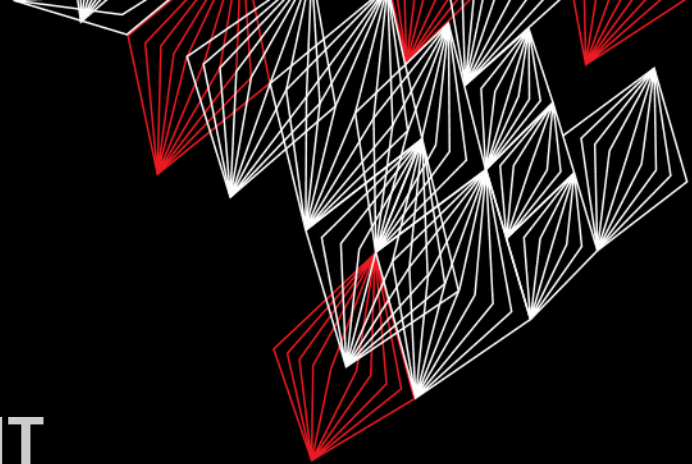


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APPLICATION DEVELOPMENT

LECTURE 7: PRACTICE EXAM



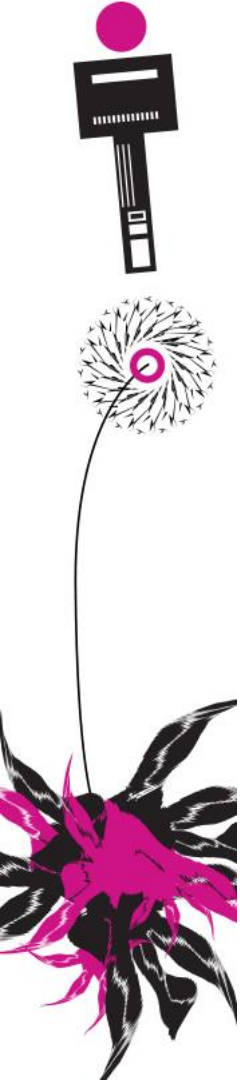
```
class AppDev {
```



```
}
```



Part of **SmartProducts**



INTRODUCTION

APPLICATION DEVELOPMENT



- Recap
- Practice exam
- Assignment

Fjodor van Slooten
W241 (*Horst-wing West*)
f.vanslooten@utwente.nl



Next week: no lecture but assistance with assignment available in the morning

UNIVERSITY OF TWENTE.

slides @ vanslooten.com/appdev

LAST WEEK

- Info on 'design' review 3
- Lists (arrays)
- Userinterfaces, media (sounds & images)
- Timers
- LeJOS: Super Pro & LCD display

```
// Go through a list of tiles:  
for (Tile t : tiles) { // for each tile in the list..  
    t.setClosed(); // close the tile  
}
```

```
for (int i = 0; i<tiles.size(); i++) {  
    tiles.get(i).setClosed();  
}
```

PLAY SOUND

NEW VERSION OF PLAYCLIP CLASS WITH ASSIGNMENT



- Play certain sounds a lot: create separate objects
- Each **PlayClip** object executes a sound simultaneously (in a separate thread)

```
// create two objects for two sounds:  
PlayClip ding = new PlayClip("sound/Ding.wav");  
PlayClip fail = new PlayClip("sound/Fail.wav");  
  
// check tiles match:  
if (tiles_match)  
    ding.play();  
else // no match  
    fail.play();
```

TIMER

- Last week: `javax.swing.Timer`, executes method every clock tick
- Schedule a task, use: `java.util.Timer`

```
// schedule a task
import java.util.Timer;

Timer timer = new Timer();

// schedule a task to run once after a certain period:
timer.schedule(new TimerTask() {
    @Override
    public void run() {
        // do this after 3000 ms:
        reset();
    }
}, 3000);
```

Used in assignment 7



CRASH...? APPLICATION NOT WORKING?

