CSE222 Computer Architecture

Homework Set 7

Convert the following Java code segment to MIPS program. Each Java method will map to one MIPS function.

**public** **static** **void** main(String[] args) {

**int** [] arr = **new** **int**[20];

**for** (**int** i=0; i<arr.length; i++) {

// generate random number in [10, 100]

arr[i] = *generateRandomNumber*(10, 100);

}

**int** [] count = *countEvenOddNumbers*(arr, arr.length);

System.***out***.printf("there are %d even numbers and %d odd

numbers in array.", count[0], count[1]);

}

**public** **static** **int**[] countEvenOddNumbers(**int** [] array, **int** length) {

**int** [] count = **new** **int**[2];

**for** (**int** i = 0; i<length; i++) {

**if** (*isEvenNumber*(array[i])) {

count[0]++;

}

**else** {

count[1]++;

}

}

**return** count;

}

**public** **static** **int** generateRandomNumber(**int** low, **int** upp) {

Random rand = **new** Random();

**return** (low<=upp) ?

(rand.nextInt(upp-low+1)+low) : (rand.nextInt(low-upp+1)+upp);

}

**public** **static** **boolean** isEvenNumber(**int** num) {

**return** (num % 2 == 0);

}