BINUS University

Academic Career:	Class Program:
*Undergraduate / ~~Master~~ / ~~Doctoral~~ *)*	*~~International~~/Regular/~~Smart Program~~/~~Global Class~~*)*
☑ Mid Exam ☐ Final Exam ☐ Short Term Exam ☐ Others Exam : _____	**Term : Odd/~~Even~~/~~Short~~ *)**
☑ **Kemanggisan** ☑ **Alam Sutera** ☑ **Bekasi** ☐ **Senayan** ☐ **Bandung** ☐ **Malang**	**Academic Year :** **2020 / 2021**

Faculty / Dept.	: School of Computer Science	Deadline	Day / Date : Friday/ Nov 13th, 2020
			Time : 17:00
Code - Course	: COMP6590 - Geographical Information System	Class	: All Classes
Lecturer	: Team	Exam Type	: Online
*) *Strikethrough the unnecessary items*			
The penalty for CHEATING is DROP OUT!!!			

A. Essay (25 points)

In order to understand how an information system (IS) as a "simple" computer-based system can represent the real world from the "complex" surface of the earth using a geographical information system (GIS), answer the following questions in detail.

1. State and explain data models, spatial processes (geo-processing) and the output of a GIS in the context of an information system consisting of input - process - output **(10 points)**
2. Make a schematic description of the conception of real-world transformation into a computer system in a GIS including geographic objects, entity representations and data models from a GIS **(15 Points)**

B. Case Study (75 Points)

Currently, DKI Jakarta is one of the provinces with the largest number of positive cases of Covid-19 in Indonesia. One of the efforts of the DKI Provincial Government to overcome the impact of a pandemic is through the provision and management of data based on a geographic information system (GIS) as can be seen in several sources as follows:

https://jakartasatu.jakarta.go.id/portal/apps/sites/?fromEdit=true#/public/pages/service-api

https://corona.jakarta.go.id/id/peta-persebaran

https://riwayat-file-covid-19-dki-jakarta-jakartagis.hub.arcgis.com/

Using a variety of data available from the above sources (and other possible sources) and using geographic information system software:

1. Create a kelurahan spatial database in DKI Jakarta Province for 3 months of data (July, August, September) which consists of village boundary maps, number of Covid-19 suspects per urban

village and distribution of health facilities (Puskesmas and Hospitals) in DKI Jakarta and **(35 points)**.

Show the results of the database arrangement in the form of a print screen map and data attributes

2. Based on the spatial database created, state the <u>spatial objects</u> that are represented and the <u>data models</u> stored in the database **(10 points)**

3. Make and display a map (July, August and September) of the number of Covid-19 suspects per urban village and the distribution of health facilities (Puskesmas and Hospitals) in DKI Jakarta based on the results of database processing **(10 points)**

4. Based on the resulting map, describe the pattern and trend of changes in the number of suspected covid 19 per urban village in DKI Jakarta **(10 points)**

5. Make a description of the <u>spatial relationship</u> between the <u>number of Covid-19 suspects</u> and the <u>availability and distribution of health facilities</u> in DKI Jakarta **(10 points)**

-- Good Luck --

Verified by,

Kristien Margi Suryaningrum - D6414 and sent to Program on Oct 20, 2020