Midterm 1

https://piazza.com/class/m047qf296p84ym/post/173

- Exam location: Education Building Room 211
- Duration: You will have 45 minutes to answer the exam
- Exam date and time: Friday, 9/26/24. You should arrive at 8:55 am because we will assign you a seat (if everybody is ready before 9:00 am, we can start earlier and you will have some extra time). You will take the exam from 9:05 a.m. to 9:50 a.m.
- During the exam, you cannot use external resources (books, notes, neighbors, electronic devices like cellphones, headphones, watches, etc.)
- Once the exam starts, nobody can use the restroom. If you leave the classroom, your exam will be collected. Students with medical conditions who need to take breaks should take the test at the DRC. Email me if you have any questions.
- You will find the words “Version X” across the exam; please ignore them. This is just for grading purposes.
- Cellphones, headphones, and watches are considered external resources. You will be asked to turn your cellphone off - not silent mode, not airplane mode - all the way off and place it on your backpack. If you must keep your phone on or have no backpack, let us know so we will keep your phone while you take your test.
- We will ask you to remove your caps and hoodies and show us your wrists.
- The cellphone cannot be on you during the exam. If your cell phone is in your pocket, it will be considered cheating even if you are not looking at it (same for headphones and watches). We will collect your exam and ask you to leave.
- Place your answers in the given space. You can show your work on any blank spaces except the boxes for final answers.
- You cannot speak with anyone at your table.

Do NOT bring to the exam:

- Any type of calculator
- Cellphone (turn it off and keep on your backpack. If your cell phone is visible - e.g. in your pocket, we will collect your test and ask you to leave the classroom).
- Headphones (we will ask you to show us your ears)
- Any type of watch (even if it is an analog watch, you must remove it before the exam starts)
- Books, notebooks, printouts, etc.
- Scratch paper. We will provide it if you need any. Raise your hand and ask for it.
- Pencil case

You must bring to the exam

- Your CatCard for identification (we will ask for it)

- Pen, pencil, eraser, sharpener

Remember to solve the review guide and come up with questions for the review session on Thursday:
https://piazza.com/class/m047qf296p84ym/post/168

Instructions to Participate in Today's Session

To send your answers to today's questions, you can access Top Hat:

