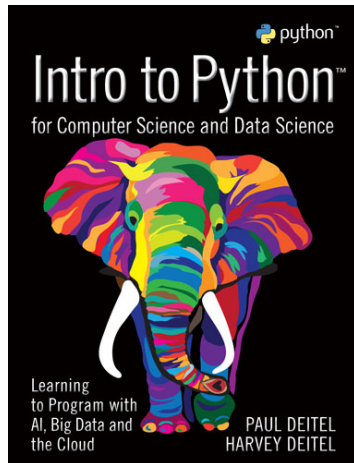
The textbook provides a clear and structured approach to understanding Python programming, making complex concepts accessible through practical examples.

Reference Textbooks

- **Intro to Python for Computer Science and Data Science**: Learning to Program with AI, Big Data and The Cloud, Paul Deitel, Harvey Deitel, Pearson, c2019, First Edition.
- ISBN: 978-0135404676 (880 pages)
- HKUST library provides online access to this textbook

URL

<https://lbdiscover.hkust.edu.hk/bib/991012881949403412>



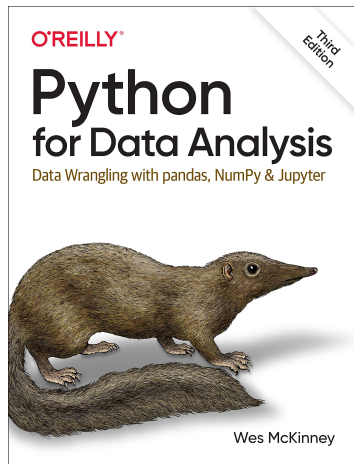
It is a well-rounded textbook that bridges the gap between programming fundamentals and applications in data science and AI.

Reference Textbooks

- **Python for Data Analysis**: Data Wrangling with Pandas, NumPy, and Jupyter, Wes McKinney, O'Reilly Media, c2022, Third Edition.
- ISBN: 9781098104030 (561 pages)
- HKUST library provides online access to this textbook

URL

https://lbdiscover.hkust.edu.hk/bib/cdi_nii_cinii_1130293468146710818



It offers a practical approach to data manipulation and analysis, with in-depth coverage of key libraries like Pandas and NumPy.

Other Materials

- 12 self-tests will be made available (One for each topic).
- Two past exam papers for Fall 2025: one for the midterm and one for the final will also be made available (To show you the types of questions and the format of the exams).
 - The past exam papers do not indicate the difficulty level of the actual exams.



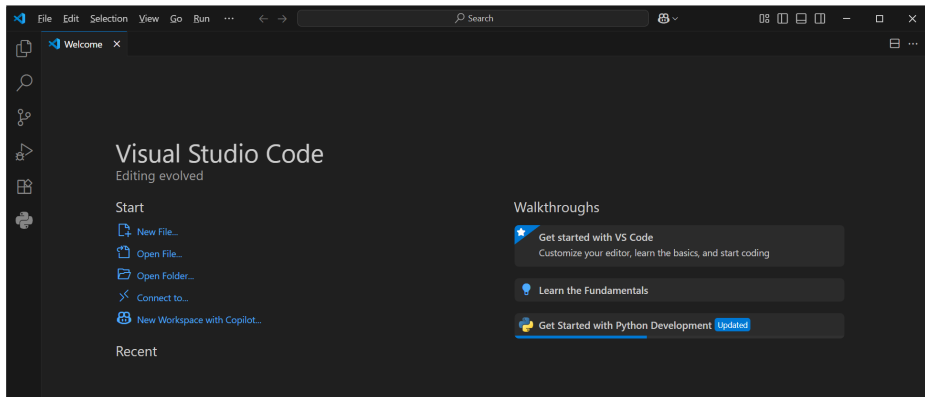
Tentative Teaching Schedule

Topic	# Lectures	Cumulative Lectures
Logistics & Introduction	1.5	1.5
Basic Programming Language Elements	3	4.5
Python Basic Operations	2	6.5
Branching (aka Checking & Selection)	1.5	8
Looping	2	10
Collections - Container Data Types Part I	3	13
Functions Part I	1.5	14.5
Functions Part II	1.5	16
Collections - Container Data Types Part II	2	18
Recursion	1.5	19.5
NumPy	3	22.5
Introduction to Object-Oriented Programming	1	23.5
Pandas	1.5	25

