In lecture we went over both the switch statement and the conditional operator

(the ternary operator ?:)

We'd like you to review these two items today.

Feel free to use any examples you like, but here are a few to give you

some ideas:

I. Switch statement:

1. Write a method that takes a char parameter and returns an int.

(We assume the input is a capital letter, 'A', 'B', 'C', etc.)

The return value will be the number of "pen strokes" it would take

to draw the letter. Opinions may vary on how many pen strokes each

letter requires, but clearly, the letter 'O' takes just one. I would

argue that the letter 'F' would normally be 3, 'X' would be 2, etc.

If the input is anything other than one of the 26 letters of the

alphabet, return -1. Be sure to use a switch statement for this,

making use of the "drop through". My solution is:

int penStrokes(char c) {

int retValue;

switch(c) {

case 'C':

case 'O':

case 'S':

case 'U':

retValue = 1;

break;

case 'D':

case 'G':

case 'J':

case 'L':

case 'P':

case 'Q':

case 'T':

case 'V':

case 'X':

retValue = 2;

break;

case 'A':

case 'B':

case 'F':

case 'H':

case 'I':

case 'K':

case 'N':

case 'R':

case 'Y':

case 'Z':

retValue = 3;

break;

case 'E':

case 'M':

case 'W':

retValue = 4;

break;

default:

retValue = -1;

}

return retValue;

}

2. Write a method that takes two int parameters, a month (1 through 12),

and a year. The return value will be the number of days in

the month. Here is my solution, taking leap-year into account

correctly!!

int numDays = 0;

switch (month) {

case 1:

case 3:

case 5:

case 7:

case 8:

case 10:

case 12:

numDays = 31;

break;

case 4:

case 6:

case 9:

case 11:

numDays = 30;

break;

case 2:

if ( ((year % 4 == 0) && !(year % 100 == 0))

|| (year % 400 == 0) )

numDays = 29;

else

numDays = 28;

break;

default:

System.out.println("Invalid month.");

break;

}

return numDays;

II. ?: operator

1. Assuming that the variable x is the number of cookies we have

in the jar, we want to print either:

"There is 1 cookie in the jar" OR

"There are n cookies in the jar".

My solution:

String out = "There " + (x > 1 ? " are " + x + " cookies" : "is 1 cookie");

System.out.println(out + " in the jar".);

2. Given two integer parameters, print the min, max, and abolute value of the difference.

My solution:

System.out.println("min is: " (x < y? x : y));

System.out.println("max is: " (x > y? x : y));

System.out.println("absolute diff is: " (x > y ? x - y : y - x));

III. Here is a good challenge problem for the students to try. I suggest projecting

this onto the screen and then having them try to work it out on paper.

Consider the following code fragment. Assume that the variables a and p are type int.

if (a > 0) {

p = 6;

} else {

p = 2;

}

if (a > 5) {

p = 2;

} else if (a == 2)

p = 1;

}

Fill in the switch statement below so that it is equivalent to the code

fragment above. You may not write any statements before or after the switch

statement. Your switch statement should not have any unnecessary redundancy.

You may not have any if/else statements or uses of the ternary ?: operator

in your switch statement.

switch(a) {

...

}

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If time remains, ask students what topics they would find helpful for you

to review.