Accessing codelab for quizzes

Codelab is a companion website for our class. It has programming exercises in Python that you complete as the Quiz for each module. Codelab is free for all registered students because the CIS Dept. has paid for your subscription.
The first time that you access the website, you will need to register by entering your information. Please use the first and last names that you use in class so I can recognize your work and give you credit for it.

REGISTRATION INSTRUCTIONS FOR STUDENTS

1. Go to www.tcgo1.com **OR** www.tcgo2.com
2. Click **"Register for CodeLab"**
3. Later, during enrollment, use the following Section Access Code: **DEAN-25252-KXBC-31**

After you've registered, use the following instructions to log in:

LOGIN INSTRUCTIONS FOR STUDENTS

1. Go to www.tcgo1.com **OR** www.tcgo2.com
2. Click **"Login to CodeLab"**

The username is the email address given during registration.
The password is the password selected during registration.

Textbook

There is no required textbook for this class, but there is a recommended textbook that you can use for reference.
Click on this link to go to the Green Tea Press webpage, where you can:

- *download* a free e-copy of the textbook to save it on your computer
- *read* it as a webpage
- *buy* a hard copy (physical copy) of the book

EXTRA Credit

CIS 40 - Student Survey No name please

Please take a few minutes (8 questions) to give your opinion
on the class material and how the class was run.
Your feedback is important for the improvement of the course,
thank you in advance.

For questions with ____ in front, please put X for all sentences
that best describe your experience.

1. Your programming experience before the course:
_____ I've never done any programming.
_____ I took a programming course or tried it out once.
_____ I've taken classes or I've been programming recently.

2. For this question, rank 1, 2, 3... (with 1 being the most often).
Where do you find the most helpful material for the homework
and exam?
_____ class notes
_____ book
_____ online
_____ other people (classmate, friend / family ...)

Suggestions to make the class notes better?

3. While completing class work, you refer to the class exercises:
_____often
_____sometime
_____not really

Suggestions to make the class exercises better?

4. Your experience with the codelab quiz:

_____ It was alright after I got used to the questions.
_____ It was helpful for me to practice the syntax.
_____ It took more time to do than the assignment.
_____ It was not very helpful, I prefer longer assignments instead.
_____ It should be used as optional practice and students should not be graded on it.

Other opinion on the quiz?

5. Your experience with the assignments:

_____ They were fair, challenging but doable.
_____ They were too easy, I wish there were harder questions.
_____ They were overall too difficult, the lectures and exercises didn't give me enough preparation.
_____ I didn't have enough time in my busy schedule to do the assignments, but they seemed okay.
_____ I liked being able to show work and fix the code if needed, so I could get full credit.
_____ Grading was too tough.

Suggestions to make the assignments a good learning tool?

6. Your experience with the exams:

_____ Pretty straightforward.
_____ Too many questions, too many concepts in each exam.
_____ Exam questions don't correspond with the class exercises or assignments.
_____ Exams are good for showing me what my strengths / weaknesses are.
_____ Grading on exam was fair.
_____ Grading on exams was too tough, too many points taken off.
_____ There are too many exams, I prefer just one midterm and one final.
_____ I prefer to take a final exam instead of doing the team project.

Other opinions on the exams?

7. The support your receive in class:

_____ Forums were helpful.
_____ Email was answered in a timely manner.
_____ Email took too long or answer was not helpful.
_____ Class lab time was too short.
_____ Class lab time was helpful.
_____ Wait time for the class lab time was long.
_____ Office hour was helpful.
_____ I didn't need any help.
_____ I didn't know where to get help.

Improvements for how to get help?

8. Your experience in class:

a. Overall I spent about _____ hours per week on class work outside of class time.

b. The pace of the class was:

_____ A bit too fast _____ A little slow _____ About right

c. Did the class give you a good idea of what programming and software development is about?

d. Did the class encourage or discourage you from more programming courses?

e. Would you recommend this class for someone who's new to programming?
And what advice would you give them?

Thank you! Please print this out and turn it in during class time.

Quiz 1

Software or programs are written in order to:
Select one:
a. create solutions for many areas such as finance, sports, science, business, entertainment, research, education, etc.
b. solve problems that are in the scientific and technical areas only.
c. work with laptops only, since they alone are considered computers.
Feedback
The correct answer is: create solutions for many areas such as finance, sports, science, business, entertainment, research, education, etc.

