COMPUTER PROGRAMMING LAB (CS110)
ASSIGNMENTS–01

1. Write a program to print the message "Hello, world!", which needs to be followed by a newline character.

2. Try to declare variables of type int with the following variable names:

    i. my_first_variable

    ii. mySecondVariable

    iii. MyThirdVariable

    iv. char

    v. n

    vi. number

    vii. _

    viii. _number_

    ix. 2months

    x. months2

    xi. months_2

    xii. months 2

    xiii. months two

    xiv. months?

    Hint: Cases iv, ix, xii, xiii, and xiv do not work.

3. Decalre a variable of type int with the varible name n. Initialize n as 5. Print the value of n. Now, print the address of n (use &) using %p as the corresponding format specifier.
Hint:
```
int n = 5;
printf("The value of n is %d. ", n);
printf("The address of n is %p.", &n);
```

4. Print the address of the `main()` function and the `printf()` function.
   Hint:
   ```
   printf("The address of main() is %p.\n", main);
   printf("The address of main() is %p.\n", &main);
   printf("The address of printf() is %p.\n", printf);
   printf("The address of printf() is %p.\n", &printf);
   ```
   same *(handwritten)*

5. Declare variables as follows:
   ```
   char myChar = 'C';                          4
   unsigned char myUnsignedChar = 'C';
   signed char mySignedChar = 'C';       2    4
   int myInt = -1 * 'C';          4
   unsigned int myUnsignedInt = 0x5E;    4
   short myShort = -1 * 'C';
   unsigned short myUnsignedShort = 010;
   long myLong = -10000000;
   unsigned long myUnsignedLong = 10000000000;
                                      8
   float myFloat = 0.325;
   double myDouble = 1.5e-3;
   long double myLongDouble = 3.2e30;
   ```
   Use the `sizeof()` operator to print the size of each of the variables using the operator both on the variables and on the datatypes. Try to print each of these variables with the following format specifiers: "%c", "%d", "%f", "%g", "%e", "%lf", "%o", "%x" and "%s".
   Hint:
   ```
   int x = 2;
   printf("%ld %ld %ld\n", sizeof(x), sizeof(int), sizeof(typeof(x)));
   ```

6. Consider five variables initialized as follows:
   ```
   int a = 7, int b = 5, c = 0, d = 5, result = 0;
   ```
   Print the value of `result` after printing each of the following statements:

   i. `result = a + b;`
   ii. `result = a - b;`
   iii. `result = a / b;`
   iv. `result = a * b;`
   v. `result = a % b;`
   vi. `result = a + b;`
   vii. `result++;`
   viii. `result--;`

```
  ix. ++result;
   x. --result;
  xi. result = (a == b);
 xii. result = (a != b);
xiii. result = (a < b);
 xiv. result = (a <= b);
  xv. result = (d > b);
 xvi. result = (d >= b);
xvii. result = (c && d);
xviii. result = (c || d);
 xix. result = (a & b);
  xx. result = (a && b);
 xxi. result = (a | b);
xxii. result = (a || b);
xxiii. result = (a ^ b);
xxiv. result = (a << 2);
 xxv. result = (a >> 2);
xxvi. result += a;
xxvii. result -= a;
xxviii. result *= a;
xxix. result /= a;
 xxx. result >>= 2;
xxxi. result <<= 2;
xxxii. result &= 2;
xxxiii. result |= 2;
xxxiv. result = (a < b) > c :  d;
 xxxv. result = (a > b) > c :  d;
```