

ASSIGNMENT #1

[Issued on: 2021_1007 — Deadline: 2021_1007 + 2 weeks]

Introduction:

You are an engineer in a research institute. Your task is to develop a solution algorithm for the given system below. Please, prepare a report¹ for submission. Your task is to develop an algorithm to completed the required tasks listed in To Do's part.

Students are grouped in two at each group. Groupmates are randomly selected. Please, get in touch with your groupmate and plan the tasks to complete.

Given:

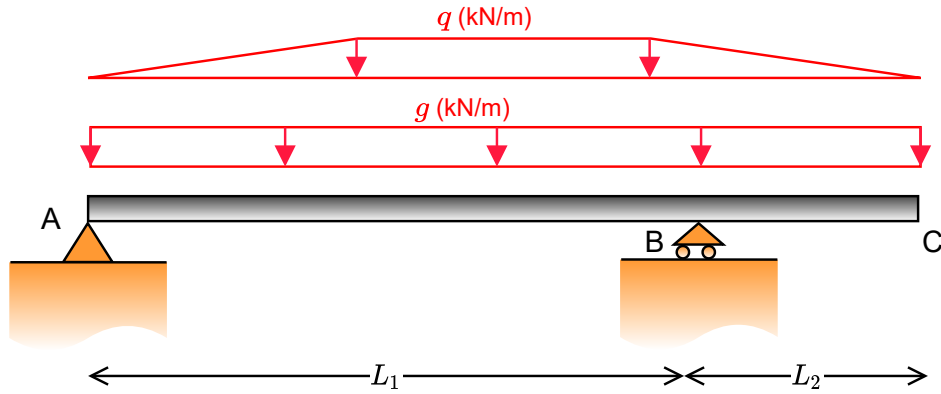


Figure 1: Simple beam with side cantilever

Parameters of the system in Fig. 1 is given in Table 1.

Table 1: Students and groups

Group	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
L1	13	11	8	7	14	14	11	11	9	9	10	15	11	15	7	8	8	11	7	10	8
L2	6.5	5.5	4	3.5	7	7	5.5	5.5	4.5	4.5	5	7.5	5.5	7.5	3.5	4	4	5.5	3.5	5	4
g	7.3	5.3	5.8	5.1	7.2	5.9	8.4	6.1	9.2	8.6	7.4	8.7	7.3	9.5	9.4	8.2	6.7	7.2	6	6.4	8.1
q	4.4	3.7	5.8	4.1	4.3	5.9	6.7	5.5	9.2	5.2	6.7	3.5	3.7	4.8	8.5	6.6	5.4	7.2	2.4	4.5	8.1

To Do's:

1. Develop algorithm in a flowchart.
2. Develop your solution tool (Python function is recommended).
3. Consider both g and q^2 loading, separately and superposed³.
4. Compute the support reaction for the given system.
5. Compare your internal force distribution for both separate and superposed loading cases.

¹Report should be a single PDF file where you will include problem statement, solution strategy, methodology, calculation steps, results, conclusion and references

²This load has three equal length parts.

³Please find the appropriate factors for superposition (Hint: remember LRFD).

Table 2: Students and groups

No	STUDENT NO	NAME-SURNAME	GROUP
1	1801082639	ECE GÜRTEKİN	1
2	1801082605	SARE GÜL AKYAYLA	1
3	1801082632	İSLAM FATİH YILDIRIM	2
4	1801082625	FATİH EMİR ARABACI	2
5	1801082608	ALEYNA TUTAL	3
6	1801082653	MERVE ÇALIŞKAN	3
7	1801082656	MURAT ARACI	4
8	1801082644	ÇAĞATAY FIRAT	4
9	1801082640	MUHAMMET BURAK BAŞKIRAN	5
10	1801082623	CUMALİ BURAK	5
11	1901082803	KUMUSHBİBİ MAHAMMATJANOVA	6
12	1801082646	AYÇA NUR KAYHAN	6
13	1801082620	HALİT ARMAN USLU	7
14	1801082660	BEYZANUR BATTAL	7
15	1901082678	ENES BİRİNCİ	8
16	1901082675	MEHMET YAT	8
17	1801082603	MUHAMMED YUŞA ZOBU	9
18	1801082629	DOĞUKAN ERKEK	9
19	1801082615	AHMET DOĞAN	10
20	1801082626	ÖMER ÖZKÖYLÜ	10
21	1801082662	MEHMET KIZILARSLAN	11
22	1901082611	SAFA MURAT KONUŞKAN	11
23	1801082621	ŞEYHMUS CAN TUNÇ	12
24	1801082652	BERAT ÇOLAK	12
25	1801082631	BARAN CİBELİK	13
26	1901082801	NOUR ALHUDA MAARRAWI	13
27	1901082802	HAZEM OLABI	14
28	1801082637	BURAK CAN KASAP	14
29	1901082673	ABDURRAHMAN SÜLEYMAN	15
30	1901082606	ÇAĞATAY DİNÇER	15
31	1801082651	VEYSEL EMİN ASLAN	16
32	1801082622	OĞUZCAN GÜVENÇ	16
33	1801082650	CEM TUTKU MISIR	17
34	1801082602	ABDULLAH ARVAS	17
35	1801082630	MUHAMMED SEVİNÇTEKİN	18
36	1801082657	ŞEYMA NUR TERZİ	18
37	1801082649	AHMET CANER ABLAK	19
38	1901082631	TALAT FAHRİ GÖZAYDIN	19
39	1801082642	AHMET EMİN EMÜL	20
40	1801082612	SİDAR ALİ PAYDAŞ	20
41	1801082648	ARİF DURUKAN YILMAZ	21
42	1801082619	MUSTAFA ALİ YAVUZHAN	21