- As a guest

Or

- Registered User

1. If you want to participate as a guest

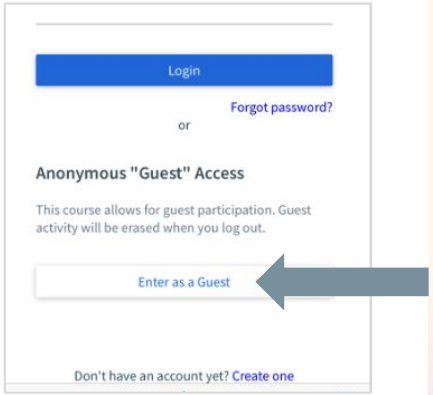
Mobile Instructions

01

Scan the **QR Code**

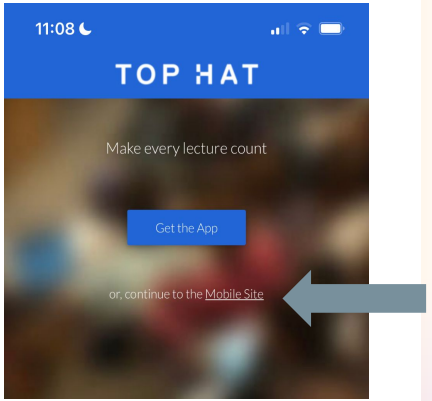
02

Scroll down and select **‘enter as guest’**



03

Select **‘continue to mobile site’**

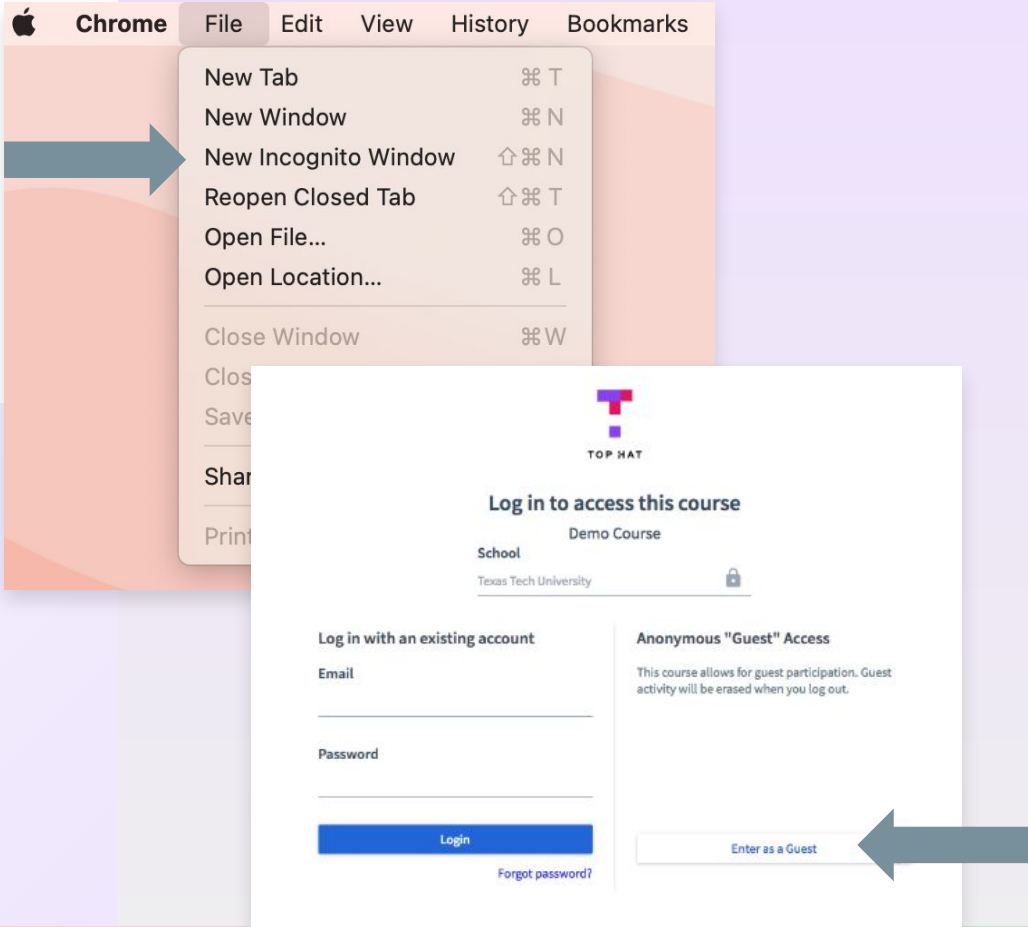


1. If you want to participate as a guest

Laptop/Tablet Instructions

Follow these instructions to access a temporary student account to participate today!

1. On your device, navigate to a Private or Incognito Browser Window
2. Enter https://app.tophat.com/e/170052
3. Select **'Enter as Guest'** on the right hand side of the screen
4. You're in! Participate as a student in today's session



2. If you want enter as a registered user

1. Navigate to app.tophat.com or download and open the app
2. Enter University of Arizona as the school
3. Sign in with your Net ID
4. Search for class with the join code **170052** and start participating

CS 101
Code Style - part 2

Appendix A

TODO THIS WEEKEND - Back to normal

- Weekly Reading Conditions
- Assignment 4

Spacing

- There should be a space between the various “chunks” of code in your program
  - Between **setup** and **draw**
    - And other functions . . .
  - Between chunks of code that do logically different things
  - Between global variable declarations and functions

