North South University

Department of Electrical and Computer Engineering

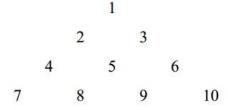
CSE 115L: Programming Language I Lab

Week 03 – Assignments

- 1. Write a program to find the factorial value of any number entered through the keyboard.
- 2. Two numbers are entered through the keyboard. Write a program to find the value of one number raised to the power of another.
- 3. Write a program to print out all Armstrong numbers between 1 and 500. If sum of cubes of each digit of the number is equal to the number itself, then the number is called an Armstrong number. For example, 153 = (1 * 1 * 1) + (5 * 5 * 5) + (3 * 3 * 3)
- 4. Write a program for a matchstick game being played between the computer and a user. Your program should ensure that the computer always wins. Rules for the game are as follows:
 - There are 21 matchsticks.
 - The computer asks the player to pick 1, 2, 3, or 4 matchsticks.
 - After the person picks, the computer does its picking.
 - Whoever is forced to pick up the last matchstick loses the game.
- 5. Write a program to enter the numbers till the user wants and at the end it should display the count of positive, negative and zeros entered.
- 6. Write a program to print all prime numbers from 1 to 300. (Hint: Use nested loops, break and continue)
- 7. Write a program to produce the following output:

A	B	C	D	F.	F	G	F	E	D	C	B	A
A	В	C	D	E	F		F	E	D	C	В	A
A	B	C	D	E				E	D	C	B	A
A	B	C	D						D	C	B	A
A	В	C								C	В	A
A	B										B	A
A												A

8. Write a program to produce the following output:



9. Write a program to produce the following output:

10. Write a C program to print the diamond patterns of stars.

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11. Write a C program to print patterns of stars.

12. What would be the output of the following programs:

```
a) main()
    int x = 4, y, z;
    y = --x;
    z = x--;
    printf ( "\n%d %d %d", x, y, z );
b) main()
    int x = 4, y = 3, z;
    z = x---y;
    printf ( "\n%d %d %d", x, y, z );
c) main()
   {
        int x = 4, y = 0, z;
        while (x \ge 0)
        {
        if (x == y)
        break;
        else
        printf ( "\n%d %d", x, y );
        X--;
```

```
y++;
     }
}
d) main()
       int i = 1, j = 1;
       for (;;)
          if (i > 5)
             break;
          else
             j += i;
          printf ( "\n%d", j );
          i += j;
       }
    }
e) main()
      int i;
      for (i = 1; i <= 5; printf (
      "\n%c", 65));
         i++;
   }
```