1. Scroll up in Console
2. Click on error (in own code) to go there

```
Problems @ Javadoc Declaration Console
GameUI_v2 (1) [Java Application] C:\Program Files (x86)\Java\jre1.8.0_131\bin\javaw.exe (15 jun. 2017 10:57:31)
prevClick=-1 curClick=1
Clicked tile 2 cow
prevClick=1 curClick=2
Match
Exception in thread "AWT-EventQueue-0" java.lang.NullPointerException
    at GameUI$ImageButtonListener.actionPerformed(GameUI.java:250)
    at javax.swing.AbstractButton.fireActionPerformed(Unknown Source)
    at javax.swing.AbstractButton$Handler.actionPerformed(Unknown Source)
    at javax.swing.DefaultButtonModel.fireActionPerformed(Unknown Source)
```

Error at line 250

Finding a problem: debug or use *System.out.println()*

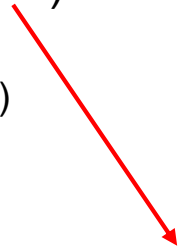
DESIGN REVIEW 3: PROTOTYPE

WHAT DO WE EXPECT?

Review next
week: June 23th

REVIEW 3

- A working prototype
 - Which: proves ideas, complies with constraints (p4 Sound Bite assignment desc.)
- A *plus* would be if you have an integrated prototype (not one piece for Human Factors, one piece for Electronics...)
- At review: demonstrate prototype, show code, get advice
- Hand-in (together with report @ **June 30th**)
 - Demo (video, photo's)
 - Definitive versions of specs+design (review 1+2)
 - All code ([Eclipse projects](#))



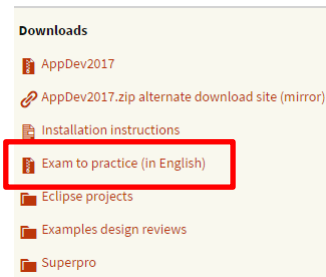
BlackBoard: Project >  Submission

PRACTICE EXAM

Exam: Monday
July 3th 8:45

- Full exam of last year with answers (translated to English):

downloads @ vanslooten.com/appdev



PRACTICE EXAM

APPENDIX

Exam: Monday
July 3th 8:45

Appendix: Shortened API documentation for exam of Application Development.

This documentation is based on docs.oracle.com/javase/8/docs/api

java.lang

Class Math

Field Summary

static double	E The double value that is closer than any other to e , the base of the natural logarithms.
static double	PI The double value that is closer than any other to π , the ratio of the circumference of a circle to its diameter.

Method Summary

static double	abs (double a) Returns the absolute value of a double value.
---------------	---------------------------------------------------------------------------------

	Returns the natural logarithm (base e) of a double value.
static double	pow (double a, double b) Returns the value of the first argument raised to the power of the second argument.
static double	random () Returns a double value with a positive sign, greater than or equal to 0.0 and less than 1.0.
static int	round (float a) Returns the closest int to the argument.
static double	sin (double a) Returns the trigonometric sine of an angle.
static double	sqrt (double a) Returns the correctly rounded positive square root of a double value.
static double	tan (double a) Returns the trigonometric tangent of an angle.

Prepare to vote

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TXT ① Text to **+316 4250 0030**
 ② Type **APP** <space> **your choice** (e.g. *APP b*)

A Java application has a "start" class that contains a method which is the starting point of the application. What is the name of this method?

- A. frame()
- B. start()
- C. main()
- D. run()

The question will open when you start your session and slideshow.

