

ASSIGNMENT 3 SEM 2 SESI 2020/2021

Group 1, 3, 5, 7, and 9, do question 1

#Group 2, 4, 6, 8, and 10, do question 2

QUESTION 1

Develop a program to calculate Vector

You need to consider the following requirements:

1. Ask the user to input two points: A(x1, y1, z1) and B(x2, y2, z2). Then calculate vector AB.

Display the vector in **equation** form. Calculate magnitude and vector unit.

2. Ask the user to input two vectors- vector P ($p_i + q_j + r_k$) and vector Q ($m_i + n_j + o_k$).

- Calculate $aP + bQ$ (ask user to input a and b)

- Calculate $P \cdot Q$ (scalar product)

- Calculate the angle between vector P and vector Q. Use the formula that you have learnt in the class

3. Provide the user with a menu.

QUESTION 2

Develop a program to calculate Vector

You need to consider the following requirements:

1. Ask the user to input two points: A(x1, y1, z1) and B(x2, y2, z2). Then calculate vector AB.

Display the vector in **component** form. Calculate magnitude and vector unit.

2. Ask the user to input two vectors: vector P ($p_i + q_j + r_k$) and vector Q ($m_i + n_j + o_k$).

- Calculate $aQ - bP$ (ask user to input a and b)

- Calculate $P \times Q$ (vector product)

- Calculate the angle between vector P and vector Q. Use the formula $|P \times Q| = |P||Q|\sin \theta$ that you have learnt in the class.

3. Provide the user with a menu