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SECJ1013 PROGRAMMING TECHNIQUE 1

SEMESTER 1 2020/2021

ASSIGNMENT 1 – PAIRING (4%)

Introduction: In this assignment, you are given a problem and asked to solve it using a systematic approach. Here, you will apply your problem-solving skills. Recall that the solution of a problem is called an algorithm, which is a series of steps leading to the solution.

Objectives: Solve problems systematically using problem-solving methods (CLO1).

Focus on: Chapter 1 Programming Problem-Solving

Submission: Before 6th November 2020, 2359 (Malaysia Time).

Note: The assignment must be submitted before / on the due dates. Some points will be deducted for late submissions. Assignment submitted three days after the due date will not be accepted. Copying of work (texts, simulation results etc.) from other students/groups or from other sources is not allowed.

Part 1: Construct a pseudo code describing from alarm ringing to wake you up until wash up in the morning. [Hint: including the steps of ready to wake up, hitting snooze button, delay the alarm by 5 minutes, sleep for another 5 minutes, climbing out of bed…]

Ans:

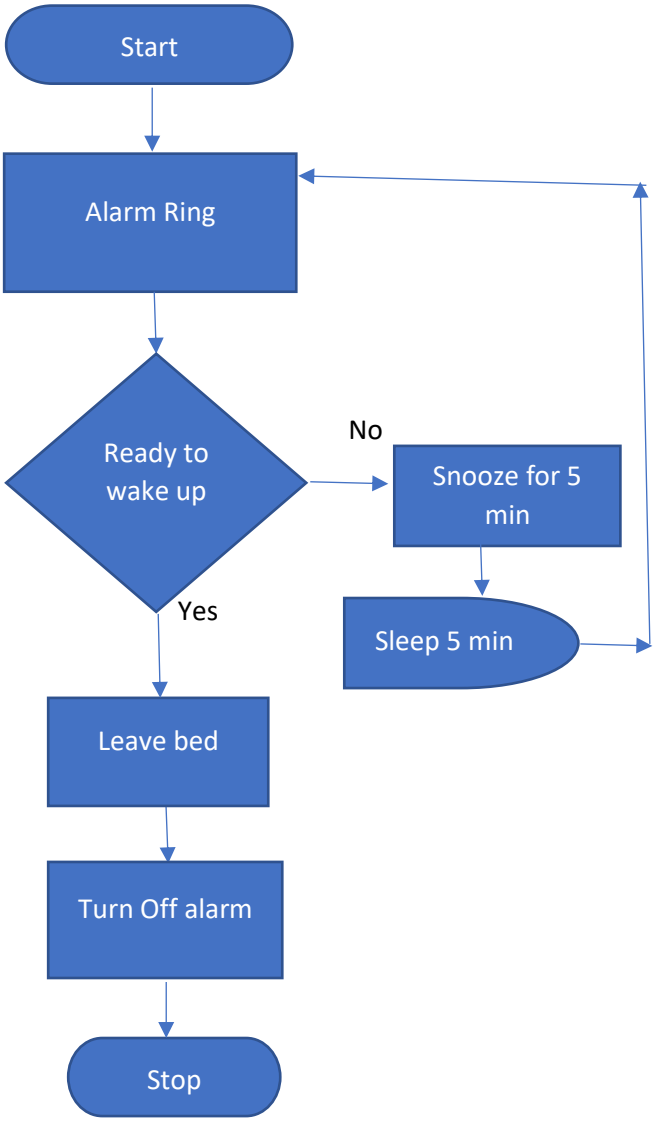
PsudoCode:

1. Start;
2. 2.Alarm Ring;
3. If ready to wake up;
   3.1 Leave bed;
   3.2 Else Snooze 5 min;
   3.3 sleep 5 min;
   3.4 Return To Step 2;

4.End_if;

5.Turn off alarm;

6.Stop;