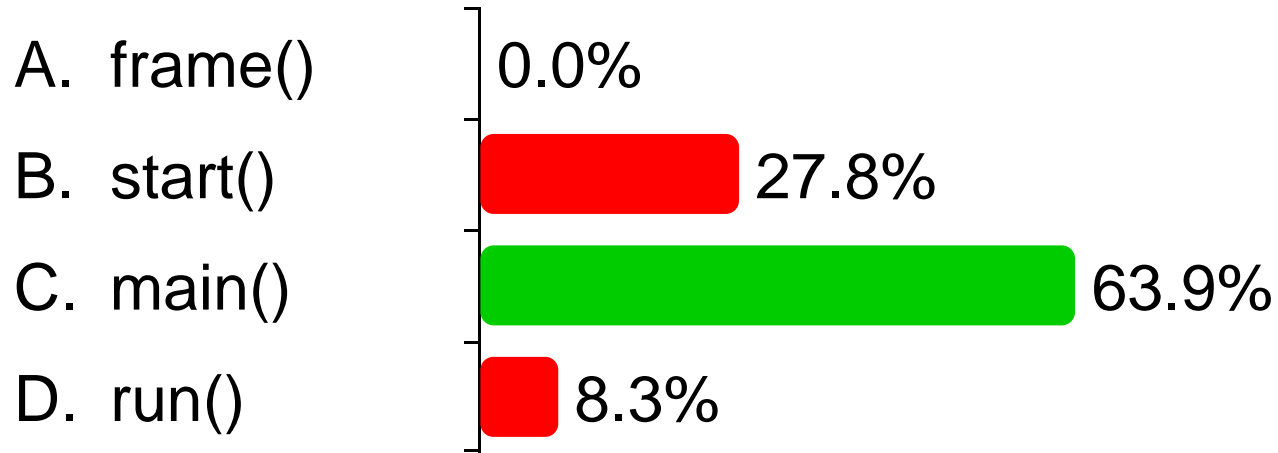
Votes: 36


 Closed

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A Java application has a "start" class that contains a method which is the starting point of the application. What is the name of this method?



 Closed

Which are valid variable names? (More than 1 answers possible)

- A. Coca Cola
- B. c:\temp
- C. cashValue
- D. 4U
- E. U2
- F. xs4all
- G. mousebutton

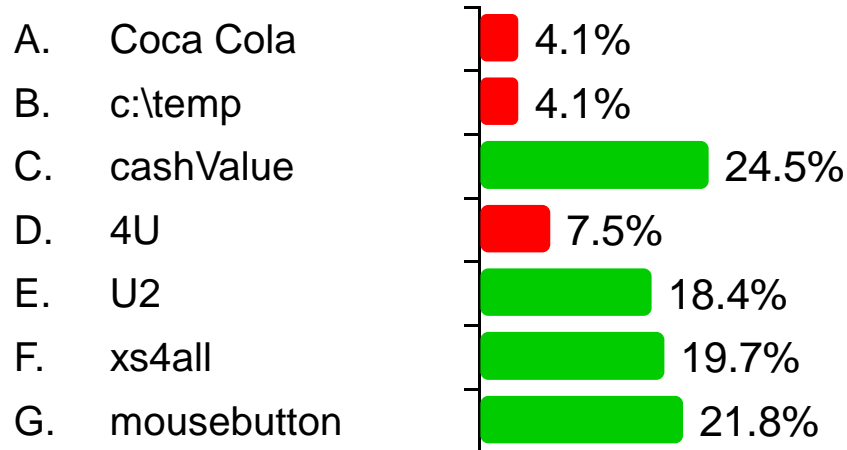
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Votes: 147

 Closed

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Which are valid variable names? (More than 1 answers possible)



 Closed

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In Java, there is a common practice in terms of naming code parts. What is this part?:
`readTemperature()`

