ESET 269 Summer 2020 – Lab 2: If-Else, Loops, Arrays

If using the Launchpad, use the Lab Template project. This lab can also be done using another IDE.

Code 1: Prompt a user to enter two values, a systolic blood (SBP) pressure value, and a diastolic blood pressure (DBP) value. Based on the values entered, display the condition according to the table below.

BLOOD PRESSURE CATEGORY	SYSTOLIC mm Hg (upper number)		DIASTOLIC mm Hg (lower number)
NORMAL	LESS THAN 120	and	LESS THAN 80
ELEVATED	120 – 129	and	LESS THAN 80
HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 1	130 – 139	or	80 – 89
HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 2	140 OR HIGHER	or	90 OR HIGHER

Then prompt the user what calculation they would like to do, pulse pressure (PP), or mean arterial pressure (MAP). Calculate PP and MAP according to the formulas below.

- Pulse Pressure (PP) $PP = SBP - DBP$
- Mean Arterial Blood Pressure (MAP) $MAP = \frac{2(DBP+SBP)}{3}$

After the calculations, prompt the user if they would like to enter another blood pressure value. If the user selects not to, then display a message to the user that the program is done running. If they select to enter another value, repeat the above process. Example console window output is shown below.

Note: SBP and DBP must be integer data types.

```
Enter a SBP value:115
Enter a DBP value:73
Blood pressure nomral.
What calculation would you like to do
1.PP
2.MAP
1
Pulse pressure is 42
Would you like to enter another SBP & DBP value? y for yes, n for no
y
Enter a SBP value:127
Enter a DBP value:73
Blood pressure is elevated.
What calculation would you like to do
1.PP
2.MAP
2
MAP is 133.33
Would you like to enter another SBP & DBP value? y for yes, n for no
y
Enter a SBP value:147
Enter a DBP value:70
Blood pressure hypertension stage 2
What calculation would you like to do
1.PP
2.MAP
1
Pulse pressure is 77
Would you like to enter another SBP & DBP value? y for yes, n for no
n
Program done!
```

Code 2: Prompt a user to enter in 3 grades as numeric values for three different sections, section 101, 102, and 103. Using the information that the user enters, calculate the following:

- The average of each section
- The class average
- The number of passing grades and failing grades for the class. A passing grade is 70 or above.

Display all the results to the console window. Example console window display is shown below.

```
Enter grades for section 101
65
98
71
Enter grades for section 102
100
56
73
Enter grades for section 103
68
54
90
Section 101 average 78.00
Section 102 average 76.33
Section 103 average 70.67
Class average 75.00
The passing grade total is 5. The failing grade total is 4.
```

Note: All section grades must be implemented with an array or arrays. You cannot scanf into 9 independent grade variables.