Assignment 1

The lists of roll numbers of students registered in 4 different courses mentioned in the assignment are present in cs201.txt, cs341.txt, cs431.txt and ma101.txt.

The program reads the roll numbers from these files.

It generates using the pseudo-random function random_rollno_generator(L) that takes L, the list of all the course information files as input.

The documentation of the function is present in the code itself.

Output

"from " "cs341.txt"

140101004 140101006 140101013 140101015 140101019 140101022 140101024 140101028 140101031 140101033 140101037 140101039 140101040 140101042 140101046 140101048 140101051 140101055 140101057 140101060 140101064 140101066 140101073 140101075 140101079 140101082 140101084 140101088 140123002 140123006 140123008 140123011 140123015 140123017 140123020 140123024 140123026 140123033 140123035 140123039 140123042 140123048 140123051

"from " "cs201.txt"

150101003 150101005 150101009 150101012 150101014 150101018 150101021 150101023 150101027 150101029 150101030 150101032 150101036 150101038 150101041 150101045 150101047 150101050 150101054 150101056 150101063 150101065 150101069 150101072 150101074 150101078 150101081 150101083 150101087

"from " "cs431.txt"

10010128 130101001 130101005 130101007 130101010 130101014 130101016 130101023 130101025 130101029 130101032 130101034 130101038 130101041 130101043 130101047 130101049 130101050 130101052 130101056 130101058 130101061 130101065 130101067 130101070 130101076 130101083 130101085 130101089

"from " "ma101.txt"

140101033 140103064 150103054 150104006 150104053 150107027 150121010 160101002 160101004 160101008 160101011 160101013 160101017 160101019 160101020 160101022 160101026 160101028 160101031 160101035 160101037 160101040 160101044 160101046 160101053 160101055 160101059 160101062 160101064 160101068 160101071 160101073 160101077 160101080 160102001 160102003 160102007 160102009 160102010 160102012 160102016 160102018 160102021 160102025 160102027 160102030 160102034 160102036 160102043 160102045 160102049 160102052 160102054 160102058 160102061 160102063 160102067 160102070 160102072 160103002 160103006 160103008 160103011 160103015 160103017 160103020 160103024 160103026 160103033 160103035 160103039 160103042 160103044 160103048 160103051 160103053 160103057 160103060 160103062 160103066 160103071 160103075 160104001 160104005 160104007 160104010 160104014 160104016 160104023 160104025 160104029 160104032 160104034 160104038 160104041 160104043 160104047 160104050 160104052 160104056 160104061 160104065 160104070 160104074 160106003 160106005 160106009 160106012 160106014 160106018 160106021 160106023 160106027 160106030 160106032 160106036 160106041 160106045 160106050 160106054 160107002 160107004 160107008 160107011 160107013 160107017 160107020 160107022 160107026 160107031 160107035 160107040 160107044 160107053 160107059 160107062 160107068 160108001 160108003 160108007 160108010 160108012 160108016 160108021 160108025 160108030 160108034 160121002 160121006 160121008 160121011 160121015 160121017 160121020 160121024 160121026 160121033 160121035 160121039 160121042 160121044 160122001 160122005 160122007 160122010 160122016 160122023 160122025 160122029 160122032 160122034 160122038 160122041 160122043 160123004 160123006 160123013 160123015 160123019 160123022 160123024 160123028 160123031 160123033 160123037 160123040 160123042

Assignment 2

Here we implement the simplified approximation of simpson's rule.

h/3 * (sigma from 1 to n/2) [f(x_2j-2) + 4*f(x_2j-1) + f(x_2j)]

The documentation for the implemention of this formula is simple and is done in the code itself.

output

```
design 1 4x^2:
Simpsons = 74.66666, Trapezoid Method = 74.6672
design 2 4e^x:
Simpsons = 189.77246, Trapezoid Method = 188.84267
design 3 4x^4 - 4x^3:
Simpsons = 554.6667, Trapezoid Method = 553.62506
```