Part 2: Construct a pseudo code describing the process of making a drink for your breakfast before going to school. [Hint: including the steps of fill kettle, is water level in the kettle == 1000ml, heat water, has the temperature of water in the kettle == 100°C, the water has boiled, make a drink, done breakfast…]

[Note: The size of kettle = 1.02L]

Ans:

PsudoCode:

PsudoCode:

1. Start;
2. Fill The kettle with 1020ml water;
3. Heat the water with 100°C temperature;
4. If water is boiled && water level ==1000ml;
   4.1 print water is boiled;
   4.2 else go to step 3;

5.End_if;

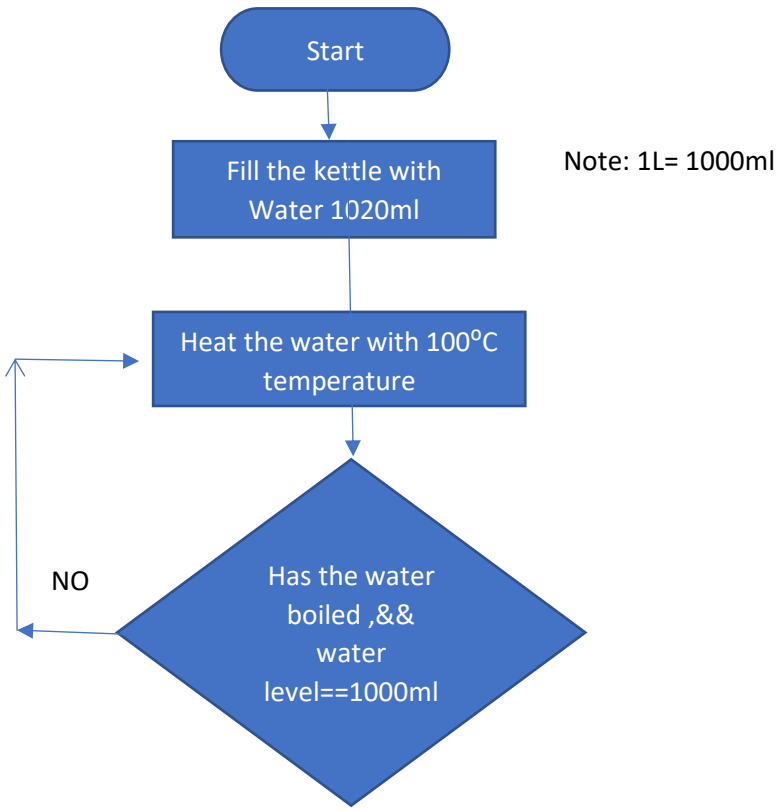
6.Put the water in Cup;

7.Make Drink;

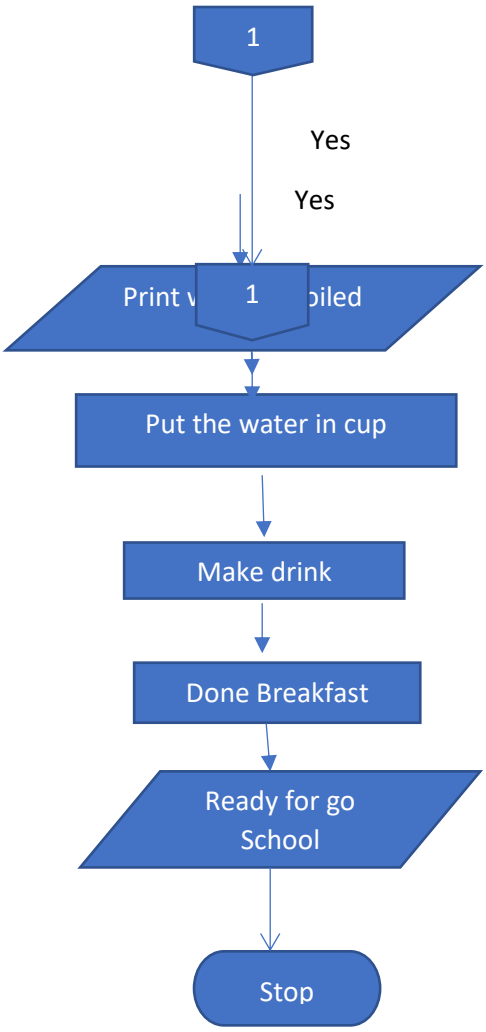
8.Done Breakfast;

