

**King Fahd University of Petroleum and Minerals**

**College of Environmental design**

**City and Regional Planning department**

**CRP 514 Geographical Information System**

***Representing KFUPM in various forms of  
Services using ArcGIS***

**Being a Term project presentation**



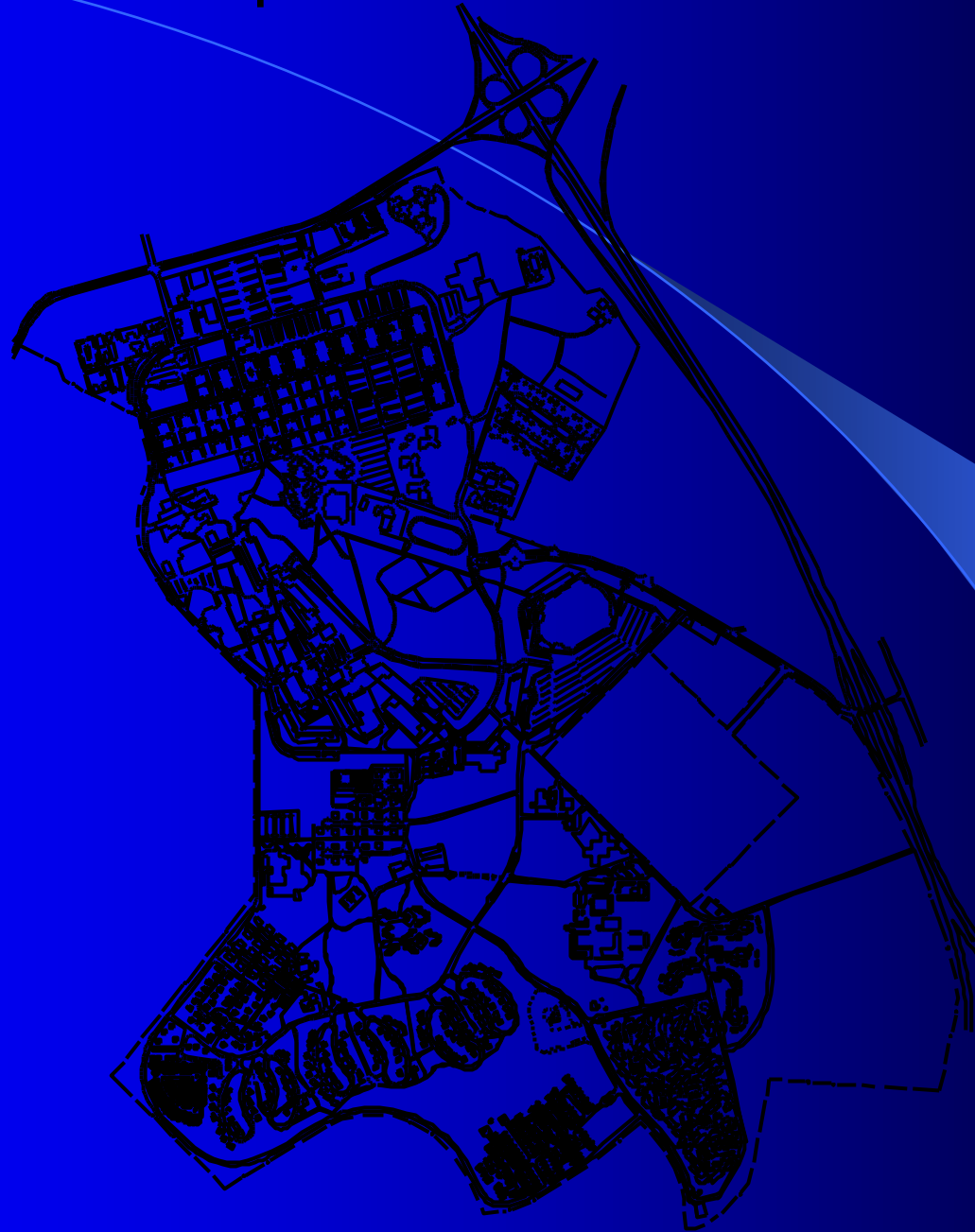
**Presented to**

**Dr. Baquer Al Ramadhan**

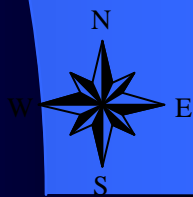
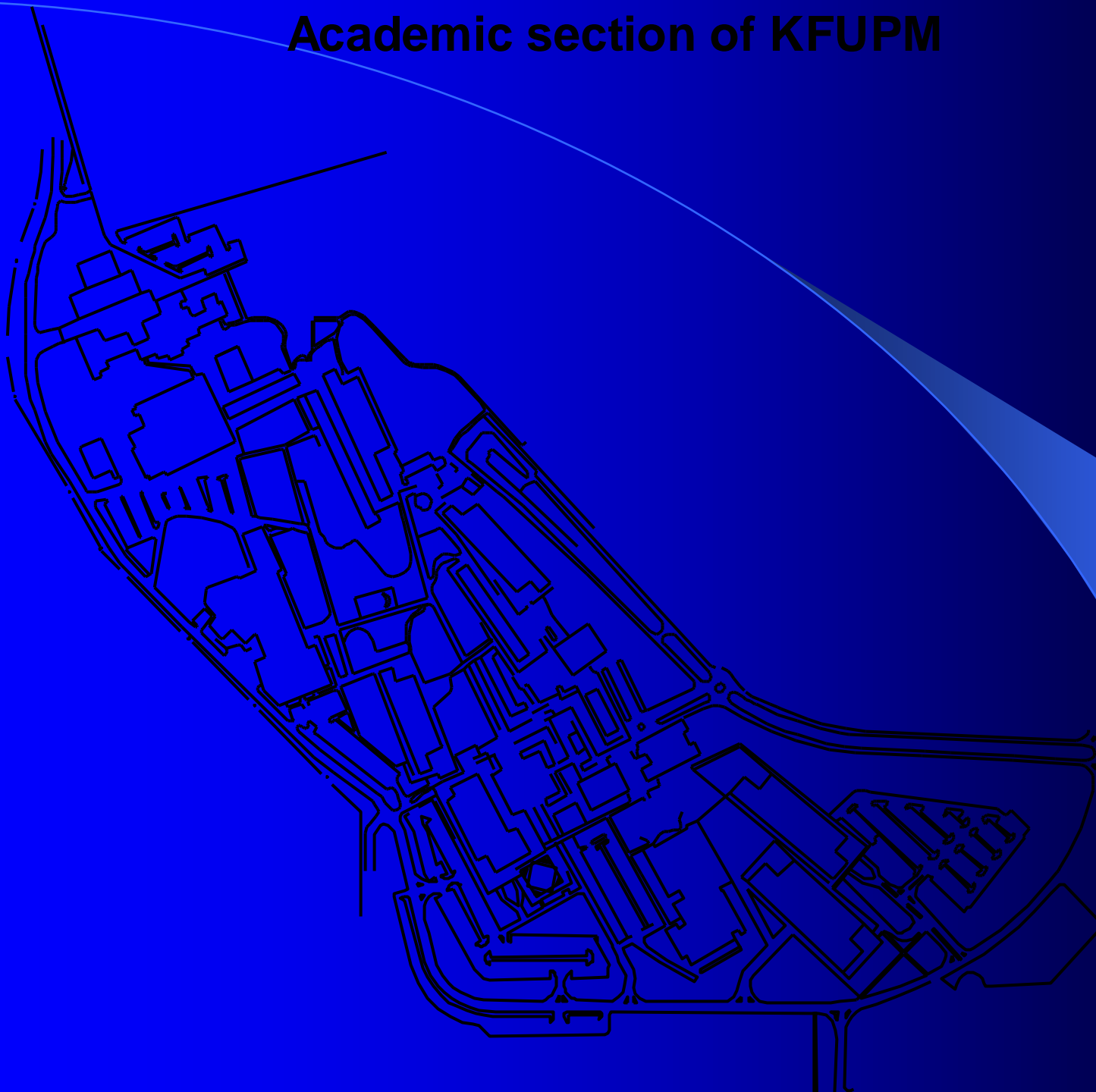
**By**

