

Chapter 4; Core APIs

Wednesday, November 13, 2024 1:39 PM

Arreglos bidimensionales; En array bidimensionales o mas, solo se inicia en el primero.

```
String anotherFish = numFish + 1 + "";
```

Hace la suma y después se vuelve String;

```
String anotherFish = "" + numFish + 1;
```

En este ejemplo concatena todos los números;

The answers to the chapter review questions can be found in the Appendix.

1. What is output by the following code? (Choose all that apply.)

```
1: public class Fish {  
2:     public static void main(String[] args) {  
3:         int numFish = 4;  
4:         String fishType = "tuna";  
5:         String anotherFish = numFish + 1;  
6:         System.out.println(anotherFish + " " + fishType);  
7:         System.out.println(numFish + " " + 1);  
8:     } }
```

- A. 4 1
- B. 5
- C. 5 tuna
- D. 5tuna
- E. 51tuna
- F. The code does not compile.

En este caso no compila porque no se puede poner un int a string;

//

Para arreglos bidimensionales hay que inicializar al menos el primero;

```
int[][] scores = new int[5][];  
  
scores[0][0] = 1;  
scores[0][1] = 2;  
  
scores[1][0] = 3;  
scores[1][1] = 4;  
  
//int[][][] scores1 = new int[9][][];  
  
System.out.println(scores);
```

NullPointerException; En memoria solo se ha definido que vamos a tener 5 filas. Es un objeto de objetos no se ha inicializado el segundo objeto, no ha sido creado.

2. Which of these array declarations are not legal? (Choose all that apply.)

- A. int[][] scores = new int[5][];
- B. Object[][][] cubbies = new Object[3][0][5];
- C. String beans[] = new beans[6];
- D. java.util.Date[] dates[] = new java.util.Date[2][];
- E. int[][] types = new int[]{};
- F. int[][] java = new int[][]{};

//

3. Note that March 13, 2022 is the weekend when we spring forward, and November 6, 2022 is when we fall back for daylight saving time. Which of the following can fill in the blank without the code throwing an exception? (Choose all that apply.)

```
var zone = ZoneId.of("US/Eastern");
var date = _____;
var time = LocalTime.of(2, 15);
var z = ZonedDateTime.of(date, time, zone);
```

- A. LocalDate.of(2022, 3, 13)
- B. LocalDate.of(2022, 3, 40)
- C. LocalDate.of(2022, 11, 6)
- D. LocalDate.of(2022, 11, 7)
- E. LocalDate.of(2023, 2, 29)
- F. LocalDate.of(2022, MonthEnum.MARCH, 13);

Año / mes / día

Existe un Enum pero su nombre es Month, hay que importarlo.

//

4. Which of the following are output by this code? (Choose all that apply.)

```
3: var s = "Hello";
4: var t = new String(s);
5: if ("Hello".equals(s)) System.out.println("one");
6: if (t == s) System.out.println("two");
7: if (t.intern() == s) System.out.println("three");
8: if ("Hello" == s) System.out.println("four");
9: if ("Hello".intern() == t) System.out.println("five");
```

- A. one
- B. two
- C. three
- D. four
- E. five
- F. The code does not compile.
- G. None of the above

No imprime "three" ni "five" porque no esta en el mismo pool de string

//

5. What is the result of the following code?

```
7: var sb = new StringBuilder();
8: sb.append("aaa").insert(1, "bb").insert(4, "ccc");
9: System.out.println(sb);
```

- A. abbaaccc
- B. abbaccca
- C. bbaaaccc
- D. bbaaccca
- E. An empty line
- F. The code does not compile.

Cuando el string es mutable no es necesario poner la variable de referencia

Haciendo los insert, se ingresa al sb y se van recorriendo.

//

6. How many of these lines contain a compiler error? (Choose all that apply.)

```
23: double one = Math.pow(1, 2);
24: int two = Math.round(1.0);
25: float three = Math.random();
26: var doubles = new double[] {one, two, three};
```

- A. 0
- B. 1
- C. 2
- D. 3
- E. 4

Math.rouud(1.0); – Regresa un Long

Math.random() – Regresa un double

//

7. Which of these statements is true of the two values? (Choose all that apply.)

2022-08-28T05:00 GMT-04:00

2022-08-28T09:00 GMT-06:00

- A. The first date/time is earlier.
- B. The second date/time is earlier.
- C. Both date/times are the same.
- D. The date/times are two hours apart.
- E. The date/times are six hours apart.
- F. The date/times are 10 hours apart.

Cuando el horario tenga signo de " - ", hay que sumar para sacar el horario standar, si tiene un signo de " + " restar.

