Software and Embedded System Lab 2 (ELEE08022)

Data Type & Organisation in C language

1. All programs contain bugs, some more serious than others (the bugs, not the programs). Identify and correct three errors in the following program. (*hint: the first most serious error is that the program is poorly commented, perhaps because* the program as a whole *wasn't properly thought out before it was coded in the C language, hence producing the second most serious error*.)

```
/* Calculate the area of an ellipse in sq cm */
#include <stdio.h>
int main(void)
{
 float area, major_axis, minor_axis;
 area = 3.1416 * major_axis * minor_axis;
 minor_axis = 6.4;
 major_axis = 2.7;
 printf("Area of ellipse is %f sq. cm\n", area);
}
```

2. Write a C program to input eight integer numbers into an array named **`amps`**. After all the numbers have been input, display the numbers and calculate and display their average.

3. Write a program to read into an array named **`volts`**, the following values typed at the keyboard: **`10.95, 16.32, 12.15, 8.22, 15.98, 26.22, 13.54, 6.45, 17.59`**. After all the data have been read in, print out the values stored in the array in the following three row by three column form:

```
10.95    16.32    12.15
 8.22    15.98    26.22
13.54     6.45    17.59
```

4. Write a program to print the payment records of 5 employees. The record of each employee should be constructed in a structure with three members. They are a long integer storing employee's ID, a character array storing employee's name, and a float number storing hourly rate. The records of 5 employees should be initialised as:

{32479, "Abrams, B.", 6.72}
{33623, "Bohm, P.", 7.54}
{34145, "Donaldson, S.", 5.56}
{35987, "Ernst, T.", 5.43}
{36203, "Gwodz, K.", 8.72}