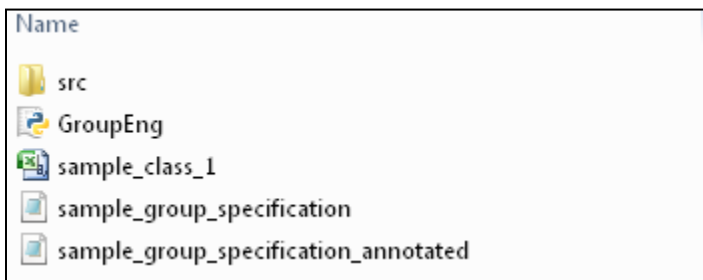


GroupEng Workshop Instructions

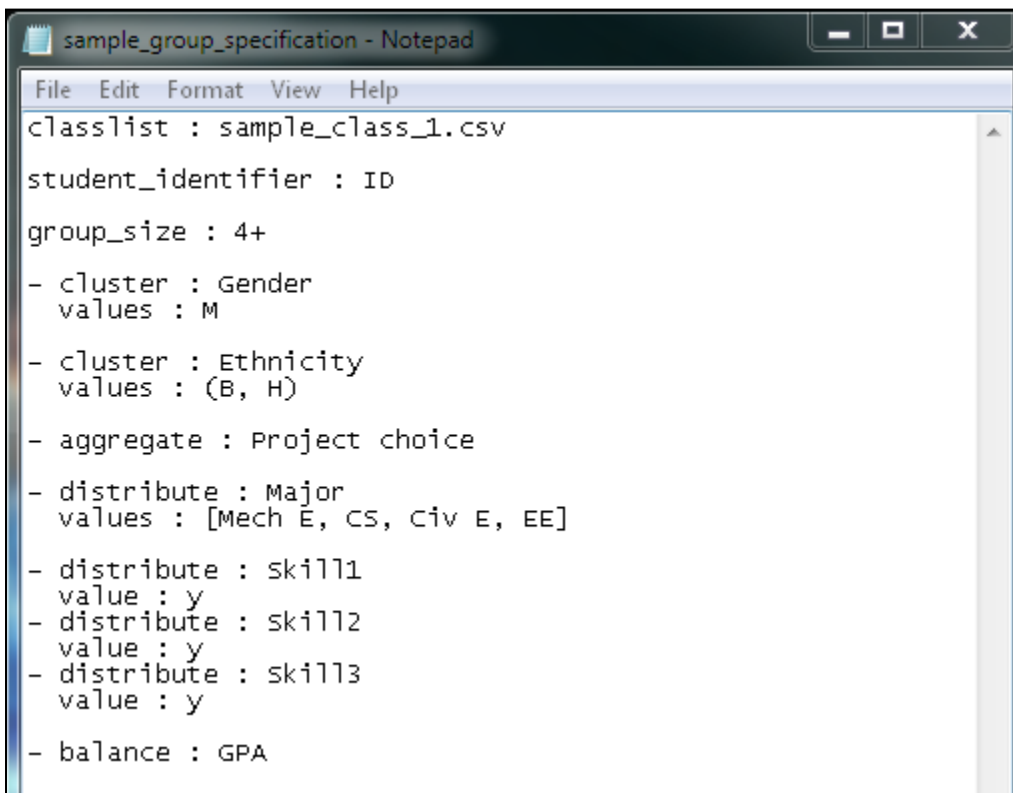
1. Go to www.groupeng.org
2. Download **GroupEng v1.1**
3. If you don't have Python 2.7.2, download it by clicking on the link called "this" on the website.

Download and install python if necessary (you probably want [this](#) version),

4. Unzip or Extract the GroupEng v1.1 folder you downloaded.
5. Click on Extract and open the "grouping_1.1" folder. These are the files within the folder.