**Syed Mohammed Ashfaq Hussain**

# Total campus of KFUPM



# Academic section of KFUPM



# **Introduction**

- **To provide something better than the existing should be the main concern of a planner. Since long time people have studied the world using models such as maps and globes**
- **From the last 3 decades it has become possible to put these models into computers along with the tools to analyze them in the form of Geographical Information systems**
- **King Fahd University of Petroleum & Minerals is located in Dhahran, between the headquarters of the Saudi Arabian Oil Company (SAUDI ARAMCO) and the Dhahran Air Base**

- **The campus is situated near the Arabian Gulf at a distance of about seven Kms from the town of Al-Khobar**
- **The port city of Dammam, capital of the Eastern Province, is only 20 kilometers away and the oil refinery at Ras Tanura is 70 kilometers from the campus**

## **Background Information about the area of study**

- **The academic buildings are located on a 100-foot mountain which forms the main attraction**
- **The 900 acres of the University are divided into three Sectors: North, Central, and South.**

➤ **The North Sector consists of the Preparatory Year Campus, the North Staff housing compound, and the student dormitories**

➤ **The Central Sector contains all the academic facilities: classrooms, laboratories, faculty offices, the University administration, the Research Institute, the Library, the Information Technology Center, and many support facilities**

➤ **The South Sector contains faculty and senior staff housing**

# **Geographical Information System**

**Geographic Information system is a system of hardware and Software that supports the capture, management, manipulation, analysis and display of geographic information**

**Geographical information system technology has developed so rapidly over the past two decades that it is now accepted as an essential tool for the effective use of geographic Information**

**The recent and widespread introduction of the GIS has created a sudden need for users of geographic information to become knowledgeable about this technology**

# Introducing the software

- Environmental research system institute located in New York, USA as the vendor of products like ArcView, ArcInfo and ArcGIS has created havoc in the world of GIS
- ArcGIS is a comprehensive, integrated, scalable system designed to meet the needs of a wide range of GIS users. The three desktop GIS components of ArcGIS are ArcView, ArcEditor and ArcInfo
  - ArcView
  - ArcEditor
  - ArcInfo



➤ **ArcView** includes **ArcCatalog**, **ArcMap** and **ArcToolbox**, which allow you to browse, manage, analyze, edit, and document your data

➤ **ArcEditor** has all the functionality of **ArcView** plus powerful tools for editing coverages and geodatabases

**ArcInfo** includes all the capabilities of **ArcEditor** plus additional geoprocessing tools and a full version of **ArcInfo Workstation** (comprised of **ARC**, **ArcEdit**, **ArcPlot<sup>TM</sup>**, **INFO**, and **ARC Macro Language**)

➤ For this study **ArcCatalog** and **ArcMap** were used to work

## **Methodology**

- **The base maps of KFUPM Total-campus and Academic-campus were digitized and worked on with**
- **The area of study was classified in various forms of its services**
- **The basic purpose of working on two maps was the existence of the academic campus as a separate entity in itself**
- **The academic-campus map was worked for its different areas of Parking, Studies, Activities, Administrative and Services. Along with that layers for Greenery, Historical areas and Lakes were added just to give some aesthetic view to the representation**

➤ **The academic-campus map was worked for its different areas of**

▪ **Parking**

▪ **Studies**

▪ **Activities**

▪ **Administrative**

▪ **Services**

▪ **Greenery**

▪ **Historical areas**

▪ **Lakes**

➤ **The Total-campus map was worked on for its different areas of**

- **Parking**
- **Residential areas**
- **Services**
- **Vehicular Roads**

- **The attribute table was created and data was inserted in it for the relevant features**
- **There was a shortage of data and hence some sort of hypothetical data was used to generate analysis**
- **Here I added the hypothetical values for the areas for the some of the features**
- **Classification was done depending upon the requirement**
- **Finally some analysis have been done and presented in charts format**