- A. object
- B. method
- C. class
- D. variable

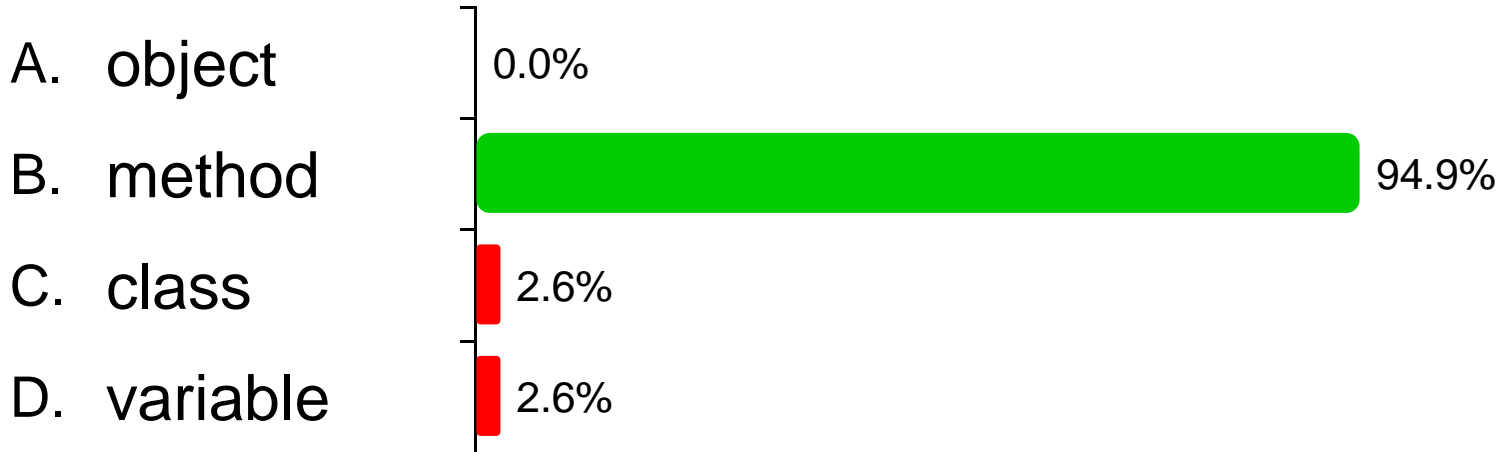
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Votes: 39

 Closed

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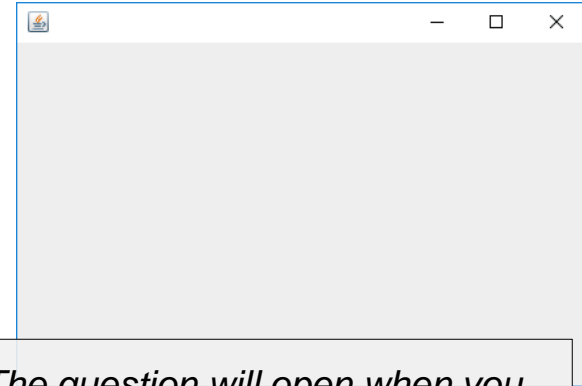
In Java, there is a common practice in terms of naming code parts. What is this part?:
`readTemperature()`



 Closed

What type of object do you need to create a window (border and title bar) for an application?

- A. JApp
- B. JFrame
- C. JPanel
- D. JWindow

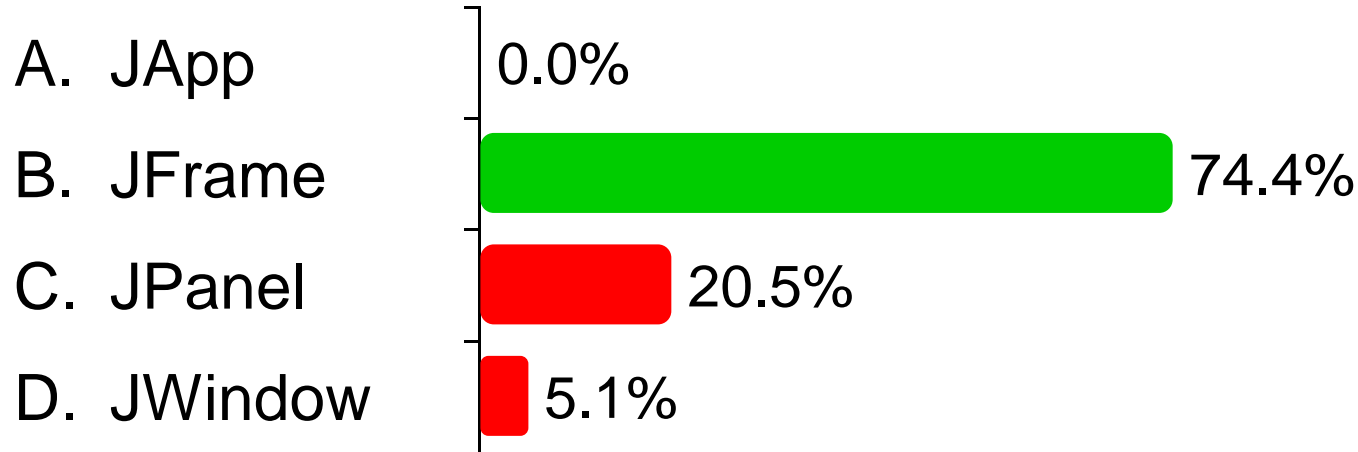


The question will open when you start your session and slideshow.