//

8. Which of the following return 5 when run independently? (Choose all that apply.)

```
var string = "12345";  
var builder = new StringBuilder("12345");
```

- A. builder.charAt(4)
- B. builder.replace(2, 4, "6").charAt(3)
- C. builder.replace(2, 5, "6").charAt(2)
- D. string.charAt(5)
- E. string.length
- F. string.replace("123", "1").charAt(2)
- G. None of the above

.replace (); – reemplaza los valores y recorre

//

9. Which of the following are true about arrays? (Choose all that apply.)

- A. The first element is index 0.
- B. The first element is index 1.
- C. Arrays are fixed size.
- D. Arrays are immutable.
- E. Calling equals() on two different arrays containing the same primitive values always returns true.
- F. Calling equals() on two different arrays containing the same primitive values always returns false.
- G. Calling equals() on two different arrays containing the same primitive values can return true or false.

El indice siempre se comienza en cero.

Se pueden cambiar los objetos mas no el tamaño del array.

//

10. How many of these lines contain a compiler error? (Choose all that apply.)

```
23: int one = Math.min(5, 3);
24: long two = Math.round(5.5);
25: double three = Math.floor(6.6);
26: var doubles = new double[] {one, two, three};
```

- A. 0
- B. 1
- C. 2
- D. 3
- E. 4

.ceil() – Redondea hacia arriba.

.floor() – Redondea hacia abajo.

//

11. What is the output of the following code?

```
var date = LocalDate.of(2022, 4, 3);
date.plusDays(2);
date.plusHours(3);
System.out.println(date.getYear() + " " + date.getMonth()
    + " " + date.getDayOfMonth());
```

- A. 2022 MARCH 4
- B. 2022 MARCH 6
- C. 2022 APRIL 3
- D. 2022 APRIL 5
- E. The code does not compile.
- F. A runtime exception is thrown.

No se pueden incrementar horas porque no fueron definidas, solo se definió el date.
LocalDate es inmutable.

//

12. What is output by the following code? (Choose all that apply.)

```
var numbers = "012345678".indent(1);
numbers = numbers.stripLeading();
System.out.println(numbers.substring(1, 3));
System.out.println(numbers.substring(7, 7));
System.out.print(numbers.substring(7));
```

- A.** 12
- B.** 123
- C.** 7
- D.** 78
- E.** A blank line
- F.** The code does not compile.
- G.** An exception is thrown.

.indent(); – genera un espacio blanco al inicio.

.stripLeading(); – Quita espacio del inicio.

//

13. What is the result of the following code?

```
public class Lion {  
    public void roar(String roar1, StringBuilder roar2) {  
        roar1.concat("!!!!");  
        roar2.append("!!!!");  
    }  
    public static void main(String[] args) {  
        var roar1 = "roar";  
        var roar2 = new StringBuilder("roar");  
        new Lion().roar(roar1, roar2);  
        System.out.println(roar1 + " " + roar2);  
    } }
```

- A. roar roar
- B. roar roar!!!
- C. roar!!! roar
- D. roar!!! roar!!!
- E. An exception is thrown.
- F. The code does not compile.

String es inmutable por eso no se concatena "!!!!";

//

14. Given the following, which can correctly fill in the blank? (Choose all that apply.)

```
var date = LocalDate.now();  
var time = LocalTime.now();  
var dateTime = LocalDateTime.now();  
var zoneId = ZoneId.systemDefault();  
var zonedDateTime = ZonedDateTime.of(dateTime, zoneId);  
Instant instant = _____;
```

- A. Instant.now()
- B. new Instant()
- C. date.toInstant()
- D. dateTime.toInstant()
- E. time.toInstant()
- F. zonedDateTime.toInstant()

Instant.now() – Sirve para medir los tiempos de un proceso

Los 'new' no se pueden usar en los enum;

Para saber los demás elementos requerimos de la zona horaria

//

15. What is the output of the following? (Choose all that apply.)

```
var arr = new String[] { "PIG", "pig", "123"};
Arrays.sort(arr);
System.out.println(Arrays.toString(arr));
System.out.println(Arrays.binarySearch(arr, "Pippa"));
```

- A. [pig, PIG, 123]
- B. [PIG, pig, 123]
- C. [123, PIG, pig][123, PIG, pig]
- D. [123, pig, PIG]
- E. -3-3
- F. -2
- G. The results of `binarySearch()` are undefined in this example.

