Assignment Set 3.2 (Assembly Language Programming)

- **Assignments will be evaluated by the TAs.**
- **All codes must be properly documented and good code writing practice should be followed (carry marks).**
- **Copying is strictly prohibited. Any case of copying will automatically result in F for the whole course, irrespective of your performance in the other parts of the lab.**
- **Marks distribution: 15, 25, 30, 30**

Write assembly level programs to solve the following problems:

Problem 1:

Sixteen tokens have been distributed among the students for entry in the DJ night of Alcheringa 2019. Some tokens are fake and some are real. Each token is represented by a validation bit. The sixteen tokens' validation bits are arranged as a two byte hexadecimal number. Your task is to count the number of real and fake tokens.

Problem 2:

Delhi has become the most polluted city in the world. To reduce the air pollution, Chief Minister of Delhi decided to cut down vehicular traffic approximately by half. Under the scheme, vehicle with license plate number ending with odd number can run on an odd day and that with even number can run on even day (eg. Vehicle with number DL1CA2134 can run on 2nd,4th, 6th,….. of a month but not on 3rd,5th ,7th ,…..). Given a list of vehicle numbers, store them in two separate lists, even list and odd list. (Consider the last two digits of the vehicle numbers).

Problem 3:

In 'Diwali Mela - 2018', a group of students in a food stall had two types of juices: mango and orange. They prepared 15 liters of mango juice and 20 liters of orange juice. Find the least possible number of drums (fully filled) of equal size in which different types of juice could be filled without mixing.

Problem 4:

Ajay wants to sneak out of his room at night to watch a movie with his friends. The only way out for his escape is through the window towards the backyard. The window is 6 meters above the ground. There is a deep stream flowing just outside his window which is 8 meters wide and Ajay cannot swim. So he decided to set a ladder from his window to the opposite bank of the stream. Find out the minimum length of the ladder using which Ajay can execute the escape plan perfectly.