ICA

What does this code do?

```
int P1z = 0;

void setup () { size(300, 200); }
void  draw()  {  background(200, 230, 255);
      strokeWeight(0);
fill(100, 255, 100);
    rect(0, 140, 300, 100); strokeWeight(4);
      for(int i = 0;
i < 2001; i += 25)
 {
line(P1z + i, 50,   P1z + i, 150);
   }
  line(0, 75, 300  , 75);
      line( 0 ,   125, 300, 125);  P1z = P1z - 1;
   // What is going on here?
}
```

How about this?

```
// variable to control
// the fence animation
int position = 0;

/**
 * Set the size of the
 * Fence animation
 */
void setup () {
  size(300, 200);
}
```

ICA

```
void draw() {
  background(200, 230, 255);
  strokeWeight(0);
  fill(100, 255, 100);
  rect(0, 140, 300, 100);
  strokeWeight(4);

  // repeatedly draw the fence posts
  for(int i = 0; i < 2001; i += 25) {
    line(position + i, 50, position + i, 150);
  }

  line(0, 75, 300, 75);
  line(0, 125, 300, 125);
  // increment to control fence movement speed
  position = position - 1;
}
```

Variable names

Clear variable names make the code clearer

```
// variable to control fence animation
int position = 0;

void draw() {
  background(200, 230, 255);
  strokeWeight(0);
  fill(100, 255, 100);
  rect(0, 140, 300, 100);
  strokeWeight(4);

  // repeatedly draw the fence posts
  for(int i = 0; i < 2001; i += 25) {
    line(position + i, 50, position + i, 150);
  }

  line(0, 75, 300, 75);
  line(0, 125, 300, 125);
  // increment to control fence movement speed
  position = position - 1;
}
```

```
int P1z = 0;

void setup () { size(300, 200); }
void  draw()  {  background(200, 230, 255);
      strokeWeight(0);
fill(100, 255, 100);
    rect(0, 140, 300, 100); strokeWeight(4);
      for(int i = 0;
i < 2001; i += 25)
 {
line(P1z + i, 50,   P1z + i, 150);
   }
  line(0, 75, 300  , 75);
      line( 0 ,   125, 300, 125);  P1z = P1z - 1;
   // What is going on here?
}
```

Processing-Enforced naming rules

- There are some processing-enforced rules for variables names
  - Can start with any letter (A-Z, a-z), underscore (_), dollar sign ($)
  - Can continue with any of the above, and can also continue with digits (0-9)
  - Can have unlimited length
  - Cannot be any Processing keyword (void, if, else, for, false, true, null, etc)

Naming Style Guidelines - camelCase naming

- In addition to the enforced rules, programmers have come up with ***best-practices*** for variable names
- Some programming languages have differing naming guidelines
- In processing, we use ***camelCase***
- **camelCase** - compounding words together where the first word is not capitalized, and the rest are, and no spaces
    - iPhone eBay

Examples - Variable naming - camelCase

- What would the following convert to in camelCase?
  - “a very large number” = aVeryLargeNumber
  - “the 3rd best item” = the3rdBestItem
  - “times 10” = timesTen
  - “red, green, blue” = redGreenBlue
  - “6 afraid of 7” = sixAfraidOfSeven

Which of these variables are valid?

```
(1)  int 123abc = 17;
(2)  int LARGE NUMBER = 10000;
(3)  float AnotherNumber34 = 123.456;
```

https://app.tophat.com/e/170052

Which of these variables are valid?

```
1. char not?sure_ = ‘r’;
2. int one_TWO_three = 123;
3. char 3verything3 = 7;
4. int true = 1
```

https://app.tophat.com/e/170052

Variable naming

For each variable, determine if it is either **(A)** an error, **(B)** valid, but not good camelCase style, or **(C)** valid and good camelCase style

```
(1)  int 8timesTheForce = 16;
(2)  int tallestPerson = 82;
(3)  float InchesToFeet = 12.0;
(4)  char FIRSTCharacter = ‘A’;
(5)  bool skyIsBlue = true;
(6)  int 7eight9 = 789;
```

Example format answer: A,A,A,A,A,A

Practice For Loops