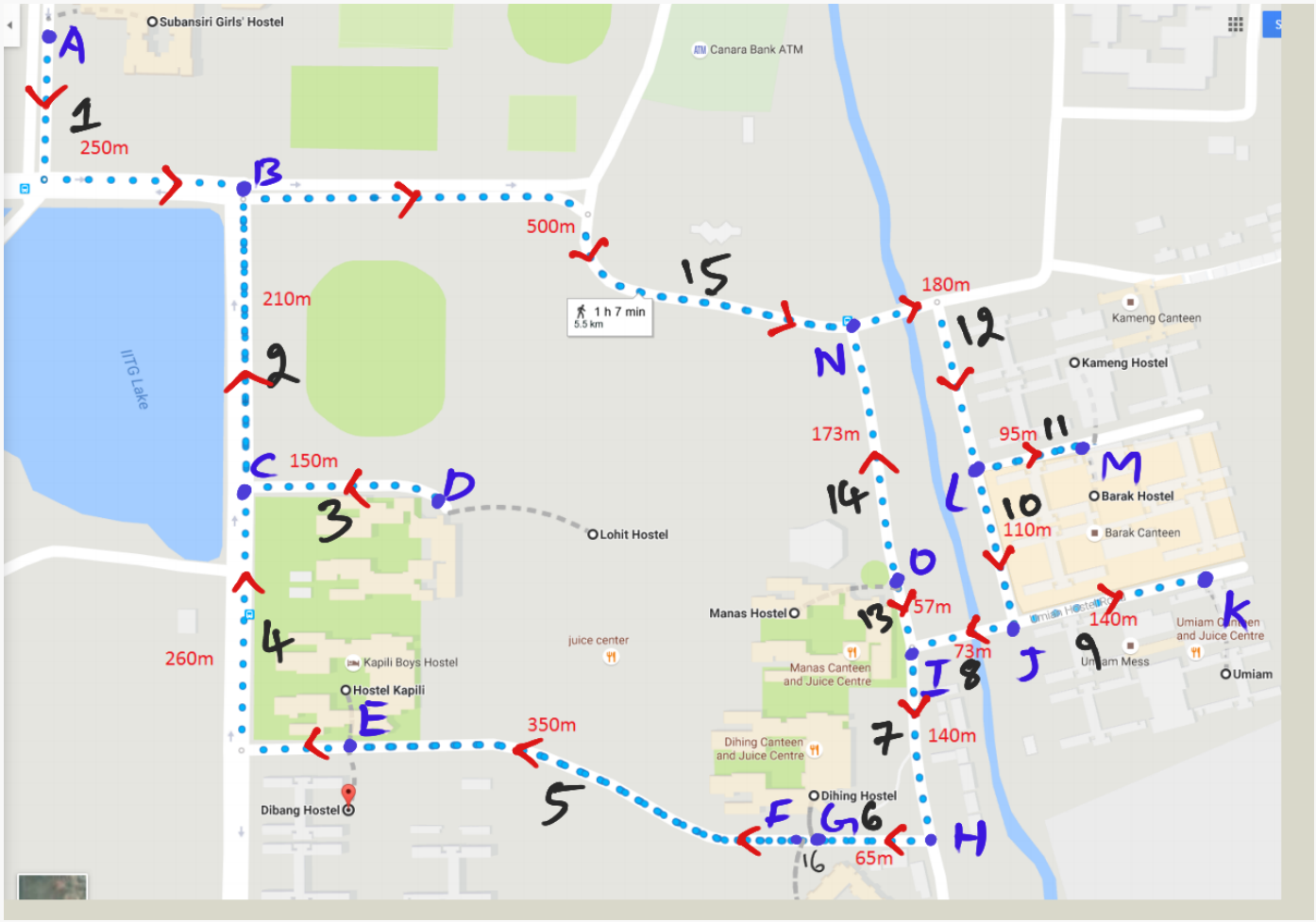
Assignment 3

We have labelled diagrams in three traffic flow scenarios in the diagrams uploaded in this url