Votes: 39

● Closed

What type of object do you need to create a window (border and title bar) for an application?



● Closed

If you want to display the value of *length*, what code should be at the dots?

- A. ""+length
- B. length.toString()
- C. length
- D. Integer.parseInt(length)

```
int length=180;  
g.drawString( ... , 100, 100 );
```

The question will open when you start your session and slideshow.

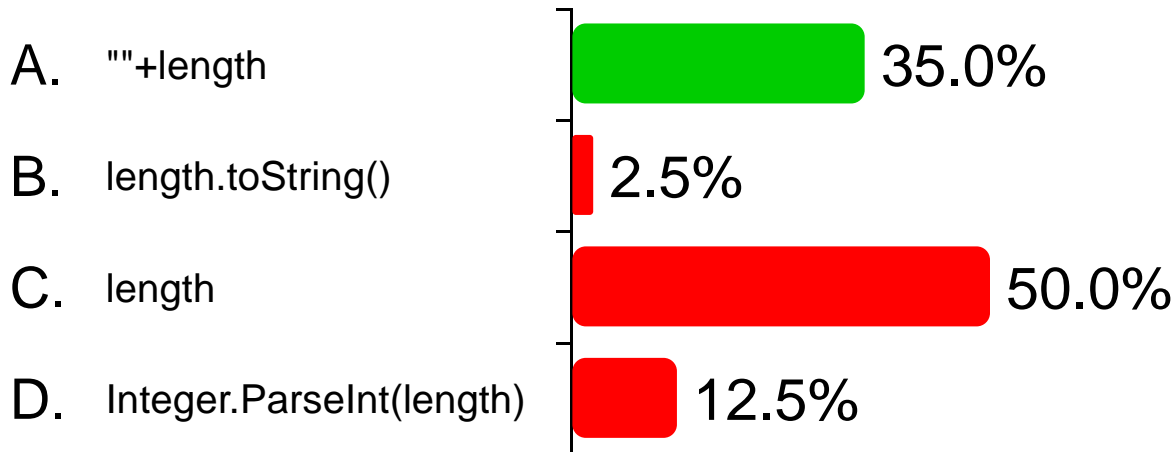
Votes: 40

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If you want to display the value of *length*, what code should be at the dots?



```
int length=180;  
g.drawString( ... , 100, 100 );
```

 Closed

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What are the values of *a* and *b* after this code?

- A. `a==1.5 b==6`
- B. `a==1.5 b==5`
- C. `a==1 b==6`
- D. `a==1 b==5`

```
int a=3, b=2;  
a++;  
b = b+a;  
a = b/a;
```

The question will open when you start your session and slideshow.

