EET 247 – Programming for Electronic Devices NAME:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

EXAM #2

INSTRUCTIONS

* This is one half of a 60 minute test.
* The only thing allowed on the desk is one 8.5x11” cheat sheet.
* Closed book, Closed notes, Closed Computers (on the written part), Closed Calculators, Closed Friends, Closed friends’ notes, Closed Phones & all other electronic devices.
* Any form of academic dishonesty during the taking of this test, including not adhering to the instructions above will result in a grade of a ‘0’ for the exam.
* Where appropriate show all work. Please properly label all drawings. Each label should include both an address and description. All physical inputs are normally open unless otherwise noted.

QUESTIONS

1. Let func be the following function. What will be the value of y if in main the code y=func(10) is present AND has never been called before? What will be the value of func(10) if func has been called 4 times previously?

int func(int i) (4pts) func(10) = \_\_\_\_\_\_\_\_\_\_

{

static int j = 0; (4pts) func(10) 4x previously = \_\_\_\_\_\_\_\_\_

int k = 0;

return i\*(j+k);

}

1. (7pts) For the function below, determine what is printed to the screen.

#include <stdio.h>

#define MAXcNT 4

void main(void)

{

int arry[MAXcNT]={8};

int j = 0;

do{

arry[j] = j\*j - j;

j++;

}while(j<MAXcNT);//end of while

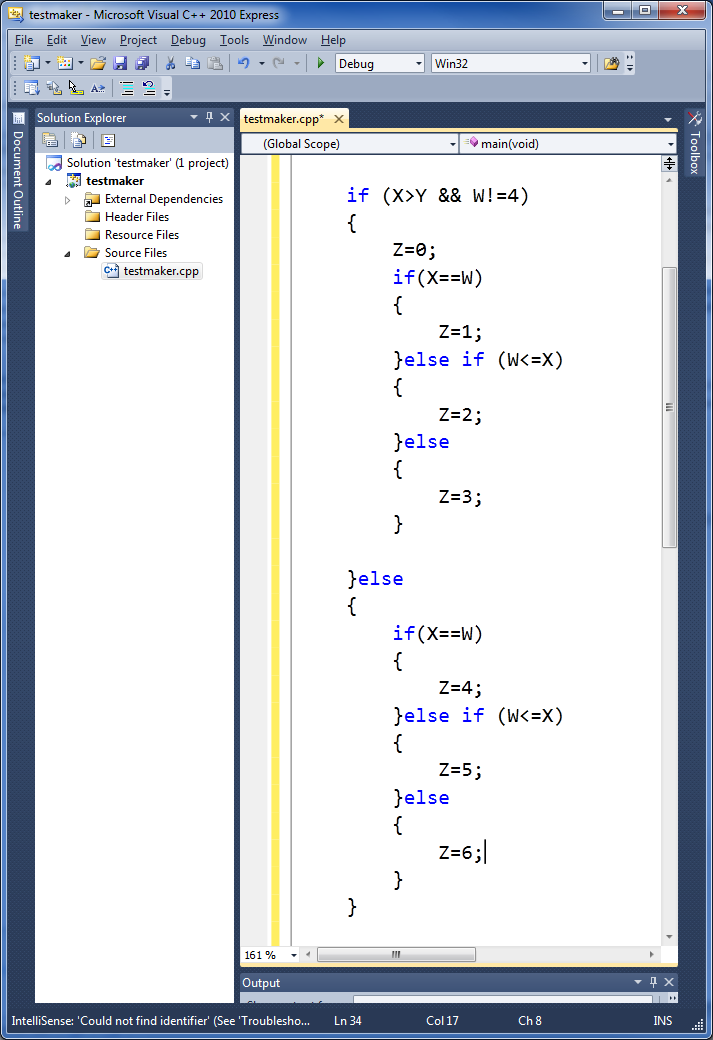
for(int i =0; i<MAXcNT; i++) printf("%d", arry[i]+1);

scanf("%d",&arry[0]);

}

**MESSAGE PRINTED TO SCREEN = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. (8pts) A function named ‘IntComp’ determines if two integer match. The function should receive the two integers in, and the function outputs 1) a character array of 20 characters which will say if the two match or not, 2) the larger of the two integers, and 3) the value of the difference between the two integers. The function should return a Boolean value (type = bool) which indicates if an error occurred. Write a **function prototype** for this function. Also make a list of all your variables and describe what each one is.
2. ( 5pts )Given that X = 7, Y = 5 and W = 4, what is the value of Z after the ‘if’ statement runs?

