

# CS311 Assignment 4

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## Execution Statistics

Program	No. of instructions executed	No. of cycles taken	No. of cycles for which OF was stalled	No. of times instructions on wrong branch entered pipeline
descending.out	278	656	288	88
evenorodd.out	6	21	15	0
fibonacci.out	79	178	83	16
palindrome.out	49	168	112	7
prime.out	29	82	48	5

Table 1: Execution statistics for different programs

## **Analysis of Results**

### **descending.out**

This program has the highest number of instructions executed and cycles taken due to complex computation.

Many cycles (288) were stalled due to RAW data hazards between instructions.

The high number of wrong branch predictions (88) is due to frequent branching (looping).

### **evenorodd.out**

This program has the lowest execution count.

15 were cycles stalled, indicating that almost all operations were stalled data hazards.

No wrong branches were encountered, which is expected since branching occurs only once in case of even number.

### **fibonacci.out**

### **palindrome.out**

### **prime.out**

These programs encountered moderate number of RAW and branch hazards.