# Classifying features by standard methods

There are six classifying methods:

➤ **Natural breaks**

➤ **Equal interval**

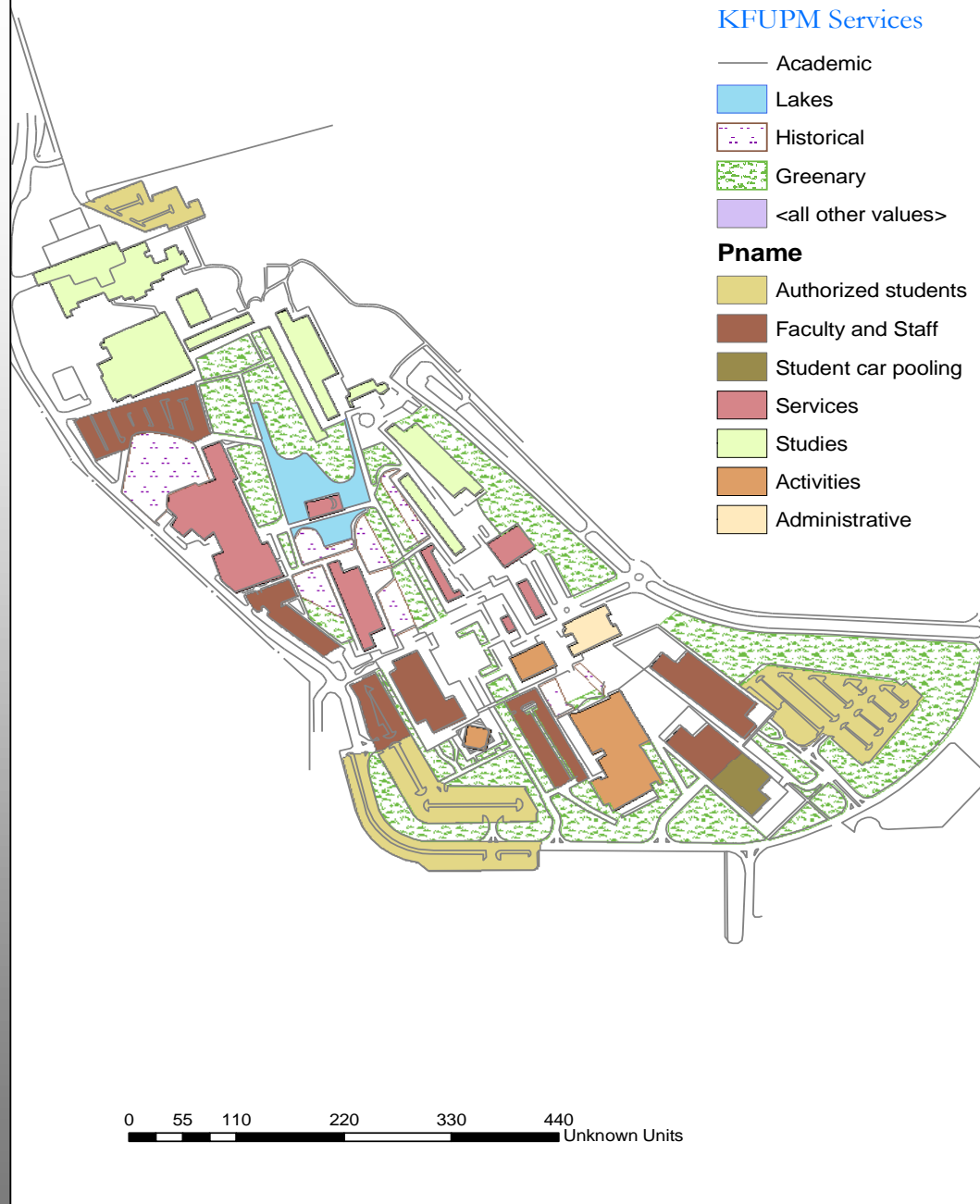
