

GIS Design: Summary Discussion

Discussion Questions: (100 Points)

In this exercise, you are going to discuss the overall progress of the design of a GIS that you have made through the first 8 exercises.

Learning Objectives (when completed the student will be able to...)

1. Intelligently discuss the overall process of GIS design prior to the development of the final Review and Procedure Planning & Benchmarking operations.

PART I.

Review the summary of the Fire Response information product description below. You'll use this information to answer the questions in the next step.

Title:	Fire Response Information Product
Required by:	Fire Department
Name:	S. Howard

Summary:

Firefighters will use this information product to respond to reported fires. First, they need a map. The map must show the location of the fire as well as the hydrants that can be used as water sources to fight the fire. The map must also include an inset showing an overview of the city. In addition to a map, firefighters require an inspection report for all the hydrants surrounding the fire, so that they can decide on the best hydrants to use. They will also need images and floor plans, if available, for any buildings on the property where the fire is reported.

Answer the following questions: see the information from the fire response information product (originally provided in module 3) to answer the questions below. Refer to exercise 3 if needed.

1. What information and data will you provide to prospective vendors before the benchmark test?

The data will basically be a layer with the layout of the city. There also will be a layer that has all of the floor plans and layout if available of any building and property that the building resides on where the fire is. The information provided would be a page (or couple) of all of the hydrants in the area where the fire might be. Another important factor will be a scenario of where the fire is.

2. What will you ask vendors to demonstrate at the time of the benchmark test? What information will you need to do this?

The vendors need to demonstrate that the map and accompanying information needs to be done rather quickly. The information needed will be the wait tolerances. This will show how fast the products need to be generated, the accuracy of the products, and also the importance of each information product. A key thing to note is that the scenario of where the fire is at should be random. Also noted is that the vendor should be timed as soon as the vendor is told where the fire is at. Another thing is that there should be available hydrants shown on the map exactly where the fire is.

3. What functionality will you be testing?

Functionality will be about the amount of time it takes to get the products together. Obviously it needs to be done extremely fast and also a big thing to focus on is the network function and possibly nearest neighbor. This needs to be executed quickly because it shows the shortest route from the fire station to the fire and also the correct fire station if there are multiple fire stations.

4. What output products would you like displayed at the benchmark?

One, possibly two maps with layout of the city, the fire station selected, the shortest route to the fire, and the available hydrants around the fire. If possible, it would be helpful for the vendors to show that they are able to handle the size of the dataset with regards to floor plans and building layouts as well as hydrant information.

PART II.

Design a benchmark test for an information product required by the Valles Caldera.

Design a benchmark test to evaluate the ability of different systems to produce an information product for your own organization. First, decide which information product you will consider. Then, answer the same four questions as above: Information product used will be the controlled burn analysis product.

1: What information and data will you provide to prospective vendors before the benchmark test?

Data will be the layout of Valles Caldera, and if available, the data from remote sensors (NDVI, dryness, wetness, bare soils, etc.). A possibility will be the areas where there have been fires reported on another layer.

2: What work will you ask vendors to do at the time of the benchmark test? What will you have to observe and measure?

Have to observe and measure how long it takes for the system to perform each function. Observe how to perform the functions and figure out which functions are required and also the number of times each function is used. Provide acceptable wait tolerances that the vendor should try to meet.

3: What functionality will you be testing?

The amount of time it takes to perform each function. Another possibility is to incorporate remote sensing software that could be used in other information products.

4: What output products will be displayed at the benchmark?

Map of proposed burn areas and possibly a map of recent forest fires. These could be combined with just an inset of recent forest fires to help compare the proposed areas to the actual forest fires.

Part III.

Thought Question:

Answer the following question:

1. Provide a short succinct, but precise paragraph that describes your feelings regarding the importance or lack thereof of doing benchmarking in GIS design. Give some specific examples from your assignment and/or from the Valles Caldera information products at large.

There is a definite importance to doing benchmarking in GIS design. It helps provide us with information on how fast the product will be made, hopefully the right hardware and software that will be required to perform, and also planning for change. It will be extremely helpful to go to different vendors and compare and contrast what each vendor has to offer. It is important to note that the testing information should be the same for each vendor so that comparing and contrasting will not be influenced based on different datasets and time frame. An example would be sending a proposed burn analysis test to one vendor and then sending something like defining archaeological sites to another vendor. The products will be completely different, be done differently, and the amount of time it will take should be different as well. It might take a shorter amount of time to run a proposed burn analysis, but the same system might take longer to do archaeological sites.

RENAME THIS DOCUMENT TO "MYNAME_EXERCISE_09" and return it via the assignment tool.

GRADING:

Part I & II answers: 10 points per correct answer

Part III answer: 20 points (insightful = 20 points), (correct but not showing much insight = 15), (correct but with little effort or examples = 10), (marginally correct = 5).