9.Print ready for go School;

10.Stop;



Note: 1L= 1000ml


1
Yes
Yes
Print v
1
oiled
Put the water in cup
Make drink
Done Breakfast
Ready for go
School
Stop

Trace the output of Part 2 and display the results in the following table.

Water level in the kettle before heating water (ml)	**Temperature of water in the kettle during heating water (℃)**	**Output**
950	**90**	Not Boiled && Water level 950ml
1000	**100**	Boiled && Water level 980.40ml
1020	**40**	Not Boiled && Water level 1020ml
250	**60**	Not Boiled && Water level 250ml

Part 3: Construct a pseudo code describing from taking a bus to school until going back home after school. [Hint: including the steps of are you late, walk to class, get punishment, ready for class, take attendance, waiting for class, does teacher give homework, do the homework at home, ready to go home, clear the desk…]

Ans:

PsudoCode:

1. Start;
2. Get the bus;
3. Reach to school;
4. Walk to class;
5. If you are late;
   5.1 get the punishment ;

6.end_if;

7.take attendance;

8.print ready for class;

9.waiting for class;

10.class started;

11.class finished;

12.print ready to go home;

13.return to home;

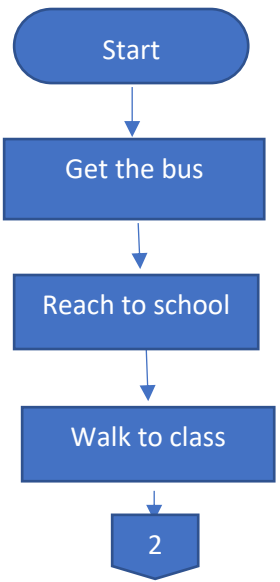
14.if teacher give homework;