- The schedule is subject to change according to the teaching and learning progress!
- Makeup classes may be offered
 - L1, L4, L6: February 17 (Tuesday): Lunar New Year's Day
 - L2, L3, L5: February 18 (Wednesday): The Second Day of Lunar New Year
 - L1, L4, L6: February 19 (Thursday): The Third Day of Lunar New Year
 - L2, L3: May 1 (Friday): Labor Day
 - L5: May 25 (Monday): The Day Following the Birthday of the Buddha

Python Version and Software

- We use [Python 3.14.x](#), [NumPy 2.4.0](#), [Pandas 2.3.3](#), and [Matplotlib 3.10.8](#) as the programming standard for this course
- Integrated Development Environment (IDE)
 - [Visual Studio Code \(VS Code\)](#)



Grading Scheme

- Coursework (35%)
 - 10 Lab Exercises (10%),
5 of them will be graded and only the **best 4 will count towards the final grade**
 - 2 Individual Programming Assignments (25%)
- Examination (65%)
 - Mid-term Exam (25%)
 - Final Exam (40%)

Coursework (35%) + Examination (65%) = Total (100%)



Note

No make-up exams will be given unless under very unusual circumstances, e.g., sickness, with letters of proof

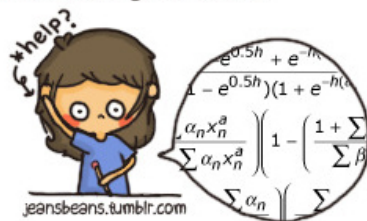
Midterm Exam

- The midterm examination is scheduled on
April 11, 2026 (Saturday),
2pm - 4pm
- Venue: To be confirmed
- Coverage: To be confirmed

What we learn in class
and what i study



What's actually on the test



Academic Dishonesty

- Honesty and integrity are central to academic work. You must observe and uphold the highest standards of academic integrity and honesty in all the work (lab exercises, programming assignments, exams, etc.) you do in this course.
- We deal with cheating cases seriously and the maximum penalty is a FAIL in the course plus additional disciplinary actions from the CSE Department as well as from the University.
- Both the copier(s) and the the person providing the copied material will be punished, and the penalty will be more than just a zero mark in your assignments/exams.
- Links:
 - University's Honor code:
<https://registry.hkust.edu.hk/resource-library/academic-honor-code-and-academic-integrity>
 - University's Penalties for Cheating:
<https://registry.hkust.edu.hk/resource-library/penalties-cheating>

Academic Dishonesty (Cont'd)

- We will use a software to check your codes with others' program, and even with previous assignments. The tool is hard to beat. The suspected cases will be further studied by the instructors and the TAs.



If you are not sure what is considered plagiarism

- **DO NOT** use generative artificial intelligence tools like ChatGPT or similar software for your labs and programming assignments.
- **DO NOT** copy program codes from another student/person.
- **DO NOT** look at the actual program codes of another student.
- **DO NOT** share actual program codes with other students/people (by paper, emails, blogs, FB, Google Doc, etc.).
- **DO NOT** give your program codes to other students who ask for it, and do not ask for a copy of their code either.
- **DO NOT** post your program codes anywhere online.
- **DO NOT** leave your finished/unfinished program codes unattended.
- While we encourage discussion among students, you have to write codes on your own.
- During discussion, you **SHOULD NOT** go to the details such that everyone will end up in the same code.
- It is your responsibility to **protect your code** and ensure that others **CANNOT copy** your work.

The list is by no means exhaustive, and you will need to use your own discretion.

How Hard Should I Work?

- Some people say that a 3-unit course takes 8 hours/week.
- Guideline:
 - **Pre-study** (1 hour): what topic/materials will the coming lecture be covering?
 - **Attend class** (3 hours): The A+ students tell you that they pay FULL attention in class and try to understand everything in the class so that it is easy to review the class materials.
 - **Attend labs** (1 hour)
 - **Post-study** (3 hours): Re-reading the notes, book reading.



That's all!

Any question?



**Welcome
Back!**