Jobsheet 2

# **Experiment 1**

## **Question**

1. Mention sequentially what you do after college like experiment 1 question-1!

**Answer :**

* I leave classroom
* Then go down to the first floor
* Then, I came home to be picked up by my brother
* After arriving home, I immediately took a shower and changed clothes
* Then, I have a dinner
* After that, I go to study
* The last stage, I going to sleep

1. Rewrite and complete the algorithm in Experiment 1 No. 2!

**Answer :** The sequence that matches the frog sport route is S-0-0-6-6-6-4-4-2-2-4-4-1. Explain the correct sequence as follows:

* From the start the frog jumps in the 0 direction
* Then jump again in the 0 direction
* Then the frog turns to the lily pad in the 6 direction
* Then jump again in the 6 direction twice
* Then the frog turns to the lily pad in the 4 direction
* Then jump again in the 4 direction
* Then the frog turns to the lily pad in the 2 direction
* Then jump again in the 2 direction
* Then the frog turns to the lily pad in the 4 direction
* Then jump again in the 4 direction
* The last stage, the frog turns to the lily pad in the 1 direction

1. Calculate mathematically the results of experiment 1 problem 3! What is the result?

**Answer :** Side = perimeter : 4 = 64 : 4 = 16m

Area = side x side = 16 x 16 = 256m

1. If there is additional information as follows

"Mr. Ahmad wants to plant a circular rose in the middle of his land. Pak Ahmad wants to maximize his land so that as much as possible there are only a few vacant lands. What is the area of Mr. Ahmad's land planted with Mawar flowers? "

Rewrite the steps for making the correct algorithm!

**Answer :**

Input : circumference of the land

Output : circular rose area

Other data : -

Process :

* Calculate the length of sides from Mr. Ahmad's land, Side = Perimeter : 4 = 64 : 4 = 16 m
* Calculate Circular rose area = side/2 x side/2 x π = 16/2 x 16/2 x 22/7 = 64 x 22/7 = 201,14 m

1. After additional data about question 4, what is the area of Mr. Ahmad's land that is not planted with roses?

**Answer :**  square area – circle area = 256 m – 201,14 m = 54, 86 m

# **Experiement 2**

## **Question**

1. Rewrite and complete the algorithm in experiment 2!

**Answer :**

Input : River, River connectivity information (For example, A is adjacent to B and D)

Output : Path of the entire river

Other Data : -

Process :

* Beaver is in the middle of several river meetings. He can swim from the river B / D / E / F / G
* If starting from **B** then the track that can be traversed by choosing river A or C.

If it crosses river A, then:

* River A continues to river D
* From D has the option to E / F / G river. If you choose F or G then it is possibility that one river must be crossed more than once. Then the river E was chosen
* From E, proceed to the connected and have same direction river, river H
* From the river **H** continued to the river that is connected and have same direction, there are **F-G-C**
* So the path Beaver goes through is B-C-G-F-H-E-D-A (output)

If it crosses river C, then:

* If it starts from D then the track that can be traversed is path A or E. Then the river E was choosen.
* If starting from E then the track that can be traversed is path H. Then through the river F.
* If starting from F then the track that can be traversed is path G.
* If starting from G then the track that can be traversed is path C.
* So the path Beaver goes through is B-A-D-E-H-F-G-C (output).

1. Write the algorithm of the regulation SP1, SP2, and SP3 at JTI Polinema as you know!

**Answer :**

Input : SP 1 = 18 jam

SP 2 = 36 jam

SP 3 = 47 jam

PS = 56 jam

Output : SP1, SP 2, SP 3

Other data : -

Process :

* If absent alpha ≥ 18 hours and ≤ 35 hours then the student is calculated SP 1
* If absent alpha ≥ 36 hours and ≤ 46 hours then the student is calculated SP 2
* If absent alpha ≥ 47 hours and ≤ 55 hours then the student is calculated SP 3
* If attendance ≥ 56 hours then students are counted PS
* Release SP information of all detected violations (output)

# **Experiment 3**

## **Question**

1. Mention the position that was detected wrongly in experiment 3 questions 2!

**Answer :** Bebras in position [3,4] should be in position [4,3]

1. Mention 5 activities that use the concept of repetition/looping that you have encountered!

**Answer :** Eat, ironing clothes, walking around, comb the hair, push up

# **Assignment**

1. Lina Otter has 6 stamps, as shown below:



Figure 6. Lina’s stamps

Using these stamps, Lina wanted to make a painting like in Figure 7.