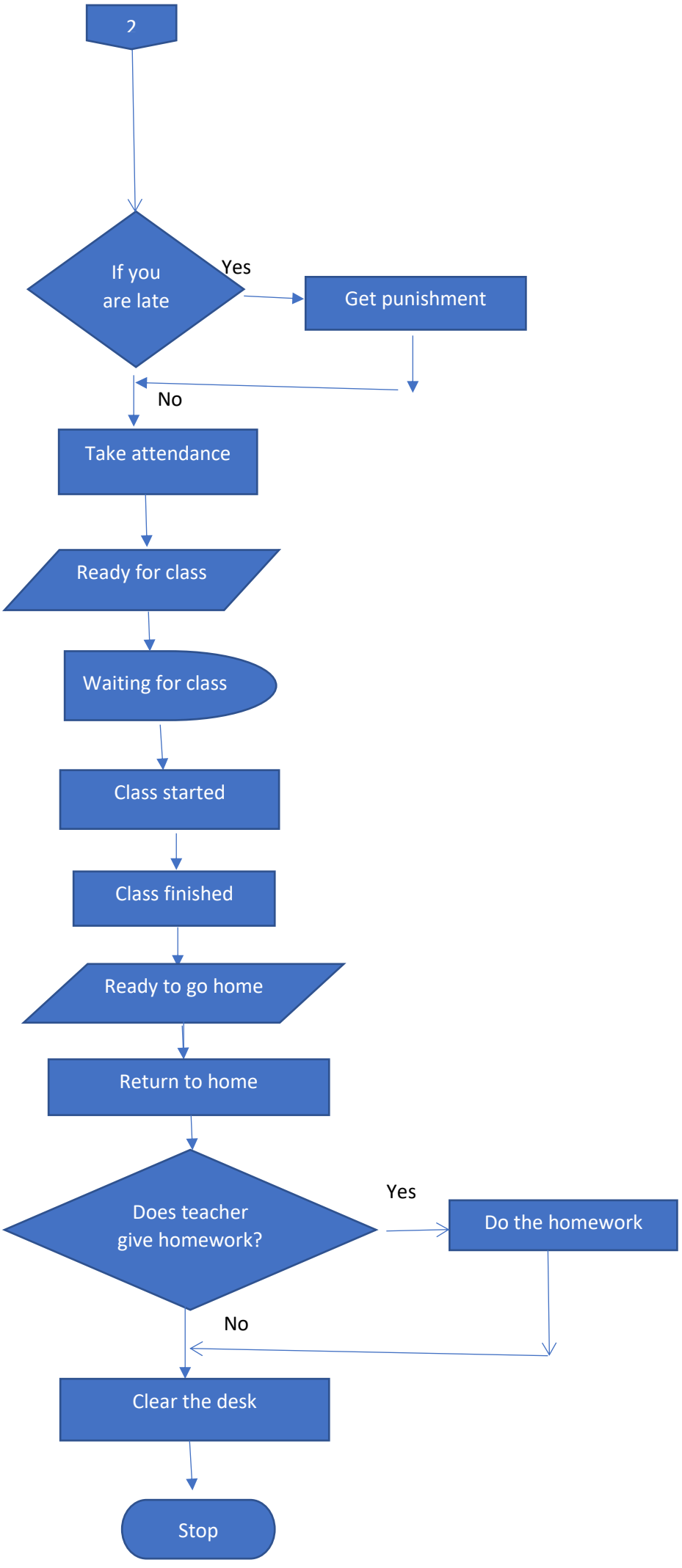
   14.1 do the home work;

15. end_if;

16.clear the desk;

17.stop;




If you are late
Yes
Get punishment
No
Take attendance
Ready for class
Waiting for class
Class started
Class finished
Ready to go home
Return to home
Does teacher give homework?
Yes
Do the homework
No
Clear the desk
Stop

Part 4: Construct a pseudo code describing from a process of checking whether you have to do homework or not when you come back from school until sleeping time. [Hint: is it due in < 12 hours, start working, watching TV, playing games, surfing social media, you are lying, done homework…]

Ans:

PsudoCode:

1. start;
2. if homework due in <12h;
   2.1check the homework;
   2.2 if homework done;
   2.3 print homework done;
   2.4 else do homework;

3. end_if;

4.end_if;

5.Watch TV;

