

Info 2207

MIPS Assembly

Lab 4

Dr. Houssein Alaeddine

Exercise 1

Write a MIPS program to compute $p(x)$:

$$p(x) = a_0 + a_1x + a_2x^2 + \dots + a_{n-1}x^{n-1} + a_nx^n$$

The input must be entered in the following order:

- The degree $n < 49$.
- Integer coefficients $a_0, a_1, \dots, a_{n-1}, a_n$
- Integer value x

Example:

```
Degree: 2
Coefficients: 1 1 3
X: 2
P(X) = 1 + 1*2 + 3*2*2 = 15
```

Execution example:

```
Enter the degree: 2
Enter coefficients: 1
1
3
Enter X: 2
Result: 15
-- program is finished running (dropped off bottom) --
```

Exercise 2

Write a MIPS program that asks user to enter an array of $N (>0)$ integers then determines the sum of sorted elements (in descending order) starting from the last one.

Example:

Enter N: 8

Enter values: 1 4 5 4 -1 2 3 9

Sum of sorted elements: 13