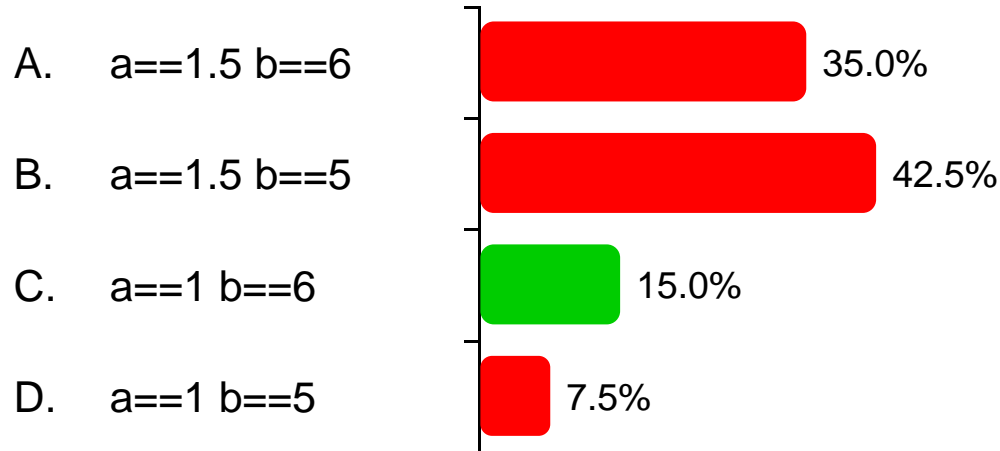
Votes: 40

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```
int a=3, b=2;  
a++;  
b = b+a;  
a = b/a;
```

What are the values of a and b after this code?



● Closed

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What method-call can you use to convert the string "10.95" to a double?

- A. Double.parseDouble()
- B. String.format()
- C. Integer.parseInt()
- D. String.parseDouble()

The question will open when you start your session and slideshow.

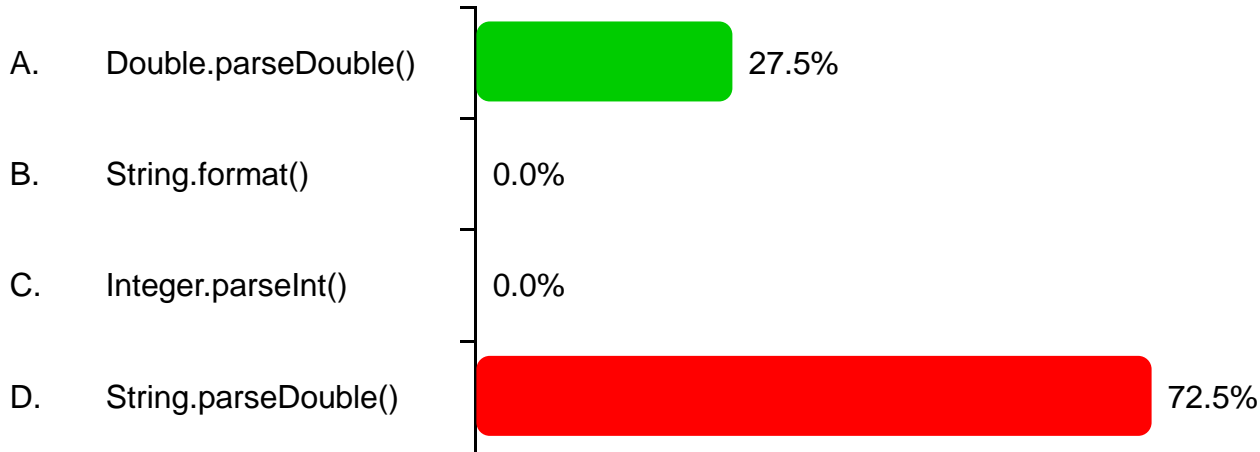
Votes: 40

 Closed

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What method-call can you use to convert the string "10.95" to a double?



● Closed

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It can be useful for a class to have a method `toString()`. What should the full header of this method look like?

- A. `void toString()`
- B. `public void toString()`
- C. `String toString()`
- D. `public String toString()`

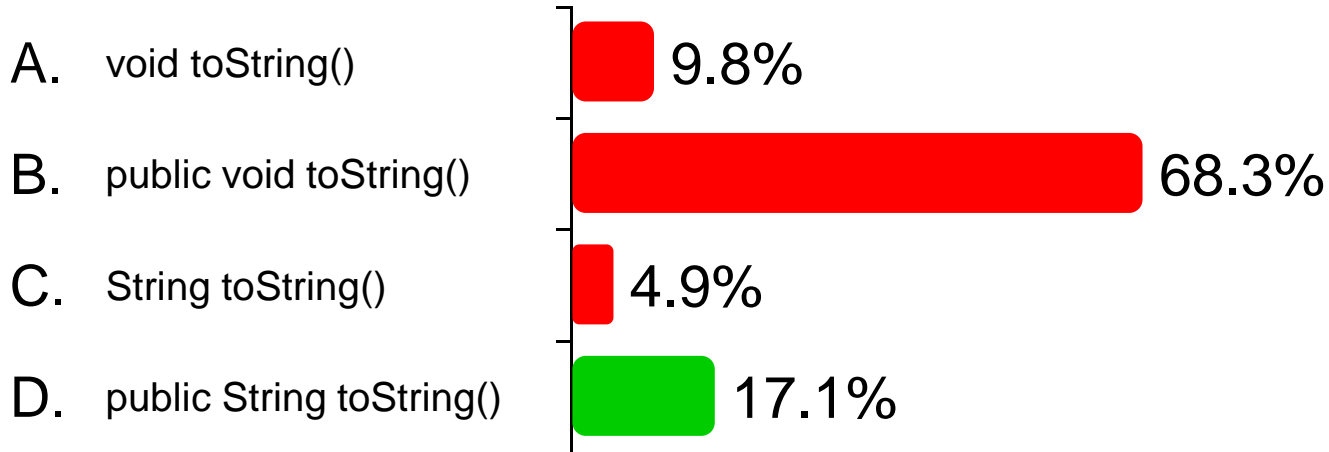
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Votes: 41

 Closed

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It can be useful for a class to have a method `toString()`. What should the full header of this method look like?



 Closed

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Write code for a class Book with properties title and number of pages as class-variables.

- A. `public class Book { String title; int pages; }`
- B. `public Book { class } title:String, pages:int`
- C. `class Book { title(); pages(); }`

A