Figure 7. The painting that Lina wanted

What sequence of stamps should Lina use to get a painting like the one above? Create the algorithm!

**Answer :**

Input : The stamp that has been provided

Output : The painting that Lina wanted

Other data : -

Process :

* First prepare the stamps
* Paste stamp number 6
* Then, paste stamp number 2 and continue with number 5
* Then, paste stamp number 4
* Then, paste stamp number 3
* And the last paste stamp number 1

1. Before answering the questions in the following questions, make the algorithm first! The townspeople of Beaver City love to ride the colorful bikes. The city government has registered all bicycle parts that can be ridden. They have also published a series of rules for assembling bicycles. Figure 8 shows how bicycle parts can be combined to make a bicycle. Bike building always starts with the wheel and then follows which arrows to follow to build the bike.



Figure 8. Bicycle color rule

In accordance with the above rules, which of the following bikes is unsuitable?



**Answer :**

Input : Bicycle rule

Output : Bicycle

Other data : -

Process :

* Choice of circuit 1 or 2
* If select series 1 then select frame 3 or 4
* If select series 1 then select frame 3 or 4
* But if you choose the selected series 4 then the selected saddle number 9
* Then if you want to choose a bicycle series number 2 then select the handlebar number 4
* If you choose the number 4 handlebar then the selected saddle is number 8

After the circuit that does not match is B

1. Do interviews with students in the same class (choose 10-15 students) as you! Record information about nickname, blood group, date of birth, month of birth, hometown, and hobby. Present the information in a network like the following example (free to use any networking media):

**Answer :**

**Balqiz**

Blood type : B

Date of birth : 24

Month of birth : July

Origin : Malang

Hobby : Jogging

**Wildan**

Blood Type : B

Date of Birth : 14

Month of Birth : June

Origin : Malang

Hobby : Dance

**Susila**

Blood Type : AB

Date of Birth : 11

Month of Birth : July

Origin : Kediri

Hobby : Traveling

**Ichsan**

Blood type : A

Date of birth : 18

Month of birth : February

Origin : Blitar

Hobby : Reading & Writing Article

**Haqi**

Blood type : A

Date of birth : 10

Month of birth : April

Origin : Malang

Hobby : Computer

**Shofwah**

Blood type : A

Date of birth : 10

Month of birth : February

Origin : Malang

Hobby : Digital Art

**Afiqah**

Blood type: O

Date of birth: 1

Monthh of birth: June

Origin: Palu

Hobby: Listening music

**Dhio**

Blood type : O

Date of birth : 23

Month of birth : February

Origin : Malang

Hobby : Reading

Information :

* Blue line : same origin
* Red line : same blood
* Green line : same month birth
* Purple line : same hobby
* Yellow line : same date birth

Then answer the following questions:

1. Who has the same blood type as you?

**Answer :** Wildan and Balqiz

1. Who were born in the same month as you?

**Answer :** Haqi

1. Who was born on the same date as you?

**Answer :** Afiqah

1. Who are from the same area as you?

**Answer :** Wildan, Balqiz, Shofwah, Haqi, and Dhio

1. Who has the same hobby as you?

**Answer :** Balqiz, Ichsan, Dhio, and Afiqah

1. A laundry service "Smile Laundry" has a fee rule like this one

* The fare for every 1 kg of clothing is Rp. 4,500.
* If the customer washes clothes more than 10 kg, the customer will get a 5% discount.

Today, Laundry only has 4 customers, namely Ani, Budi, Bina, and Cita. Ani brought 4kg of clothes, Budi brought 15kg of clothes, Bina brought 2kg, and finally Cita brought 11kg. What did Smile Laundry think that day? Create the Algorithm!

**Answer :**

Input : laundry 4 customers

Output : smile laundry income

Other data : -

Ani = 4 kg

Budi = 15 kg

Bina = 6 kg

Cita = 11 kg

diskon 5%

Ani = 4 kg × 4.500 = Rp 18.000

Budi = 15 kg × 4.500 = Rp 67.500 × 5% = 67.500 × 5/100 = Rp 3,375

Bina = 6 kg × 4.500 = Rp 27.000

Cita = 11 kg × 4.500 = Rp 49.500 × 5% = 49.500 × 5/100 = Rp 2,475

Total = 18.000 + 3,375 + 27.000 + 2,475 = Rp 45.005,85