



CHIANG MAI UNIVERSITY
College of Arts, Media and Technology
1st Semester / Academic Year 2020
955103 PROGRAMMING LOGICAL THINKING

Lab Assignment 01 : Introduction Flowchart and Pseudo-code

Name Student ID Section.....

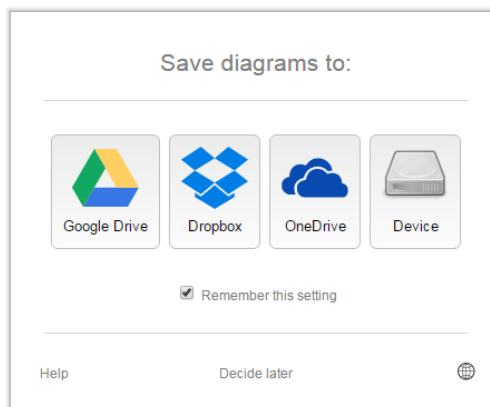
Objectives:

- 1) The student can draw a simple flowchart using Draw.io.
- 2) The student can write a simple pseudo-code.
- 3) The student can convert between the flowchart and pseudo-code

Problem Set

1. Draw flowchart

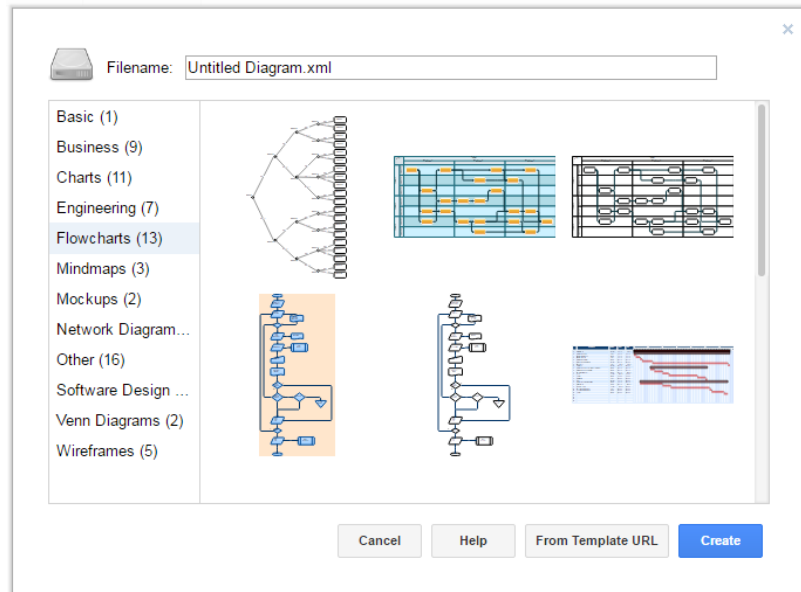
- 1) Go to website <https://www.draw.io/>. Then, the following message box will pop up.



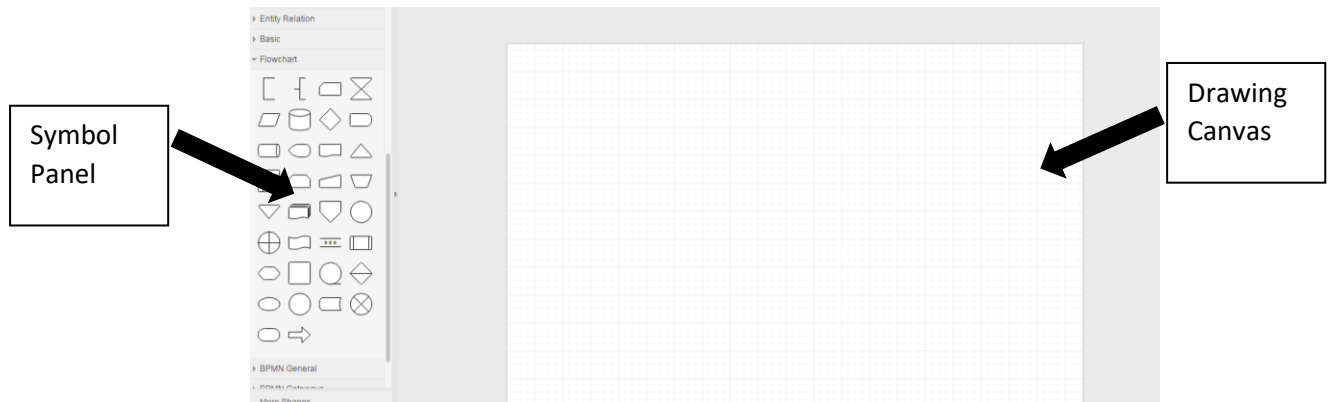
- 2) You can choose the destination that you want to store your file. In this class, I suggest that you choose device. So, you can download the file. Then, the following message box will pop up.



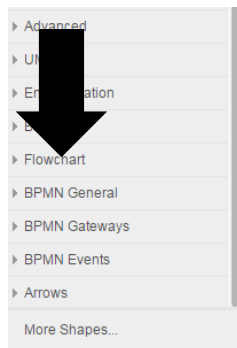
- 3) In this menu, you will have to choose whether you want to continue your work or you want to create a new work. In this example, we need to create a new work. So, choose “Create New Diagram” button. Then, the following menu will pop up.