The part of a computer that actually executes the instructions of a program is:
Select one:
a. the CPU.
b. the internet connection.
c. the memory.
d. the IO device.
Feedback
The correct answer is: the CPU.

Data that are text characters:
Select one:
a. Are converted into numbers by using the 2 standards for conversion: ASCII and Unicode.
b. Are converted into numbers by using a conversion scheme that is specific to each type of computers.

c. Are stored as text characters, and then converted to numbers during the "Decode" phase of the instruction cycle.
d. Are stored and used by the CPU as text characters.
Feedback
The correct answer is: Are converted into numbers by using the 2 standards for conversion: ASCII and Unicode.

The following are IO devices:
Select one:
a. mouse, touch screen, camera
b. power cord, cable, lock
c. CPU, RAM, hard disk
d. programs, hardware, software
Feedback
The correct answer is: mouse, touch screen, camera

Out of the 4 main components of a computer, we interact directly with:
Select one:
a. the internet connection.
b. the CPU.
c. the memory.
d. the IO devices.
Feedback
The correct answer is: the IO devices.
Select the *true* statement about how data are stored on the computer:
Select one:
a. Data are always converted to numbers if they're not already numbers, and stored as decimal numbers.
b. Data are converted to text characters so they can be efficiently stored.
c. Data are always converted to numbers if they are not already numbers, and stored as binary numbers.
d. Data are stored in their actual forms, as numbers, text, and images.
Feedback
The correct answer is: Data are always converted to numbers if they are not already numbers, and stored as binary numbers.

Within the instruction cycle, the "fetch" step is to:
Select one:
a. Copy one instruction from memory into the CPU.
b. Copy data from the internet connection to the CPU.

c. Copy one instruction from an IO device into memory.
d. Copy all instructions of a program from memory into the CPU.
Feedback
The correct answer is: Copy one instruction from memory into the CPU.
What is computer programming?
Select one:
a. Changing the settings on the computer so it runs more efficiently.
b. Interacting with the computer to get data that is stored in the computer.
c. Using the computer to do work.
d. Writing a list of instructions to tell the computer to do a task.
Feedback
The correct answer is: Writing a list of instructions to tell the computer to do a task.
Select the *true* description of how instructions in a program are run in an instruction cycle:
Select one:
a. Only the first instruction goes through all 4 steps of the instruction cycle. After that, all instructions only go through the "Execute" step.
b. The instruction cycle is only for older computers. Modern computers can run all instructions without repeating a cycle.
c. The 1st instruction goes through the 4 steps of the instruction cycle, then the 2nd instruction goes through the 4 steps, then the 3rd instruction... until all instructions are run.
d. *All* the instructions of a program go through the 1st step of the instruction cycle, then they all go through the 2nd step, then all go through the 3rd step and all go through the 4th step.
Feedback
The correct answer is: The 1st instruction goes through the 4 steps of the instruction cycle, then the 2nd instruction goes through the 4 steps, then the 3rd instruction... until all instructions are run.

QUIZ 2

Python scripts have names that must end with:
Select one:
a. .py
b. .python
c. .PY

d. .p

Feedback

The correct answer is: .py

Typing Python instructions in a script is better than typing Python instructions at the shell when:

Select one or more:

a. The computer needs to do a complicate task that requires multiple instructions to work together.

b. The number of instructions you type in exceeds the maximum number for the shell.

c. You want an instruction to run faster.

d. You want to run the same set of instructions at many different times.

Feedback

The correct answer is: You want to run the same set of instructions at many different times., The computer needs to do a complicate task that requires multiple instructions to work together.

Select the *true* statement about debugging.

Select one:

a. Debugging means finding and correcting an error in a Python statement so that the output is as expected.

b. Debugging is rarely needed when writing programs.

c. Debugging is used to remove run time errors only.

d. When there is an error in an instruction, the error message that appears is in machine language and is not useful in debugging.

Feedback

The correct answer is: Debugging means finding and correcting an error in a Python statement so that the output is as expected.

To follow the software development cycle, when you first read the programming assignment, you should first:

Select one:

a. Read the requirement carefully, think about the steps of your program, write the program, and then submit it or release it.

b. Start typing Python statements right away to create the program, so you have time to test it.

c. Think about how to test your program.

d. Read the assignment to look for the exact requirements, and then plan the steps or design of your program.

