American University of Beirut

Department of Computer Science
CMPS 209- Spring 2010
Lab Assignment 7
Week of: Apr 19 – Apr. 23

Objectives

- ***Using Application Software: Ms Excel .***

Instructions

- ***Study the related material from Excel Lectures3 before going to the lab.***
- ***Solve the following exercises during the lab session. The assignment is due by the end of the lab session.***

Using your network drive

- ***Go to my computer then choose Z:// drive***
- ***Right Click and choose to create a new folder***
- ***Right click on this new folder and rename it as follows: Username.SectionNumber.AssignNumber***
  - ***Example: If your user name is abc99 and you are in section 5 and you are doing assignment 1 then your folder should have the following name: abc99.5.1***
- ***Your work should be saved into this folder so that it can be graded.***

Exercise 1: Using Look-up Functions

You are thinking of advertising a certain type of Juice on a television channel. As you buy more ads, the price of each ad drops as described in the following table:

Number of Ads	Price Per Ad
1-5	12,000 $
6-10	11,000 $
11-20	8,000 $
More than 20	7,000 $

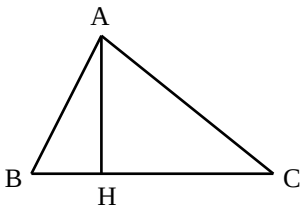
- Type the above table into the "Ads" worksheet then write the appropriate function that yields the cost of purchasing any number of ads using the above table.
  Example: If you decide to buy 8 ads, you pay $11,000 per add, but if you buy 14 ads, you pay $8,000 per add.

- Create another table with the following numbers of adds then copy your function to determine their costs accordingly:

Number of Ads	Costs of ads
22	
3	
7	
13	
0	

Exercise 2: Triangles Dataset

- Open the "Triangles" worksheet. The data in the first three columns represent the lengths of the sides AB, AC, and BC of different triangles. Assuming that the base is BC, the length of the height AH is provided in the fourth column.



- Insert in F4 a formula to calculate the area of the first triangle. Use the fill handle to find the area for the remaining triangles. (Area= $\frac{\text{base}\times\text{height}}{2}$)

- Insert in G4 a function to determine whether the first triangle is right at A. Use the fill handle to do the same for other triangles. (triangle ABC is right at A when $AB^2+AC^2=BC^2$).
- Insert in H4 a function to determine whether the first triangle is equilateral, isosceles, or scalene. Use the fill handle to determine the nature of the remaining triangles. (a triangle is said to be equilateral when all its sides are equal, isosceles when it has two equal sides, and scalene when all sides are different).
- Insert in E18 a function to determine the average area of the triangles.
- Insert in E19 a function to determine the number of isosceles triangles that are right angled at A.

AB	AC	BC	AH	Area	Nature	Right at A
21	21	30	14.7	220.45	Isosceles	No
9	6	13	3.64	23.66	Scalene	No
34	34	34	29.44	500.56	Equilateral	No
16	9	9	7.33	32.98	Isosceles	No
3	4	5	2.4	6.00	Scalene	Yes
25	9	31	5.98	92.69	Scalene	No
5	5	7.07	3.54	12.50	Isosceles	Yes
10	10	10	8.66	43.30	Equilateral	No
7	3	7	2.93	10.26	Isosceles	No
8	6	10	5.23	26.14	Scalene	Yes
18	18	25.46	12.73	162.00	Isosceles	Yes

Average area	102.78
Number of right isosceles triangles	2

Exercise 3: Bandwidth Dataset

Open sheet "Bandwidth" which shows the number of visits, pages, and hits that a user has made while surfing the internet during the month of November, it also display the consumed Bandwidth (amount of data downloaded of the internet).

- Insert a new Column BEFORE Column B and fill its values with days of the week (Tuesday, Wednesday…). Note start with TUESDAY. (**Keep column A empty**).
- Merge the cells B1 and C1, B32 and C32, B33 and C33.
- Apply Filling and borders to your table as shown in the figure below.