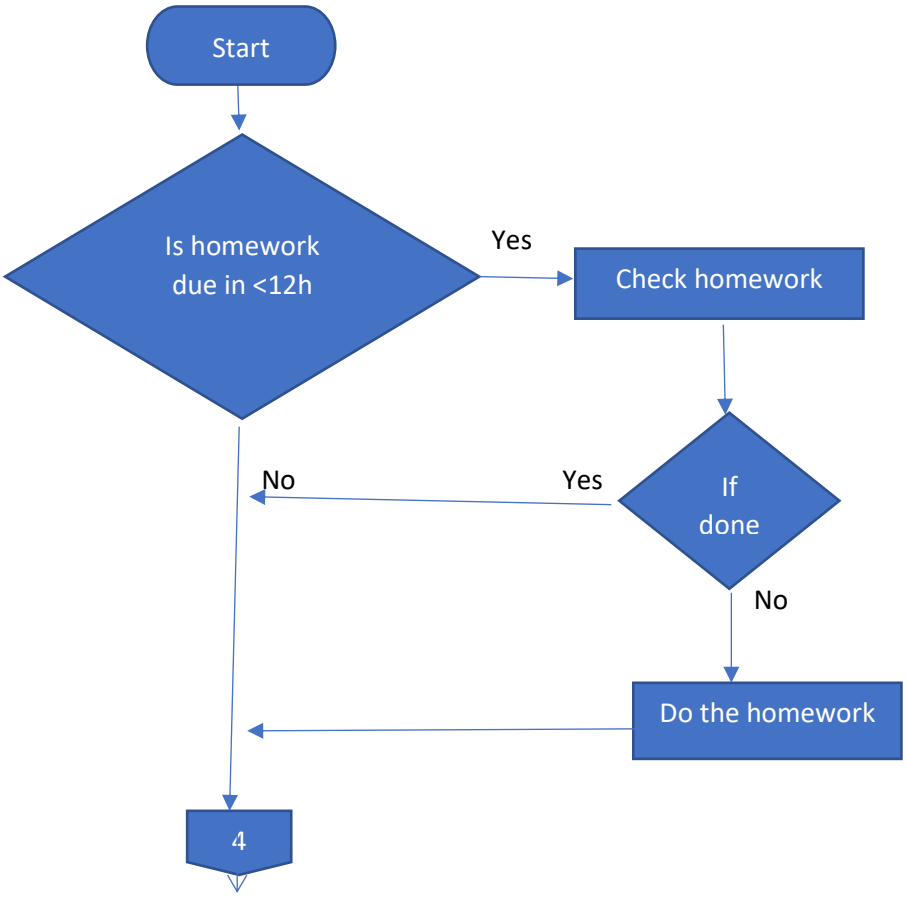
6. play video games;

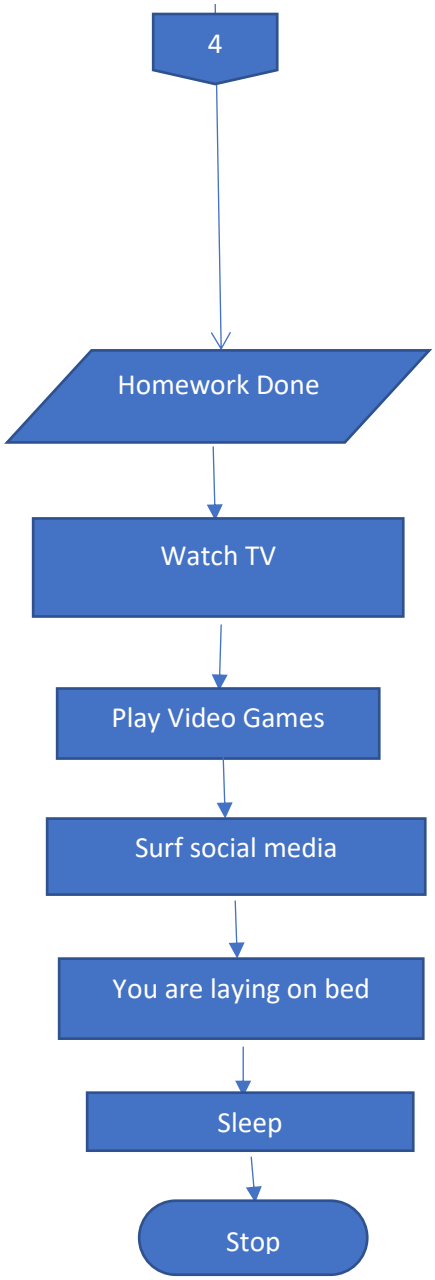
7.surf social media;

8. you are laying on bed;

9.sleep;