➤ **Defined interval**

➤ **Quantile**

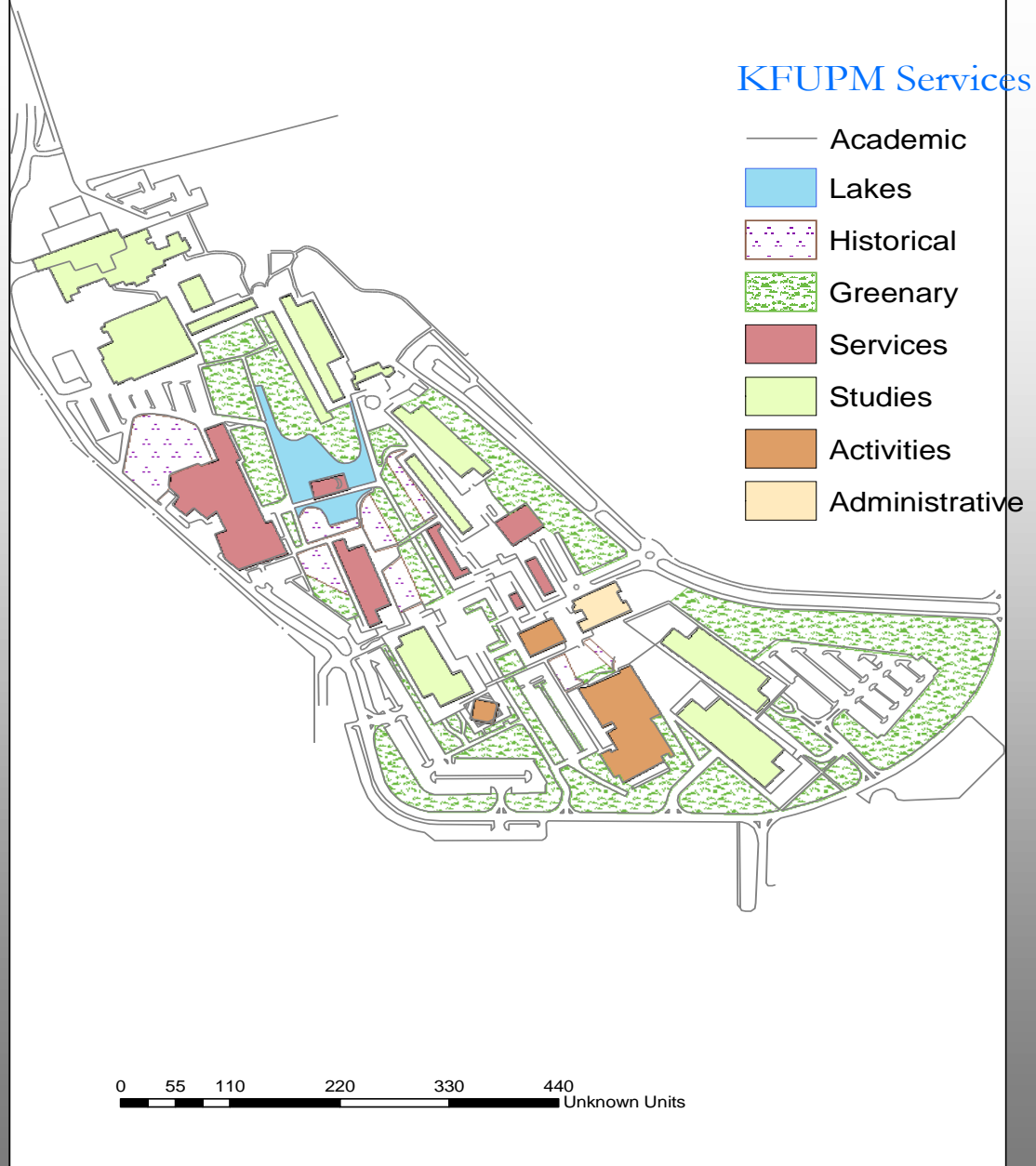
➤ **Standard deviation**

➤ **Manual method**