6. Open the example input **rules file** "*sample_group_specification*" and the annotated example file "*sample_group_specification_annotated*". Open the files using Notepad or another text editor. You will create a similar instruction file similar to specify how you want to form groups.



```
sample_group_specification - Notepad
File Edit Format View Help
classlist : sample_class_1.csv
student_identifier : ID
group_size : 4+
- cluster : Gender
  values : M
- cluster : Ethnicity
  values : (B, H)
- aggregate : Project choice
- distribute : Major
  values : [Mech E, CS, Civ E, EE]
- distribute : skill1
  value : y
- distribute : skill2
  value : y
- distribute : skill3
  value : y
- balance : GPA
```

7. You also need a **classlist file** which lists the students and the attributes pertaining to them. Open “*sample_class_1*” to see an example. Instead of ID number, you can use netID or name. You specify which class file to use as classlist : filename.csv (classlist : sample_class_1.csv in the previous screenshot).

	A	B	C	D	E	F	G	H	I	J
1	ID	GPA	Gender	Ethnicity	Major	Skill1	Skill2	Skill3	Project choice	
2	1	2.024016	M	-	Mech E	y	y	y	automotive	
3	2	2.933907	F	-	Mech E	y	y	y	robotics	
4	3	3.214822	M	-	EE	-	y	-	automotive	
5	4	3.187678	M	B	Mech E	y	y	y	nanotech	
6	5	4.267751	F	-	Civ E	y	y	y	renewable energy	
7	6	3.163558	F	-	Civ E	-	-	-	robotics	
8	7	1.91945	F	-	EE	y	y	y	nanotech	
9	8	2.848456	F	H	EE	y	y	y	renewable energy	
10	9	3.466964	F	H	Mech E	y	y	-	automotive	
11	10	2.891914	F	-	EE	-	y	-	automotive	
12	11	3.121714	F	-	EE	-	y	y	robotics	
13	12	3.024862	F	-	Civ E	y	y	-	nanotech	
14	13	3.123721	F	H	CS	y	y	y	statistics	
15	14	2.870665	M	-	Civ E	y	y	y	nanotech	
16	15	3.080157	F	-	EE	-	y	y	automotive	
17	16	2.532384	M	-	Mech E	y	y	y	automotive	
18	17	3.078214	M	-	Civ E	y	y	-	robotics	
19	18	3.704522	F	B	Civ E	y	y	y	renewable energy	
20	19	3.086845	F	-	EE	y	y	y	nanotech	

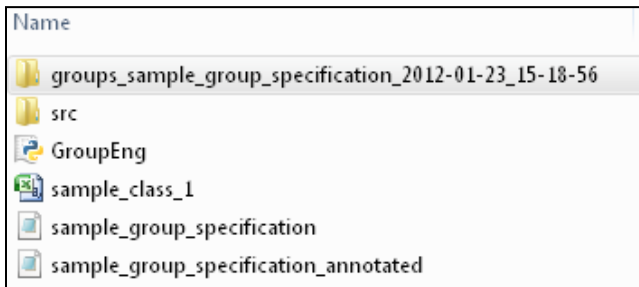
8. In the “*sample_class_1*” file, the attributes selected are Gender, Ethnicity, Project choice, Major, Skills and GPA. You can select other attributes for your class. See table below. For now we will run the sample file.