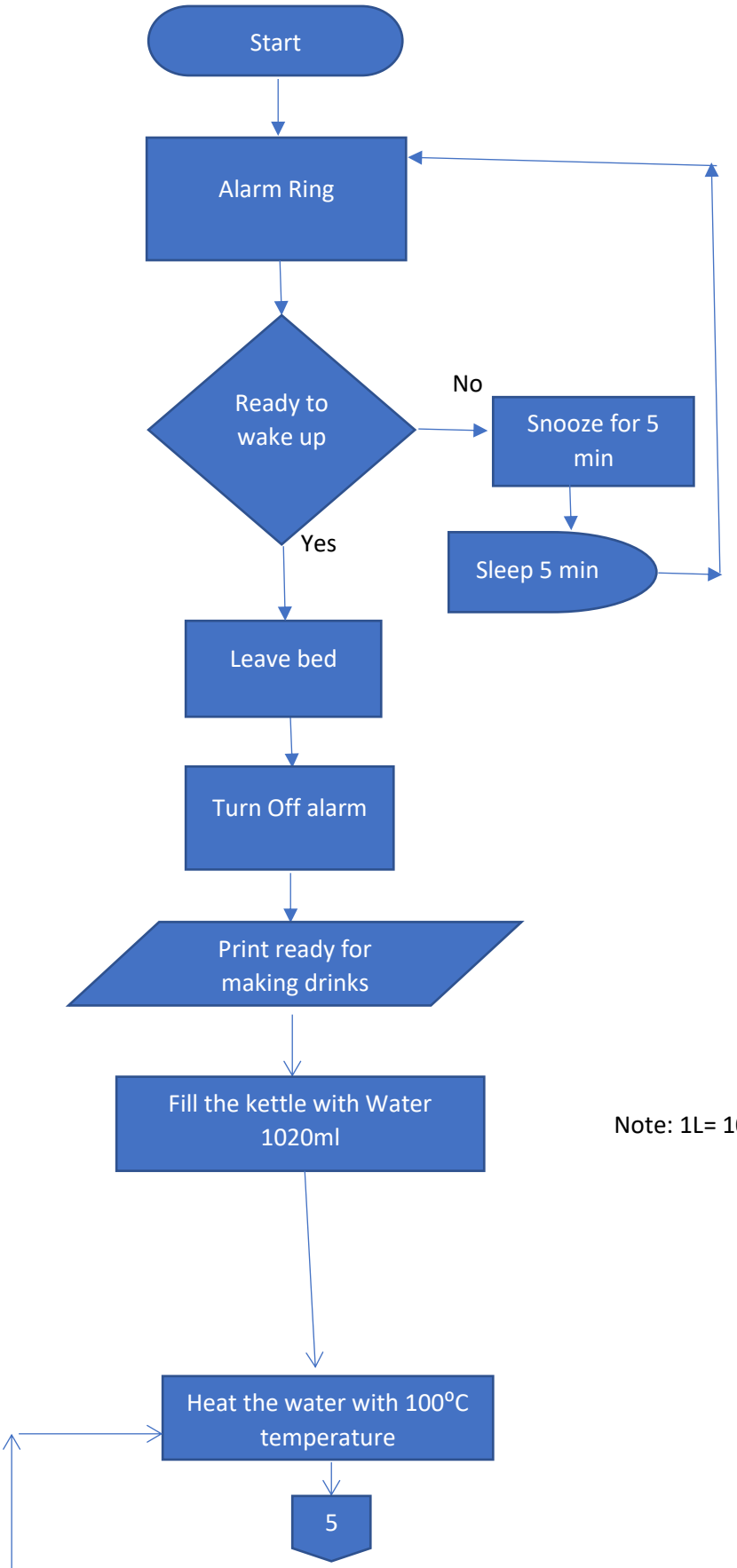
10.stop;