Feedback

The correct answer is: Read the assignment to look for the exact requirements, and then plan the steps or design of your program.

Circle the *false* statement about Python. Python is:
Select one:
a. A shortened name for a British humor group called Monty Python, which inspired the name of a computer language.
b. A programming standard.
c. An interpreter or translator of the Python language into binary.
d. A computer language.
Feedback
The correct answer is: A programming standard.
An integrated development environment is:
Select one:
a. The steps to develop software: plan, create, test, release, maintain.
b. All the software tools and applications that are developed by a company or an organization.
c. A set of tools that are combined together to allow someone to write a program, run it, debug it.
d. The computer, office space, and support that someone has while writing or developing software.
Feedback
The correct answer is: A set of tools that are combined together to allow someone to write a program, run it, debug it.
Select the true statement about the development cycle.
Select one:
a. The development cycle for a product starts with the "Create" phase, where the code is written.
b. The development cycle is a way to plan, create, test, release, and maintain a software product.
c. The development cycle describes a software developer's or programmer's work history.
d. The development cycle is used by the Marketing team in a company to develop strategies to market software products
Feedback
The correct answer is: The development cycle is a way to plan, create, test, release, and maintain a software product.
In the context of programming, the word code means:
Select one:
a. The Python interpreter itself.
b. A sequence of instructions written in a computer language such as Python.
c. A secret language used by spies.

d. A set of rules that show how Python translates the Python language into binary.

Feedback

The correct answer is: A sequence of instructions written in a computer language such as Python.

Circle the *true* statement about Python.

Select one:

a. Python is free to use. There is no cost to install and use it on a computer.

b. Python only runs on Windows computers.

c. There is only one version of Python

d. In addition to installing Python, you must search for and install a development environment in order to work with Python.

Feedback

The correct answer is: Python is free to use. There is no cost to install and use it on a computer.

Select the *false* statement about IDLE.

Select one:

a. You interact with IDLE by typing commands at the shell.

b. When typing in Python statements at the shell, you must use binary.

c. When you see >>> at the shell, it means IDLE is ready for you to type in a Python statement.

d. IDLE is the default development environment for Python.

Feedback

The correct answer is: When typing in Python statements at the shell, you must use binary.

Exam 1

Covers modules 1 and 2.
Study class notes, exercises, quizzes, assignments.
Closed book / notes.
Bring pencil and eraser so you can write your answers on the exam paper

Quiz3

Log in to Codelab at www.tcgo1.com OR www.tcgo2.com
Do the exercises of Chapter 2: Variables, Expressions, and Statements.
There are 15 questions. Each 3 correct answers is worth 1 point.

The exercises are coding questions.
For each question, you type in Python statements or expressions to answer and then click the Submit button.
Codelab will then check your answer and give you feedback and hints if there is an error.
You can keep entering your answer and clicking Submit as many times as you like until you get the correct answer.
When the quiz is closed, then you can no longer modify your answer, and Codelab will show you the solution.
Your quiz score on Catalyst will appear a few days after the quiz closes.

Quiz 4

Log in to Codelab at www.tcgo1.com OR www.tcgo2.com
Do the exercises of Chapter 3: Functions.
There are 15 questions. Each 3 correct answers is worth 1 point.
The exercises are coding questions.
For each question, you type in Python statements or expressions to answer and then click the Submit button.
Codelab will then check your answer and give you feedback and hints if there is an error.
You can keep entering your answer and clicking Submit as many times as you like until you get the correct answer.
When the quiz is closed, then you can no longer modify your answer, and Codelab will show you the solution.
Your quiz score on Catalyst will appear a few days after the quiz closes.

Exam 2

Covers modules 3 and 4.
Study from class notes, exercises, quizzes, assignments.
Closed book, but you can use 1/2 page, 2 sides, of 8.5 x 11'' paper (or 1 page, 1 side, of 8.5 x 11 paper) for notes if you like.
Bring pencil and erase to write your answers on the exam paper.

Quiz 5

This quiz covers the turtle graphics topic.

