Appendix A

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\* At Student union

\* 5:30 PM on Sep 11'14

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**public** **class** LinearSort {

**static** **int** *input*[] = {7,1,4,2,3};//size = n

**static** **int** *temp*[] = **new** **int**[10];//Range is kn (k=2, n=5)

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

//Place the value in its respective index e.g. place 6 n index 6

**for** (**int** i=0;i<5;i++){

*temp*[*input*[i]-1] = *input*[i];//- 1 to match the java style indexing which begins from zero

}//end for

//For verification. Not involved in the Time calculation

**for** (**int** i=0;i<10;i++){

System.*out*.print(*temp*[i]);

}//For ends

**int** num = 0;//to control the index of input array

**for** (**int** i=0;i<10;i++){

**if** (*temp*[i]!=0){

*input*[num]=*temp*[i];

num++;

}

}//For ends

//For verification. Not involved in the Time calculation

System.*out*.println();

**for** (**int** i=0;i<5;i++){

System.*out*.print(*input*[i]);

}//For ends

}//main ends

}//class ends

Appendix B

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\* Sept 09, 2014

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**public** **class** GuessBinary {

**static** **int** *secret* = 78;//Our secret code

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

*GUESSRANGE*(1,100);//if n=100

}

**static** **int** GUESSRANGE(**int** min, **int** max)

{

// calculate midpoint to cut the set in half

**int** guess = (min+max)/2;

// three-way comparison

**if** (*CHECK*(guess) == 1){

// guess is in lower subset (left side)

System.*out*.println("Inside Left Array:" + guess);//test the guesses

**return** *GUESSRANGE*(min, guess-1);

}

**else** **if** (*CHECK*(guess) == -1){

// guess is in upper subset (Right Side)

System.*out*.println("Inside Right Array:" + guess);//test the guesses

**return** *GUESSRANGE*(guess+1, max);

}

**else**{

// guess has been found

System.*out*.println("SUCCESS: " + guess);

**return** guess;

}

}

**static** **int** CHECK(**int** p){

**if** (p == *secret*) **return** 0;

**else** **if** (p < *secret*) **return** -1;

//else if (p > secret) return 1;

**else** **return** 1;

}

}