```
public class Book {  
    String title;  
    int pages;  
}
```

B

```
public Book { class }  
    title:String,  
    pages:int
```

C

```
class Book {  
    title();  
    pages();  
}
```

The question will open when you start your session and slideshow.

Votes: 40

 Closed

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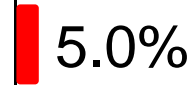
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Write code for a class Book with properties title and number of pages as class-variables.

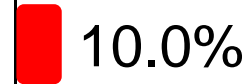
A. `public class Book { String title; int pages; }`



B. `public Book { class } title:String, pages:int`




C. `class Book { title(); pages(); }`



A
`public class Book {
String title;
int pages;
}`

B
`public Book { class }
title:String,
pages:int`

C
`class Book {
title();
pages();
}`

 Closed

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Which method for the class Book can be used to set the title with a given value? The value is a parameter of the method.

- A. `String setTitle() { title = value; }`
- B. `setTitle(String value) { title = "value"; }`
- C. `public void setTitle(String s) { title = s; }`
- D. `public String setTitle() { title = "value"; }`

The question will open when you start your session and slideshow.

Votes: 40

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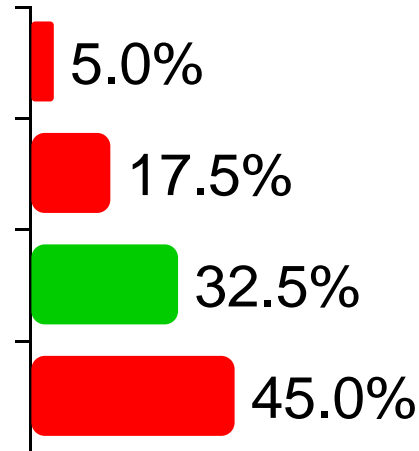
Which method for the class `Book` can be used to set the title with a given value? The value is a parameter of the method.

A. `String setTitle() { title = value; }`

B. `setTitle(String value) { title = "value"; }`

C. `public void setTitle(String s) { title = s; }`

D. `public String setTitle() { title = "value"; }`



 Closed

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Given Java code is part of a class. What is a correct header for a loop that shows the titles of all books? The code should be at the spot indicated with `//...`

- A. `while (t<10)`
- B. `for (int t=0; t<books.size(); t++)`
- C. `for (t=0; t<ArrayList.size(); t++)`
- D. `while (int t=0; books.size(); t++)`