You can start the quiz any time but you must finish the quiz before the due date / time.
After the quiz closes, you will see your score and you can review the solution to the quiz . Make sure you read and understand the solution as it will help you prepare for the in-class exam.

Here are some guidelines for taking the quiz:

- Each quiz has 10 questions.
- Once you've started the quiz, each answer you selected will be automatically saved, so you can stop the quiz at any time and come back at a later time (before the quiz is closed) to continue with the quiz.
- When you've finished the quiz, you can click "Submit all and finish" to submit all your answers.
- Once the quiz is closed at 11:55pm on the due date, you can no longer take the quiz.
- Because the solution is released as soon as the quiz is closed, there is no make up for the quiz. Please plan accordingly.

After the quiz is closed, Catalyst will show that you've made 1 attempt. Click on the 1 to get the quiz solution and feedback.

If t is the name of the turtle object, select the correct output for the following code:
t.shape("circle")
t.stamp()
t.up()
t.fd(200)
t.stamp()
Select one:
a. nothing because the pen is up.
b. 1 circle because the pen is up half way through the code.
c. 2 circles because the shape is "circle".
d. 2 Python stamps because the method stamp is used twice.
The correct answer is: 2 circles because the shape is “circle".
If t is the name of the turtle object, select the correct result for the following code:
t.begin_fill()
t.circle(100, 180)
t.end_fill()

Select one:
a. Python produces an error message because a half circle cannot be filled.
b. A half circle is drawn, but can't be filled because it's not a closed shape.
c. A half circle is drawn and filled.
d. 2 circles of radius 100 and radius 180 are drawn and filled.
Feedback
The correct answer is: A half circle is drawn and filled.

What does the line: `from turtle import *` do?
Select one:
a. It creates the turtle object.
b. It causes the program to output graphics instead of text.
c. It brings the functions and data of the turtle module into the workspace so they can be used.
Feedback
The correct answer is: It brings the functions and data of the turtle module into the workspace so they can be used.

The turtle module is:
Select one:
a. A set of shapes and colors that can be used for graphics output
b. A built-in part of the Python language.
c. A package of functions and data in Python that are written for scientists to study turtles and other reptiles.
d. A package of functions and data that provides basic graphics capabilities.
Feedback
The correct answer is: A package of functions and data that provides basic graphics capabilities.

Which characteristic of the turtle pen cannot be changed?
Select one:
a. size
b. weight
c. color
d. shape
Feedback
The correct answer is: weight

A turtle object named t has just been created and is in the start position.
Select the code that will draw a capital L shape.
Select one:
a. t.right(90)
t.forward(120)
t.left(90)
t.forward(60)
b. t.back(60)
t.right(90)
t.back(120)
c. t.forward(120)
t.right(90)
t.forward(60)
d. t.forward(120)
t.right(90)
t.forward(60)
t.left(90)
Feedback
The correct answer is: t.right(90)
t.forward(120)
t.left(90)
t.forward(60)

If t is the name of the turtle object, then the location of the turtle after running: t.home()
is equivalent to the location of the turtle after:
Select one:
a. t.clear()
t.goto(0,0)
b. t.up()
t.goto(0,0)
t.down()
c. t.goto(0,0)
d. t.forward(0)
Feedback
The correct answer is: t.goto(0,0)

If t is the name of the turtle object, choose the Python statement that will cause the turtle object to move to the lower right quadrant of the screen.
Select one:

a. t.goto(-100, -100)
b. t.goto(100, 100)
c. t.goto(-100, 100)
d. t.goto(100, -100)
Feedback
The correct answer is: t.goto(100, -100)

Select the *true* choice regarding the Python statement: wilma = Turtle()

Select one:
a. The Python statement creates the turtle shape.
b. Immediately following the Python statement above, use: t.color("red") to change the pen color to red.
c. The statement has a syntax error and should be written as: wilma = turtle()
d. The variable wilma is the name of the turtle object.
Feedback
The correct answer is: The variable wilma is the name of the turtle object.