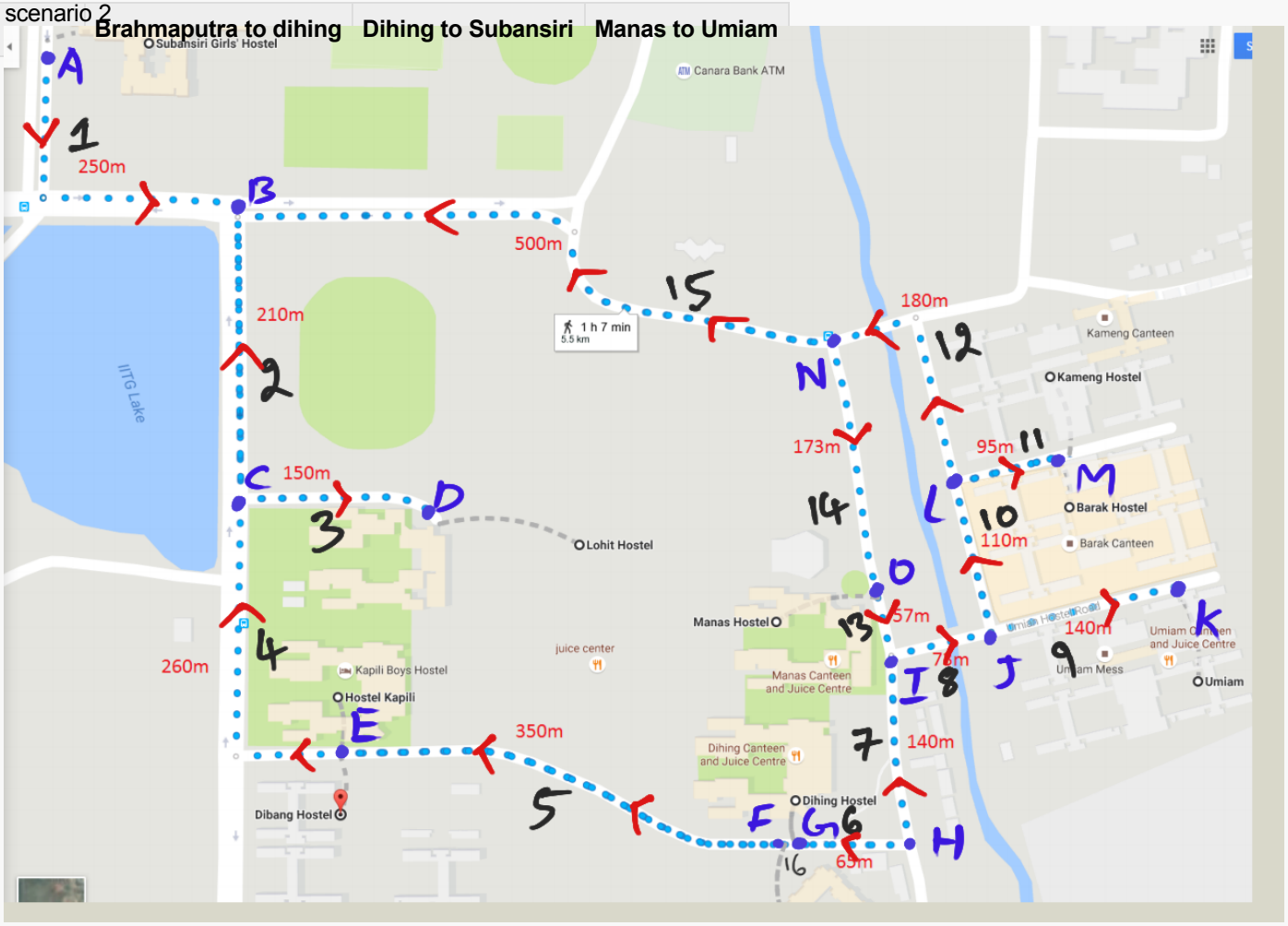
https://drive.google.com/open?id=0B4wMJCt4kEmbQVJERWhQMjVnUmM

This link contain three images

1. Scenario 1



2. scenario 2



Let us discuss the reachability if the student wishes to go from one hostel to other for three pairs of hostels

1. Brahmaputra to Dihing
2. Dihing to subansiri
3. Manas to Umiam

Now we examine the ouput of the program in each of these scenarios for each of these three pairs of hostels

output

	Brahmaputra to dihing	Dihing to Subansiri	Manas to Umiam
scenario 1	1888	No path	603
scenario 2	No path	No path	270
scenario 3	2	1318	270