

CS 218

Homework, MIPS Asst. #1

Purpose: Become familiar with RISC Architecture concepts, the MIPS Architecture, and QtSpim (the MIPS simulator).

Due: Tuesday (4/16)

Points: 30

Assignment:



Write a MIPS assembly language program to find the perimeter of a pentagon. After the perimeters are computed, find the following;

- maximum, minimum, and average for the perimeters.
- maximum, minimum, and average for the even values in the perimeters.
- maximum, minimum, and average for the values that are evenly divisible by 9 for the perimeters.

You may assume that the first number is *always* even and evenly divisible by 9.

You will need to download and install QtSpim the MIPS simulator before completing this assignment. Refer to the class web page for a link to the QtSpim software. Refer to the example output for formatting.

Use the below data set.

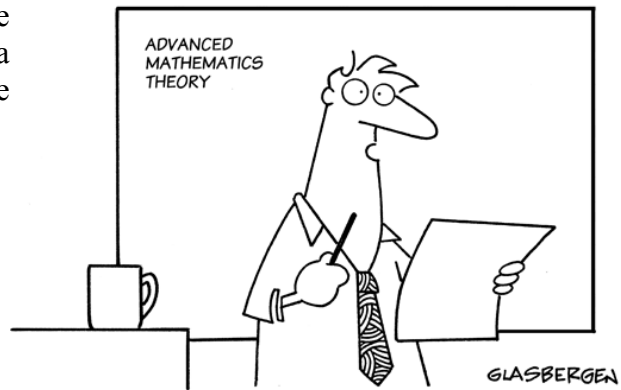
```
sides:  .word    252, 193, 982, 339, 564, 631, 421, 148, 936, 157
        .word    117, 171, 697, 161, 147, 137, 327, 151, 147, 354
        .word    432, 551, 176, 487, 490, 810, 111, 523, 532, 445
        .word    163, 745, 571, 529, 218, 219, 122, 934, 370, 121
        .word    315, 145, 313, 174, 118, 259, 672, 126, 230, 135
        .word    199, 105, 106, 107, 124, 625, 126, 229, 248, 991
        .word    132, 133, 936, 136, 338, 941, 843, 645, 447, 449
        .word    171, 271, 477, 228, 178, 184, 586, 186, 388, 188
        .word    950, 852, 754, 256, 658, 760, 161, 562, 263, 764
        .word    199, 213, 124, 366, 740, 356, 375, 387, 115, 426
len:     .word    100
```

You may declare additional variables as needed.

Submission:

When complete, submit:

- A copy of the **source file** via the class web page before class time.



"Today's test is 70% of your final grade which makes up 35% of your grade for the semester and 20% of your GPA for 50% of your scholastic career for 15% of the curriculum. If you can explain this to the person next you, you pass the test."

Example Output:

The output should appear as follows (with the appropriate results displayed):

```
MIPS Assignment #1
```

```
Program to find:
```

- * min, max, and average of a list of perimeters.
- * min, max, and average of the even perimeter values.
- * min, max, and average of the perimeter values divisible by 9.

```
List min =  
List max =  
List ave =
```

```
Even min =  
Even max =  
Even ave =
```

```
Divisible by 9 min =  
Divisible by 9 max =  
Divisible by 9 ave =
```