From the start position (where the turtle object is first created), select the Python statements that will cause the turtle object named t to go left for a short distance.
Select one:
a. t.forward(100)
b. t.left()
t.forward(100)
c. t.left(180)
t.forward(100)
d. t.left(90)
t.forward(100)
Feedback
The correct answer is: t.left(180)
t.forward(100)

Extra credit upload of your turtle graphics creation

Create an image file of your turtle graphics creation. You can use any screen capture tool on your computer or take a picture of your creation. When you have an image file on your computer, follow these instructions:
- Click "Add a new discussion topic"
- In the "Subject" field, give your art work a name or a title
- At the "Message" window, look at the top menu bar for the icon to insert /edit an image
- Click the icon, and then click on "Find or upload an image" at the pop up window
- Select "Browse" to find the location of your image file on your computer, then click on your image file and click "Open" to select it, and then click "Upload this file"
- When the image shows up, click on the "Appearance" tab and enter 300 for one of the dimensions to resize the image. Catalyst will automatically resize the other dimension.
- Click "Insert" to put the image in your posting. When asked about a description of the image, click "No".

You earn 2 pts extra credit for posting your turtle graphics work that represents a recognizable object.

Quiz 6

Log in to Codelab at www.tcgo1.com OR www.tcgo2.com
Do the exercises of Chapter 5: Conditionals.
There are 15 questions. Each 3 correct answers is worth 1 point.
The exercises are coding questions.
For each question, you type in Python statements or expressions to answer and then click the Submit button.
Codelab will then check your answer and give you feedback and hints if there is an error.
You can keep entering your answer and clicking Submit as many times as you like until you get the correct answer.
When the quiz is closed, then you can no longer modify your answer, and Codelab will show you the solution.
Your quiz score on Catalyst will appear a few days after the quiz closes.

Exam 3

Covers modules 5 and 6.
Study from class notes, exercises, quizzes, assignments.

Closed book, but you can use 1/2 page of 8.5 x 11'' paper for notes if you like.
Bring pencil and erase to write your answers on the exam paper.

Quiz 7

Log in to Codelab at www.tcgo1.com OR www.tcgo2.com
Do the exercises of Chapter 7: Iterations.
There are 10 questions. Each answer is 1/2 point.
The exercises are coding questions.
For each question, you type in Python statements or expressions to answer and then click the Submit button.
Codelab will then check your answer and give you feedback and hints if there is an error.
You can keep entering your answer and clicking Submit as many times as you like until you get the correct answer.
When the quiz is closed, then you can no longer modify your answer, and Codelab will show you the solution.
Your quiz score on Catalyst will appear a few days after the quiz closes.

Exercise 8 extra credit

For 2 pts extra credit: Write Python code to print the numbers 1, 2, 3... next to each language as you print the languages.txt file.
When done, click on Edit Submission, copy your code to print in the textbox, and submit.
Example output:

```
1 English
2 whale
3 Klingon
4 Python
```

========== Solution ==========
The solution is in the exercise8Solution.py file.

Quiz 8

Log in to Codelab at www.tcgo1.com OR www.tcgo2.com
Do the exercises of Chapter 14: Files.
There are 10 questions, every question is 1/2 pt.
The exercises are coding questions.

For each question, you type in Python statements or expressions to answer and then click the Submit button.
Codelab will then check your answer and give you feedback and hints if there is an error.
You can keep entering your answer and clicking Submit as many times as you like until you get the correct answer.
When the quiz is closed, then you can no longer modify your answer, and Codelab will show you the solution.

Exam 4

Covers modules 7 and 8.
Study from class notes, exercises, quizzes, assignments.
Closed book, but you can use 1/2 page of 8.5 x 11'' paper for notes if you like.
Bring pencil and erase to write your answers on the exam paper.

Quiz 9

Log in to Codelab at www.tcgo1.com OR www.tcgo2.com
Do the exercises of Chapter 10: Lists.
There are 15 questions. Each 3 correct answers is 1 point.
The exercises are coding questions.
For each question, you type in Python statements or expressions to answer and then click the Submit button.
Codelab will then check your answer and give you feedback and hints if there is an error.
You can keep entering your answer and clicking Submit as many times as you like until you get the correct answer.
When the quiz is closed, then you can no longer modify your answer, and Codelab will show you the solution.
Your quiz score on Catalyst will appear a few days after the quiz closes.

Exercise 10 extra credit

As discussed in class, go to the exercise 10 partial solution file to find the extra credit question.
When you're done testing the code, click on Add Submission and then copy the __str__ method into the textbox to submit before the due time.
Only copy the __str__ method please, don't copy the whole file.