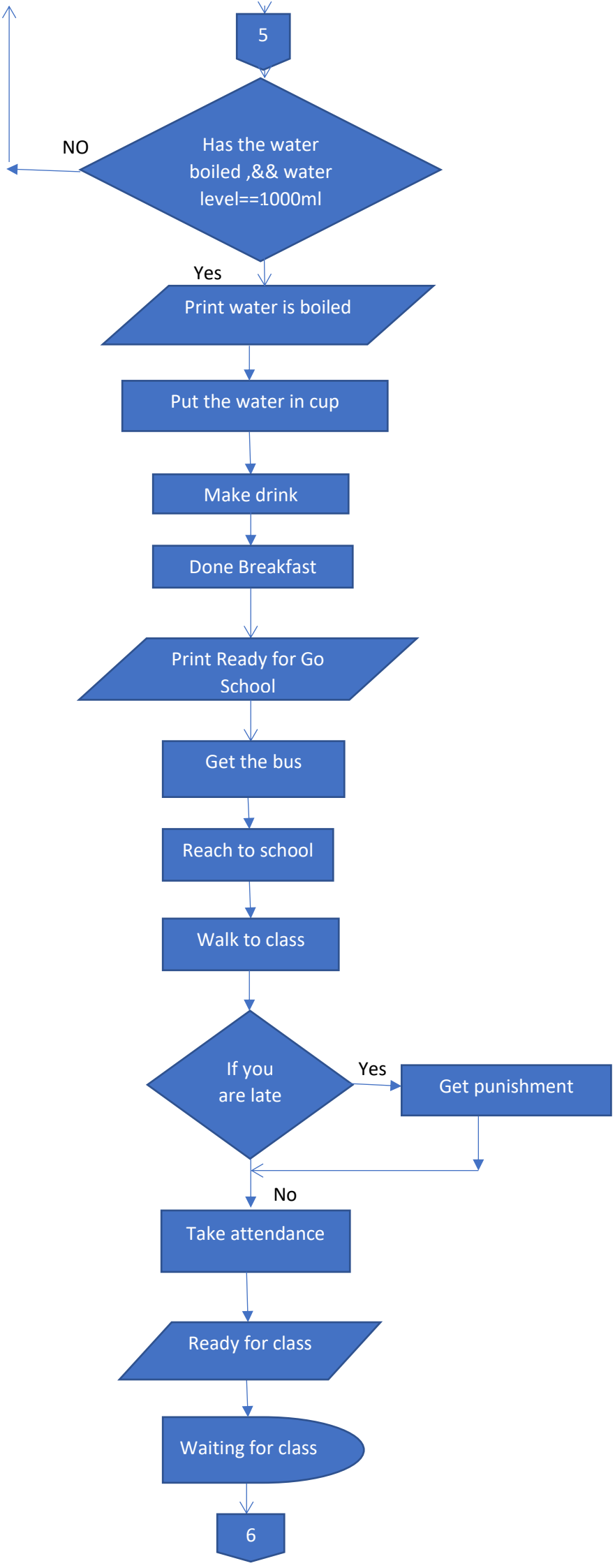

4
Homework Done
Watch TV
Play Video Games
Surf social media
You are laying on bed
Sleep
Stop

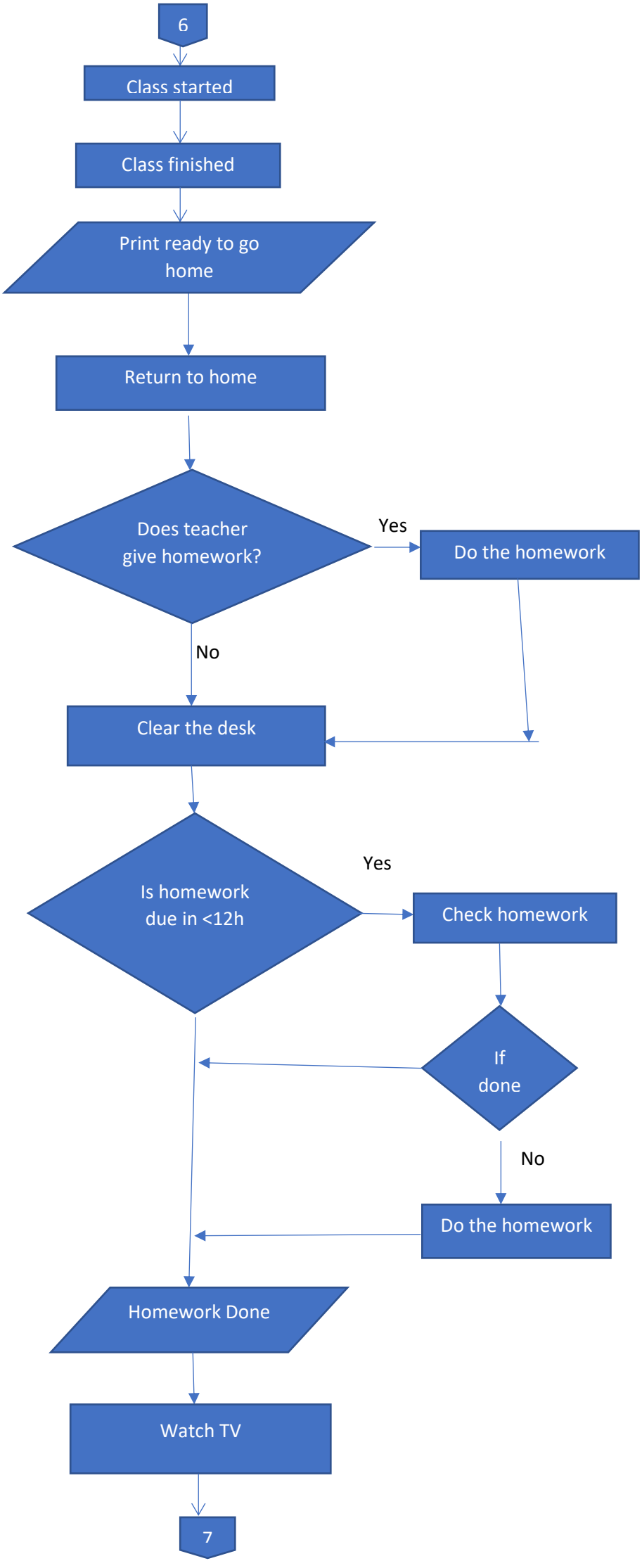
Part 5: Construct a complete logical flowchart according to Part 1, Part 2, Part 3, and Part 4. Joint all the Part 1, Part 2, Part 3, and Part 4 in a story line and in the logical flow.

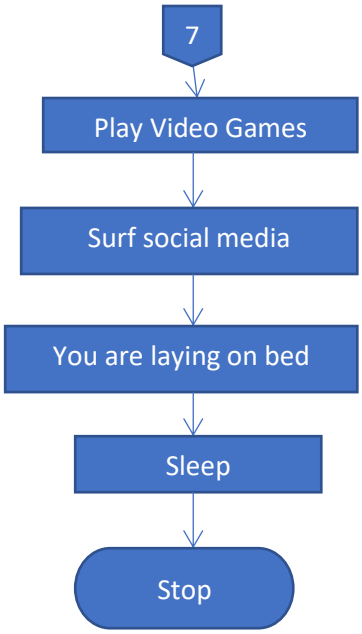
Ans:



Note: 1L= 1000ml


5
Has the water boiled ,&& water level==1000ml
NO
Yes
Print water is boiled
Put the water in cup
Make drink
Done Breakfast
Print Ready for Go School
Get the bus
Reach to school
Walk to class
If you are late
Yes
Get punishment
No
Take attendance
Ready for class
Waiting for class
6


6
Class started
Class finished
Print ready to go home
Return to home
Does teacher give homework?
Yes
Do the homework
No
Clear the desk
Is homework due in <12h
Yes
Check homework
If done
No
Do the homework
Homework Done
Watch TV
7


7
Play Video Games
Surf social media
You are laying on bed
Sleep
Stop