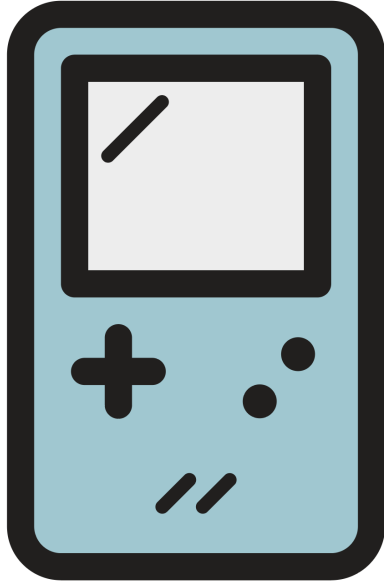


Hex game

app design



Scenario

A computer game generates a random integer in the range 0 to 255. It converts the number to hexadecimal by using this technique in Java eg the following code will store “a” in the variable hex:

```
String hex = Integer.toHexString(10);
```

It then displays the random integer to the user and asks the user to enter the equivalent hexadecimal character(s).

This process is repeated 20 times and the user gets a point each time (s)he is correct.

Activity requirements

Decompose this problem into a series of functions called by a computer program. Your solution may make use of global variables.

Assessment

Your app design will be assessed against the above requirements.

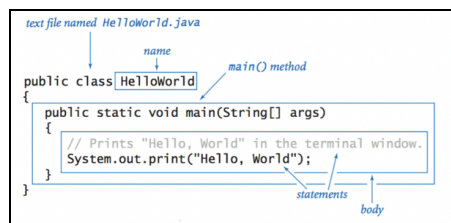
This is an opportunity for creativity, pairwork and problem-solving. Use your skills!

Test Table

When testing your solution, make sure you can see all of the data being processed by your program eg:

Random number	Hex value	User input	Score
10	"a"	"b"	0
16	"10"	"10"	1
32	"20"	"21"	1
33	"21"	"21"	2

JAVA CHEAT SHEET



type	set of values	common operators	sample literal values
int	integers	+ - * / %	99 12 2147483647
double	floating-point numbers	+ - * /	3.14 2.5 6.022e23
boolean	boolean values	&& !	true false
char	characters		'A' '1' '%' '\n'
String	sequences of characters	+	"AB" "Hello" "2.5"

Printing.

```
void System.out.print(String s)    print s
void System.out.println(String s)  print s, followed by a newline
void System.out.println()          print a newline
```

Nested if-else statement.

```
if (income < 0) rate = 0.00;
else if (income < 8925) rate = 0.10;
else if (income < 36250) rate = 0.15;
else if (income < 87850) rate = 0.23;
else if (income < 183250) rate = 0.28;
else if (income < 398350) rate = 0.33;
else if (income < 400000) rate = 0.35;
else rate = 0.396;
```

```
Scanner scan = new Scanner(System.in);

Double num1 = scan.nextDouble();

Int num2 = scan.nextInt();

String word = scan.nextLine();
```

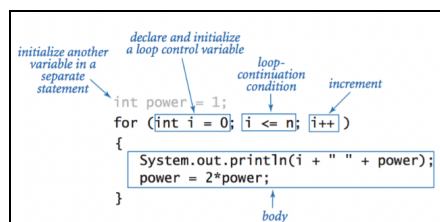
Comparison operators.

op	meaning	true	false
==	equal	2 == 2	2 == 3
!=	not equal	3 != 2	2 != 2
<	less than	2 < 13	2 < 2
<=	less than or equal	2 <= 2	3 <= 2
>	greater than	13 > 2	2 > 13
>=	greater than or equal	3 >= 2	2 >= 3

```
int rand = (int) (Math.random()*100);
```

Booleans.

values	true or false
literals	true false
operations	and or not
operators	&& !



```
public class Main{
```

```
public static void main(){
```

```
}
```

```
//other methods
```

```
//end of class
```