Table 1. Sample grouping rules

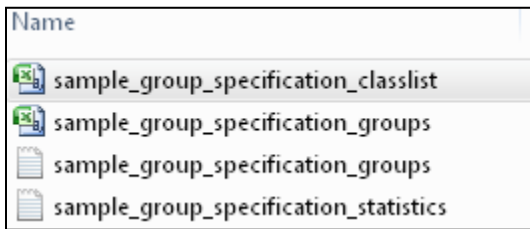
Sample rule	Operation	Student Attribute
Make groups interdisciplinary	Distribute	Major
Spread out students by year		Year in school
Each group has the necessary background		Prerequisite skills or courses
Spread out students with weak English		English proficiency
Each group has a self-identified leader, writer, and content specialist		Self-identified contribution to previous groups
Separate certain students		Common flag for these students [#]
Don't isolate women		Cluster
Don't isolate URMs	Ethnicity	
Keep disabled student with note-taker	Flag these students, [#]	
Group by project choice	Aggregate	Project choice
Group students by major		Major
Group students by recitation section		Recitation section
Group grad and ugrad separately		Grad or ugrad status
Group students by how much effort they want to put into the project		Survey data on expected effort [^]
Balance academic strength of groups	Balance	GPA
Make groups fair based on prior skills or knowledge		Pre-test score
Make groups fair based on how students are performing in the class		Test 1 scores
Make groups fair based on prior skills		Survey data on skill level [*]
Create fair mixed ability groups		GPA, test score or pre-test score

[^]Survey must contain several specific choices (not a fill in the blank). [#] different flag for different sets of students

- Run GroupEng.py. When prompted, select the rules file “*sample_group_specification*”, or your own rules file.
- A new folder will be created with the results spreadsheet under your GroupEng folder.



- To see your results, click on the output folder and select the classlist file.



- Here is what the output *sample_group_specification_classlist* file contains. You can sort the column with the group number to see the list organized by group number.

	A	B	C	D	E	F	G	H	I	J
1	ID	GPA	Gender	Ethnicity	Major	Skill1	Skill2	Skill3	Project choice	Group Number
2	1	2.024016	M	-	Mech E	y	y	y	automotive	18
3	2	2.933907	F	-	Mech E	y	y	y	robotics	24
4	3	3.214822	M	-	EE	-	y	-	automotive	15
5	4	3.187678	M	B	Mech E	y	y	y	nanotech	17
6	5	4.267751	F	-	Civ E	y	y	y	renewable ene	20
7	6	3.163558	F	-	Civ E	-	-	-	robotics	21
8	7	1.91945	F	-	EE	y	y	y	nanotech	9
9	8	2.848456	F	H	EE	y	y	y	renewable ene	22
10	9	3.466964	F	H	Mech E	y	y	-	automotive	18
11	10	2.891914	F	-	EE	-	y	-	automotive	16
12	11	3.121714	F	-	EE	-	y	y	robotics	24
13	12	3.024862	F	-	Civ E	y	y	-	nanotech	24
14	13	3.123721	F	H	CS	y	y	y	statistics	14
15	14	2.870665	M	-	Civ E	y	y	y	nanotech	21
16	15	3.080157	F	-	EE	-	y	y	automotive	1
17	16	2.532384	M	-	Mech E	y	y	y	automotive	3
18	17	3.078214	M	-	Civ E	y	y	-	robotics	8
19	18	3.704522	F	B	Civ E	y	y	y	renewable ene	22
20	19	3.086845	F	-	EE	y	y	y	nanotech	21

13. GroupEng also provide out that can be used for posting groups. See below for example, “*sample_group_specification_group*” which specifies the members of each group by student ID (or name or netID).

	A	B	C	D	E	F
1	Group 1	15	28	50	92	
2	Group 2	29	32	41	55	
3	Group 3	16	20	36	72	
4	Group 4	26	39	94	105	
5	Group 5	40	63	80	97	
6	Group 6	21	53	62	64	
7	Group 7	24	42	49	78	
8	Group 8	17	65	66	81	
9	Group 9	7	34	89	99	
10	Group 10	57	73	98	103	
11	Group 11	33	35	37	61	
12	Group 12	25	60	74	93	
13	Group 13	27	45	71	76	102
14	Group 14	13	22	38	70	

14. To create groups for your own class, determine which attributes you are using (Table 1). Make a text file similar to “*sample_group_specification*” and save as a “*filename.groupeng*” file.
15. Make the spreadsheet with your class listings and selected attributes in Excel, similar to “*sample_class_1*” and save as a “*filename.csv*” file.
16. Run `GroupEng.py`, selecting your “*filename.groupeng*” file when prompted.