**Milestone 4: Test Programs**

**40% of Project Grade**

**Due: Tuesday, December 5**

We provide nine MIPS assembly programs to test your processor. You can use MARS to generate the binary instructions and data sections to initialize your data memory and instruction memory. You can download the test programs from the course project website.

The eight test programs include:

1. Zero out an array
2. Multiplication of two integers
3. Sort an integer array
4. Binary search
5. Check whether an integer array is a palindrome.
6. Check if the number is a prime
7. Greatest common divisors (GCD)
8. Evaluate a polynomial in the form of: # f(x) = a[0] + a[1]\*x + a[2]\*x^2 + a[3]\*x^3 +....+ a[n]\*x^n
9. Fibonacci number

**You need pass at least five test programs (8 points per program).**

**Bonus: For each extra test programs passed, you earn 5 points bonus.**

**Milestone 4 TA Checkoff Sheet**

**40% of Project Grade**

**Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Names: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**TA Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Grades: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Results of Test Programs with Default Inputs

|  |  |  |  |
| --- | --- | --- | --- |
|  | Programs | Comments | Score |
|  | Stack |  |  |
|  | Integer Multiplication |  |  |
|  | Bubble Sort |  |  |
|  | Binary Search |  |  |
|  | Palindrome |  |  |
|  | Prime Number |  |  |
|  | GCD |  |  |
|  | Polynomial |  |  |

TA will require you to modify the input parameters to random values made the TA. Re-initialize your instruction memory and data memory, compile your project and run the new test programs.

**Results of Test Programs with Modified Inputs Given by TA**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Programs | New Inputs | Results and Comments | Score |
|  | Stack |  |  |  |
|  | Integer Multiplication |  |  |  |
|  | Bubble Sort |  |  |  |
|  | Binary Search |  |  |  |
|  | Palindrome |  |  |  |
|  | Prime Number |  |  |  |
|  | GCD |  |  |  |
|  | Polynomial |  |  |  |