De acuerdo al orden primero serian los numeros, mayusculas y minusculas

Para que funcione el BinarySearch el arreglo debe estar ordenado;

//

16. What is included in the output of the following code? (Choose all that apply.)

```
var base = "ewe\nsheep\\t";
int length = base.length();
int indent = base.indent(2).length();
int translate = base.translateEscapes().length();

var formatted = "%s %s %s".formatted(length, indent, translate);
System.out.format(formatted);
```

- A. 1010
- B. 1111
- C. 12
- D. 13
- E. 14
- F. 15
- G. 1616

`.translateEscape();` – Elimina el escape (tabulador);

Al hacer un salto de linea, se agregan dos espacios en cada linea por lo que incrementa en cada linea, asi que seria una longuitud de 16;

//

17. Which of these statements are true? (Choose all that apply.)

```
var letters = new StringBuilder("abcdefg");
```

- A. letters.substring(1, 2) returns a single-character String.
- B. letters.substring(2, 2) returns a single-character String.
- C. letters.substring(6, 5) returns a single-character String.
- D. letters.substring(6, 6) returns a single-character String.
- E. letters.substring(1, 2) throws an exception.
- F. letters.substring(2, 2) throws an exception.
- G. letters.substring(6, 5) throws an exception.
- H. letters.substring(6, 6) throws an exception.

Regresa solo un carácter

Cuando pones el mismo parámetro, no regresa nada.

//

18. What is the result of the following code? (Choose all that apply.)

```
13: String s1 = "##"
```

```
14:     purr""";
```

```

15: String s2 = "";
16:
17: s1.toUpperCase();
18: s1.trim();
19: s1.substring(1, 3);
20: s1 += "two";
21:
22: s2 += 2;
23: s2 += 'c';
24: s2 += false;
25:
26: if ( s2 == "2cfalse") System.out.println("==");
27: if ( s2.equals("2cfalse")) System.out.println("equals");
28: System.out.println(s1.length());

```

- A. 2
- B. 4
- C. 7
- D. 10
- E. ==
- F. equals
- G. An exception is thrown.
- H. The code does not compile.

Solo se concatena "two" es la unica linea que se asigna por lo que el length es 7;

Al no estar en el mismo pool de Strings no imprime " == "

//

19. Which of the following fill in the blank to print a positive integer? (Choose all that apply.)

```

String[] s1 = { "Camel", "Peacock", "Llama"};
String[] s2 = { "Camel", "Llama", "Peacock"};
String[] s3 = { "Camel"};
String[] s4 = { "Camel", null};
System.out.println(Arrays._____);

```

- A. compare(s1, s2)
- B. mismatch(s1, s2)
- C. compare(s3, s4)
- D. mismatch (s3, s4)
- E. compare(s4, s4)
- F. mismatch (s4, s4)

.compare () ; -

Regresa un numero negativo si el primer numero es mas pequeño que el segundo.

Regresa un cero si el array es igual

Regresa un numero positivo si el primer numero es mayor que el segundo.

.mismatch(); -

Si los array son iguales devuelve -1.

Si los arreglos son diferentes, te devuelve el número de la posición (índice) donde los elementos comienzan a diferir.

//

20. Note that March 13, 2022 is the weekend that clocks spring ahead for daylight saving time.

What is the output of the following? (Choose all that apply.)

```
var date = LocalDate.of(2022, Month.MARCH, 13);
var time = LocalTime.of(1, 30);
var zone = ZoneId.of("US/Eastern");
var dateTime1 = ZonedDateTime.of(date, time, zone);
var dateTime2 = dateTime1.plus(1, ChronoUnit.HOURS);

long diff = ChronoUnit.HOURS.between(dateTime1, dateTime2);
int hour = dateTime2.getHour();
boolean offset = dateTime1.getOffset()
    == dateTime2.getOffset();
System.out.println("diff = " + diff);
System.out.println("hour = " + hour);
System.out.println("offset = " + offset);
```

- A. diff = 1
- B. diff = 2
- C. hour = 2
- D. hour = 3
- E. offset = true
- F. The code does not compile.
- G. A runtime exception is thrown.

//

21. Which of the following can fill in the blank to print avaJ? (Choose all that apply.)

```
3: var puzzle = new StringBuilder("Java");
4: puzzle._____;
5: System.out.println(puzzle);
```

- A. reverse()
- B. append("vaJ\$").substring(0, 4)
- C. append("vaJ\$").delete(0, 3).deleteCharAt(puzzle.length() - 1)
- D. append("vaJ\$").delete(0, 3).deleteCharAt(puzzle.length())
- E. None of the above

.substring() – si un Sb tiene este metodo se convierte en String;

//

22. What is the output of the following code?

```
var date = LocalDate.of(2022, Month.APRIL, 30);
date.plusDays(2);
date.plusYears(3);
System.out.println(date.getYear() + " " + date.getMonth()
+ " " + date.getDayOfMonth());
```

- A. 2022 APRIL 30
- B. 2022 MAY 2
- C. 2025 APRIL 2
- D. 2025 APRIL 30
- E. 2025 MAY 2
- F. The code does not compile.
- G. A runtime exception is thrown.

En la data API, no se pueden crear datos ni instancias "new" y son inmutables, como los strings.