 **Z** = \_\_\_\_\_\_\_\_\_\_\_

1. (10pts) A set of records (up to 5000 total records) are to be stored in an array of structures. The record is to include a baseball player’s name, team association, batting average, base hits, homeruns, and if he is left handed or right handed (indicated by a ‘R’ or ‘L’). Write out a structure definition to accomplish this.
2. (10pts) When the program below initializes, the operating system allocates memory location 0x1AF99C for var1. The operating system allocates memory location 0xA2E870 for jVar. Write a one-line printf function that will print the value 0x1AF99C to the screen

#include <stdio.h>

void main(void)

{

int \*var1;

int jVar = 101;

var1 = &j;

your code here ->

scanf("%d",&j);

}

1. (10pts) In the program below, what is outputted to the screen?

#include <stdio.h>

#define MAX\_ROW 3

#define MAX\_COL 3

void main(void)

{

int i=0;

int j=0;

while( i < MAX\_ROW)

{

j = 0;

while (j<MAX\_COL)

{

printf("%3d ",i+j);

j++;

}

i++;

printf("\n");

}

getchar();

}

SCREEN PUT ANSWER IN BOX

1. (20pts) There are 10 errors in the program below. Identify and circle as many as you can.

/\* fibo.c -- It prints out the first N Fibonacci \* numbers. \*/

int main(void)

{

int n; /\* The number of fibonacci numbers we will print \*/

char i; /\* The index of fibonacci number to be printed next \*/

int current; /\* The value of the (i)th fibonacci number \*/

int next; /\* The value of the (i+1)th fibonacci number \*/

int twoaway; /\* The value of the (i+2)th fibonacci number \*/

/

print("How many Fibonacci numbers do you want to compute? ");

scanf("%d", n);

if (n<=0)

{

printf("The number should be positive.\n");

else

{

printf("\n\n\tI \t Fibonacci(I) \n\t=====================\n");

next = 1;

current = 1;

for (i==1; i<=n; i+)

{

printf("\t%d \t %lf\n", i, current);

twoaway = crrent+next;

current = next

next = twoaway;

}

}

} /\* The output from a run of this program was:

How many Fibonacci numbers do you want to compute? 9 I Fibonacci(I) ===================== 1 1 2 1 3 2 4 3 5 5 6 8 7 13 8 21 9 34 \*/

1. (4pts) In Program1 at the end of this exam, examine the statement

int GETTER(int x, int \*y){……}

What are the input(s) and what are the output(s) of this function?

INPUTS = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

OUTPUTS = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. (6pts) For “Program #1” at the back of this exam, list an example of:
   1. A Directive:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. An Instruction:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   3. A Reserved word:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. (6pts) For “Program #1” what series of user inputs will cause the program to print ‘14’ to the screen?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. (6pts) For “Program #1” is it an error that the function GETTER has two return statements? Why or why not?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **//PROGRAM #1**
2. #include<stdio.h>
3. #include<math.h>
4. int GETTER(int x, int \*y)
5. {
6. int z = 0;
7. printf("Enter the %d Number \n",x);
8. scanf(" %d", &z);
9. if (x < 5)
10. {
11. x = z+2;
12. \*y = x;
13. return(0);
14. }
15. else
16. {
17. x = z-2;
18. \*y = x;
19. return(1);
20. }
21. }
22. int main(void){
23. int var1=0, i = 0, ans = 0;
24. char alp=' ';
25. do
26. {
27. printf("Enter the Letter \n");
28. scanf(" %c", &alp);
29. if (alp == 'g')
30. {
31. i=0;
32. do
33. {
34. if(i>=1)
35. {
36. var1 = GETTER(i,&ans);
37. printf(" %3d \n", ans);
38. }
39. i++;
40. }while(var1!=1);
41. }
42. }while(alp != '@');
43. } //end main