```
ArrayList<Book> books;  
  
public void showTitles() {  
    // Display titles of all books  
    //...  
    {  
        Book b = books.get(t);  
        System.out.println(b.getTitle());  
    }  
}
```

start your session and slideshow.

Votes: 40

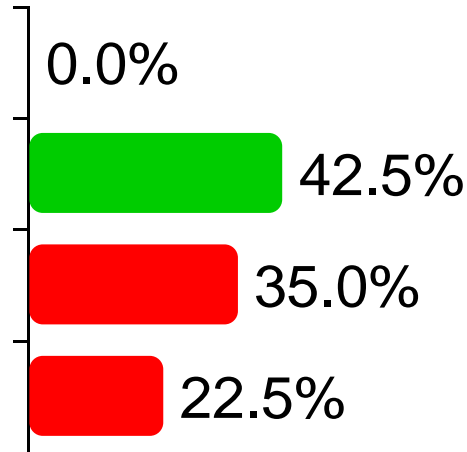
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- A. `while (t<10)`
- B. `for (int t=0; t<books.size(); t++)`
- C. `for (t=0; t<ArrayList.size(); t++)`
- D. `while (int t=0; books.size(); t++)`



```
ArrayList<Book> books;  
  
public void showTitles() {  
    // Display titles of all books  
    //...
```

 Closed

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What is the value of a and b after running this code?

- A. a == 2 and b == 2
- B. a == 2 and b == 3
- C. a == 3 and b == 2
- D. a == 3 and b == 3

```
int a = 2, b = 3;
if( a < b ) {
    int t = a;
    a = b;
    b = t;
}
```

The question will open when you start your session and slideshow.

Votes: 39

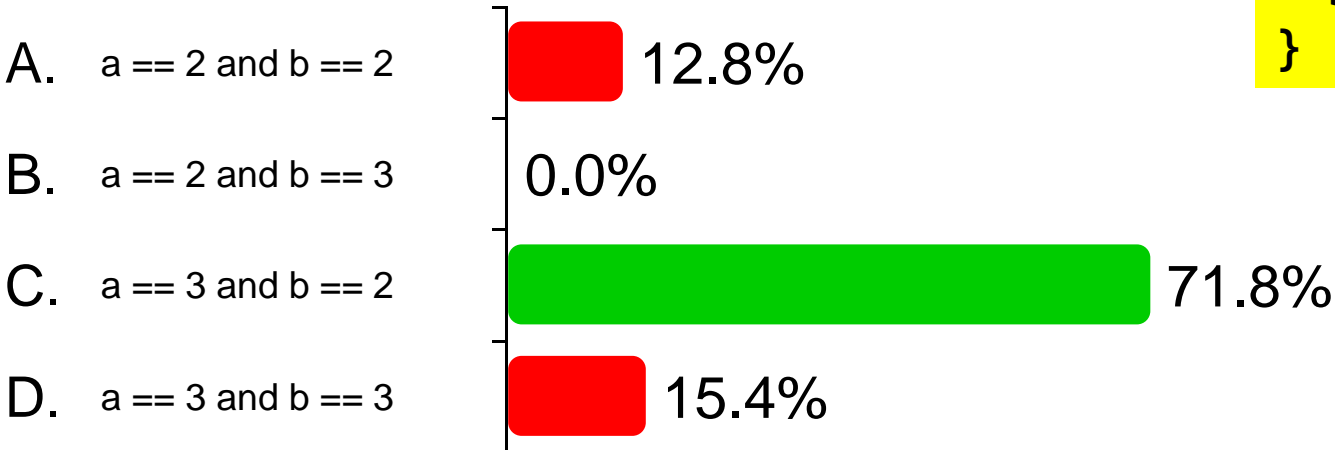
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```
int a = 2, b = 3;
if( a < b ) {
    int t = a;
    a = b;
    b = t;
}
```

What is the value of a and b after running this code?



 Closed

ASSIGNMENT #7

- “Create sound memory game”
- **Next week:** no lecture but assistance with assignment available in the morning
- Details about exam, hand-in of Lego kit etc. are in [schedule](#).



Check assignments results:

Assignments

- Assignment1
- Assignment2
- Assignment3
- Assignment4b

[Check your results](#)