Day		Number of visits	Pages	Hits	Bandwidth		Bandwidth in MB	Comment
Tuesday	1-Nov-07	7,461	240,026	1,099,518	3.32	GB	3399.68	High
Wednesday	2-Nov-07	6,657	218,767	1,007,802	2.36	GB	2416.64	High
Thursday	3-Nov-07	1,559	28,229	102,051	176.2	MB	176.22	Low
Friday	4-Nov-07	1,943	44,983	197,860	295.1	MB	295.13	Low
Saturday	5-Nov-07	1,851	44,701	212,590	331.9	MB	331.94	Low
Sunday	6-Nov-07	1,663	41,360	187,022	273.1	MB	273.11	Low
Monday	7-Nov-07	7,456	259,288	1,224,896	2.06	GB	2109.44	Really High
Tuesday	8-Nov-07	7,850	230,952	1,074,637	2.26	GB	2314.24	High
Wednesday	9-Nov-07	8,025	243,608	1,128,340	2.67	GB	2734.08	Really High
Thursday	10-Nov-07	7,769	227,562	1,027,321	2.42	GB	2478.08	High
Friday	11-Nov-07	7,202	210,587	944,556	2	GB	2048	High
Saturday	12-Nov-07	2,522	55,190	239,452	484.8	MB	484.84	Low
Sunday	13-Nov-07	1,954	41,293	172,716	360.7	MB	360.72	Low
Monday	14-Nov-07	7,722	240,132	1,078,511	2.2	GB	2252.8	High
Tuesday	15-Nov-07	7,694	224,795	987,733	2.43	GB	2488.32	High
Wednesday	16-Nov-07	7,390	222,062	965,239	2.23	GB	2283.52	High
Thursday	17-Nov-07	7,750	189,602	970,743	2.23	GB	2283.52	High
Friday	18-Nov-07	6,760	151,026	866,368	2.1	GB	2150.4	High
Saturday	19-Nov-07	2,545	43,133	221,886	719.2	MB	719.16	Low
Sunday	20-Nov-07	1,956	32,315	155,650	469.5	MB	469.45	Low
Monday	21-Nov-07	7,418	174,604	1,026,809	2.5	MB	2.5	High
Tuesday	22-Nov-07	2,593	40,229	183,515	492.6	MB	492.55	Low
Wednesday	23-Nov-07	7,840	177,645	1,043,319	2.55	GB	2611.2	High
Thursday	24-Nov-07	7,657	169,771	964,365	2.45	GB	2508.8	High
Friday	25-Nov-07	7,320	154,512	869,989	2.64	GB	2703.36	High
Saturday	26-Nov-07	2,581	54,210	265,511	691.6	MB	691.64	Low
Sunday	27-Nov-07	2,051	38,899	172,264	428	MB	428.01	Low
Monday	28-Nov-07	7,779	184,492	1,062,124	3.13	GB	3205.12	High
Tuesday	29-Nov-07	115	903	4,461	15.36	MB	15.36	Low
Wednesday	30-Nov-07	-	-	-	0	MB	0	Low
Average		5036.10	132829.20	648574.93			1490.93	
Total		151083.00	3984876.00	19457248.00			44727.83	

- In column H (now it became I), calculate the bandwidth in MB. In order to do so, you MUST use the number in K2 (now it is L2).
- Calculate the AVERAGE and TOTAL Number of Visits, Pages, and Hits. **Note** that you can also use the AutoFill in your calculations.
- Using the value in M3, Insert a **formula** in I3 that calculates the "Bandwidth in MB". **Note** that you can also use the AutoFill in your calculations.
- Apply blue data bars to the values under "Hits" and "Pages" as shown above.

- In the 'Days of Month' Sheet, fill the values in the comment column according to the following:
  - "Low" in case the number of pages is less than 100,000
  - "High" in case the number of pages is greater than 100,000
  - "Really high" in case BOTH the number of pages is greater than 100,000 AND the number of Hits is greater than 1,100,000.
- Copy this sheet, and rename it to "Days of Month EXTRA".
- On the copied sheet, insert a **function in L6** that gives the corresponding *Bandwidth in MB* for the date with 7202 *visits*.

Exercise 4: Bears

The sheet "Bears" includes some data about bears, follows the instructions below to get the following result.

Bears

AGE	MONTH	SEX	HEADLEN	HEADWTH	WEIGHT	Year of Birth	Healthy Bear?
8	8	1	9	4.5	34	2002	No
9	9	1	10	4	40	2001	No
9	9	1	10	4	46	2001	No
10	10	1	9.5	4.5	65	2000	No
10	10	1	11.5	5	86	2000	Yes
10	10	1	11	5	94	2000	Yes
11	11	1	11.5	6	79	1999	Yes
16	4	1	10	4	60	1994	No
16	4	1	10	5	64	1994	Yes
17	5	1	11.5	5	114	1993	Yes
18	6	1	12.5	8.5	140	1992	Yes
35	11	1	13.5	8.5	212	1975	Yes
45	9	1	13.5	7	204	1965	Yes
45	9	1	16	6	220	1965	Yes
51	4	1	13.5	8	360	1959	Yes
55	7	1	16.5	9	344	1955	Yes
17	5	2	11.5	5	76	1993	Yes
20	8	2	11.5	5	105	1990	Yes
44	8	2	12.5	4.5	140	1966	Yes
45	9	2	13	6.5	182	1965	Yes
53	5	2	12.5	6	144	1957	Yes
57	9	2	13	5.5	116	1953	Yes
57	9	2	12.5	5	125	1953	Yes
57	9	2	13.5	7	204	1953	Yes
58	10	2	13.5	6.5	202	1952	Yes
70	10	2	14.5	6.5	316	1940	Yes
81	9	2	13	5	132	1929	Yes
82	10	2	13.5	6.5	356	1928	Yes
83	11	2	14.5	7	236	1927	Yes
100	4	2	13	7	220	1910	Yes
104	8	2	15.5	6.5	166	1906	Yes

Open the "***Bears***" worksheet then apply the following:

- In cell K13, under "Year of Birth", compute the year of birth of the bear using the age given in E13. Use fill handle to copy the formula to all the cells in the same column.
- A bear is considered ***Healthy*** when ***<u>at least one</u>*** of the following is satisfied:
  - *"head length" is above 10 and "head width" is above 5*
  - *"head length" + "head width" is greater than 14.*

  Insert in cell L13, under "Healthy Bear?" an appropriate formula/function that displays "Yes" when the bear is healthy and "No" otherwise. Copy the formula/function to all other cells in same column.
- In cell K50, insert a function to find the HEADWTH of the bear that has the highest HEADLEN.
- In cell K51, insert a function to calculate the number of bears whose age is between 12 and 46 ***exclusive***.
- Format the table as shown below. Pay attention to the shapes, shadings, effects, picture, title, alignment…

- ***<u>Save your work then zip your folder and submit it using Moodle.</u>***

Enjoy the assignment ☺