The extra credit is 1 pt and there is no late submission.

Quiz 10

Log in to Codelab at www.tcgo1.com OR www.tcgo2.com
Do the exercises of Chapter 15: Classes.
There are 10 questions. Each correct answer is 1/2 point.
The exercises are coding questions.
For each question, you type in Python statements or expressions to answer and then click the Submit button.
Codelab will then check your answer and give you feedback and hints if there is an error.
You can keep entering your answer and clicking Submit as many times as you like until you get the correct answer.
When the quiz is closed, then you can no longer modify your answer, and Codelab will show you the solution.
Your quiz score on Catalyst will appear a few days after the quiz closes.

Exam 5

Exam 5

Generating random numbers and getting 2 Python files to work together

The following 2 topics were discussed in class:
Generating random numbers.
We've generated random numbers before in Assignment 6, but in Assignment 6 we generated one floating point number.
For the team project, we need to generate random integers, and we need to generate multiple integers, so there is more involved.

- At the top of mm.py: from random import *
-
- In the __init__ method of the Mastermind class:
- Call this random method: seed()

- This method uses the current system time to seed the random generator
- When we need to a random integer:
- Call this random method: number = randint(start, end)
- where number is the random integer, and start <= number <= end
-
- "Convert" the random integer into a color.
- Hint: how did you convert the letter grade into a numeric grade in Assignment 10?

How to get mm.py and mOutput.py to work together.

- mm.py has the driver code so it's where execution will start
-
- At the top of mm.py, import MastermindOuput with: from mOuptut import *
- (just like from turtle import * or above: from random import *)

Final project demo

Final project demo:
- All team members must be present for the demo.
- I will quickly check that your Mastermind class and MastermindOutput class have the required methods.
- Then you run the demo by playing the game 2 times, once with 3 colors and the second time with 4 colors.
- Then I ask a "show me where the code does ..... (a task)" to each team member.

Grading rubric

The final project takes place of the final exam, therefore it is graded as if it's a "hybrid" between a homework assignment and an exam.

1. The demo (25 pts)
   - Thursday 3/23 is reserved for showing work only.
   - I would like every group to have a chance to show their work and be done by Thursday. Therefore, if you have questions, please ask before Thursday's class time.

- If a team isn't ready for demo by Thurs 3/2, then the next demo day is Wed 3/29, at 7:30am. (Consider that the school's incentive to get you to finish the project on time.)
- You don't have to wait until 3/23. The team can show work at any class time or office hour during the last week of class.
- Everyone in the team must be present for the demo.
- The demo involves the team running their code and playing the game twice: with 3 colors and then with 4 colors.
- After the 2 games are played, I will ask each person in the team to explain how a part of the code works.
- An example question: How does the MastermindOutput object know what pattern to draw?
- To answer, you can show me the corresponding code and explain it.
- Everyone will be asked a different question, and the question is answered by one person in the team. Other team members can't help out, no matter how tempting it is.
- This means that everyone should review the code and understand it.
- This is a team project and you don't necessarily write every line of code yourself, but you should still review and understand the code of the whole project.
- This also means that if you understand the code really well, you need to make sure everyone else in the team knows it also.
- Everyone on the team gets the same score, so if the team keeps someone 'in the dark' and they can't answer their question, then the whole team gets a lower score.

2. The code submission (25 pts)
   - The deadline to turn in the files on Catalyst is Thurs 3/23, 11:55pm.
   - Each person should turn in a copy of the files. I will randomly pick one team member's code to grade, so please make sure you upload the final and complete version of your files.
   - Please make sure you upload the files on time.
   - There is a 20% per day penalty for being late, and 11:56pm on Thursday is 1 day late.
   - The code you turn in will be graded as is, so please double check the project requirements and / or ask me for clarifications.
   - The code requirements are listed in bullet point format of the project description so it's easy for you to check off items as you review the code.

Final project sign up extra credit

Form a team of 2-3 students and complete the steps shown in the Teams forum by Thurs 3/16, 11:55pm, for 1 pt extra credit toward the Team Project score.

Teams

To earn points for the final project:
1. Get together with 1 or 2 other classmates to form a team
2. Come up with a team name
3. One person in the team will create a new posting with the subject: team name
   and the post: list of team member names

The first posting is created as an example