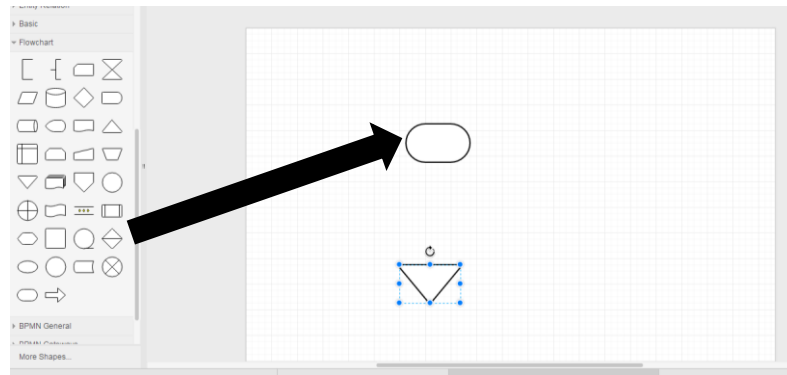
- 4) In this menu, you will have to select the template of the drawing canvas. You don't need to select anything. Click "Create" button. Then, the drawing canvas will appear as follows.



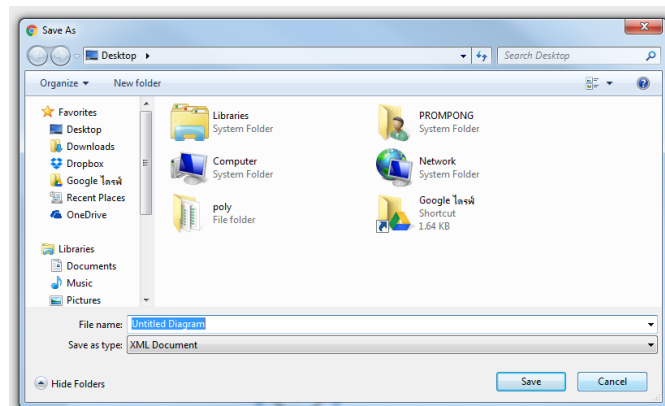
- 5) On the left hand side of the canvas, there is a symbol panel. In this panel, there are many symbol categorized in term of notation system. Different notation system may or may not share the symbol. In this class, we will use flowchart. So, you have to click at "Flowchart" tab.



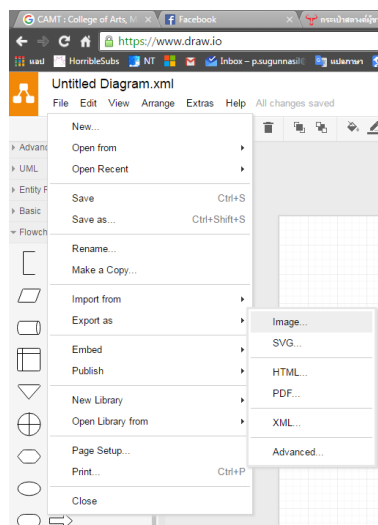
The menu displaying the symbol for flowchart will pop up as follows. You can create your diagram by dragging and dropping the symbol from the symbol panel to the drawing canvas.



- 6) When you want to save your work, you can use the “save” menu from the menu bar. The result of this approach is the XML file which can be edited later.



- 7) When you want to save your work as a picture, you can use the “export” menu from the menu bar and choose the “Image”. The result of this approach is the picture file which cannot be edited later but it can be insert into the report.



2. Flowchart Problem Set

2.1 Given the following description, you have to create the flowchart diagram.

This is a description of going-to-university process. A student starts this activity by waking up in the morning and leave the house. Then, the student takes the bus to the university. Finally, the student reaches the university.

Draw the diagram in the draw.io and show the TA.

.....(Signature)

2.2 Given the following description, you have to create the flowchart diagram.

This is a description of going-to-university process. A student begins by waking up in the morning and the student have to leave the house. If the student leave the house after 7.00 am, the student takes the bus to the university. Otherwise, the student has to walk to the university. Finally, the student reaches the university.

Draw the diagram in the draw.io and show the TA.

.....(Signature)

2.3 Given the following description, you have to create the flowchart diagram.

Mr. A is leaving home in a raining season. He starts by exiting the house. If it is a cloudy day, he will bring umbrella. Otherwise, he will do nothing. Then, if the date is Monday, he will take a bus. Otherwise, he will take a taxi.

Draw the diagram in the draw.io and show the TA.

.....(Signature)

2.4 Given the following description, you have to create the flowchart diagram.

Mr. B is counting fruits. He will receive a number of fruits in a basket. He will receive only 4 baskets from seller. Then, he will shout the total number of fruits. For example, 4, 5, 1, 3. Then, program shall display 13 as the total number of fruits.

Draw the diagram in the draw.io and show the TA.

.....(Signature)

2.5 Given the following description, you have to create the flowchart diagram.

Mr. B is counting fruits. He will receive a number of fruits in a basket. He will receive as long as the total number of fruits reaches 10. Then, he will show the message "The total number of fruits passes 10". For example, 6, 5.

Draw the diagram in the draw.io and show the TA.

.....(Signature)

3. Mixed Problem Set

3.1 Convert the flowchart in 2.4 into pseudo code.

.....(Signature)

3.2 Convert the flowchart in 2.5 into pseudo code.

.....(Signature)

3.3 Given the following problem statement

I have a DVD full episode of Agent of S.H.I.E.L.D season 1. There are 22 episodes. Each episode is about 45 minutes. If I plan to watch the series for 30 minutes a day. How long will I watch the whole series?

Remark : You need to design the program for the general case, not for this specific problem.

Draw the diagram in the draw.io and show the TA.

.....(Signature)

Write the pseudo-code and show the TA.

.....(Signature)

3.4 Given the following problem statement

Write a program to calculate the area of rectangle.

Hint: Identify the input, process and output.

Draw the diagram in the draw.io and show the TA.

.....(Signature)

Write the pseudo-code and show the TA.

.....(Signature)