

ECE 270 Test #2
June 24, 1998
Honor code in effect

(35) Write a C program called prog1.c that will find the smallest value of a set of numbers entered by the user using the function find_smallest written by you. The following code fragment is an example of how it is to be used and may be used in your code if you wish:

```
double smallest, array[50];
int num;
/* Code goes here to read in data entered by the user (numpts, pt1, pt2, etc )*/
average = find_smallest(num, array);
```

Here find_smallest finds the smallest of the num data points contained in array[]. Note that your program should consist of main and find_smallest. Note that main is to print the smallest value after calling the function.

2. (35) Write a function called digitconvert that will return the value of the digits in a character string. This function may not call any standard C functions such as atoi. Assume that the character strings will always contain exactly 3 digits and no other characters. Typical examples would be "203", "041" and "987". The function prototype for this function is:

```
int digitconvert(char string[]);
```

Demonstrate that your function works by calling it from a program called prog2.c that will read in a text string using scanf in main.

3. Briefly answer the following questions. Please save your answers as a comment at the end of prog2.c

- a. (5) Explain why function prototypes are useful.
- b. (5) Write a function prototype for the function find_smallest in problem 1.
- c. (5) How can a program be written so that function prototypes are not required but the benefits of function prototypes are retained?
- d. (5) Why should global variables be avoided?
- e. (5) What is meant by the scope of a variable? This can be answered in a very short simple sentence!
- f.. (5) When can a variable be declared in a C program?

Note: You may only use the floppy disk that has been provided for this test. Also, please call your first program prog1.c and your second program prog2.c. It would be a good idea to save backup copies of your programs using file names like prog1bu.c and prog2bu.c. Please return this sheet with your name on it when you return your tests and floppies. **Be sure to include your name as a comment in each program, put your name on your disk, and sign the honor code below.**

I have neither given nor received aid on this examination _____

Print your name: _____