# KFUPM Academic Section in various forms of Services

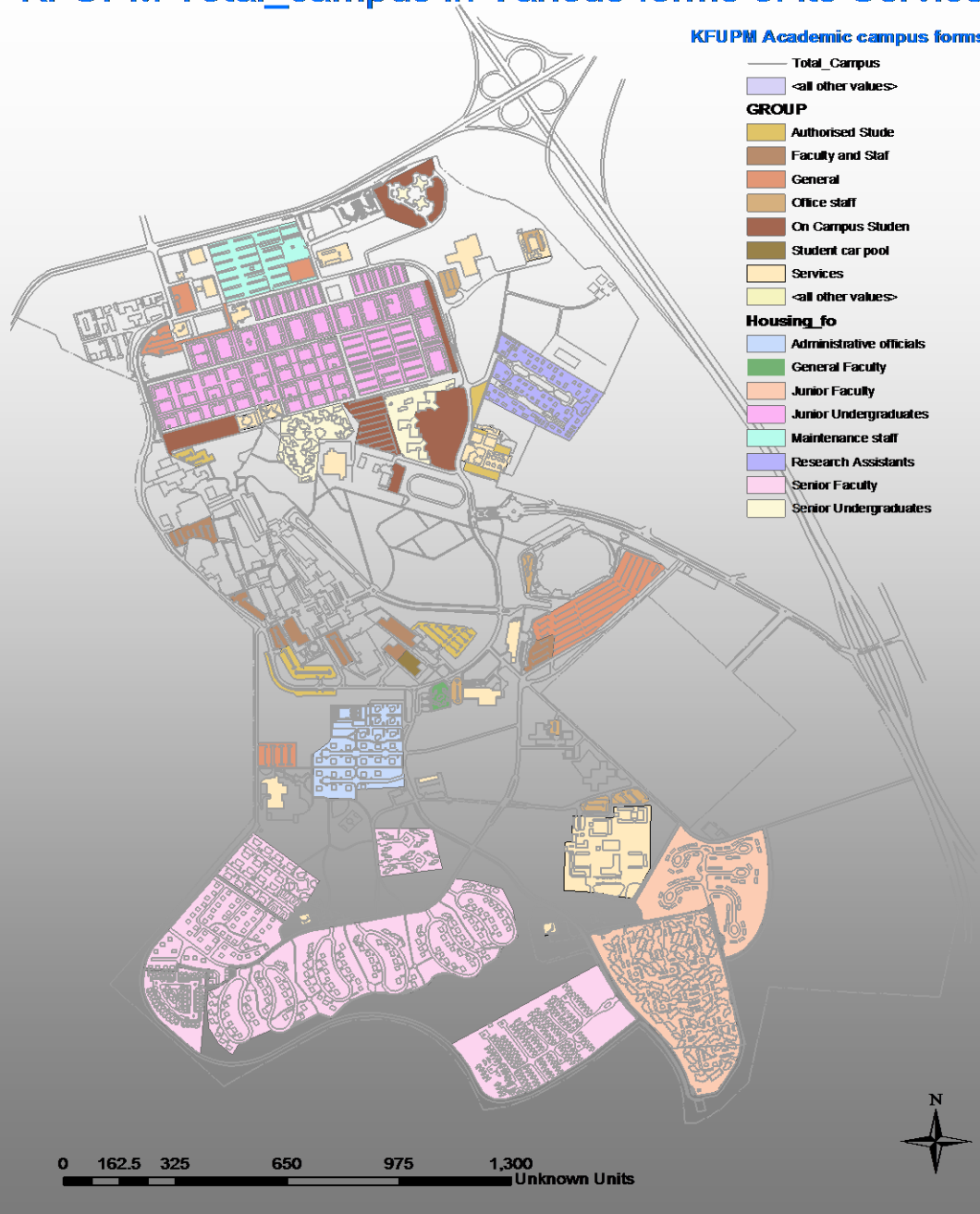


# KFUPM Academic Section in various forms of Services

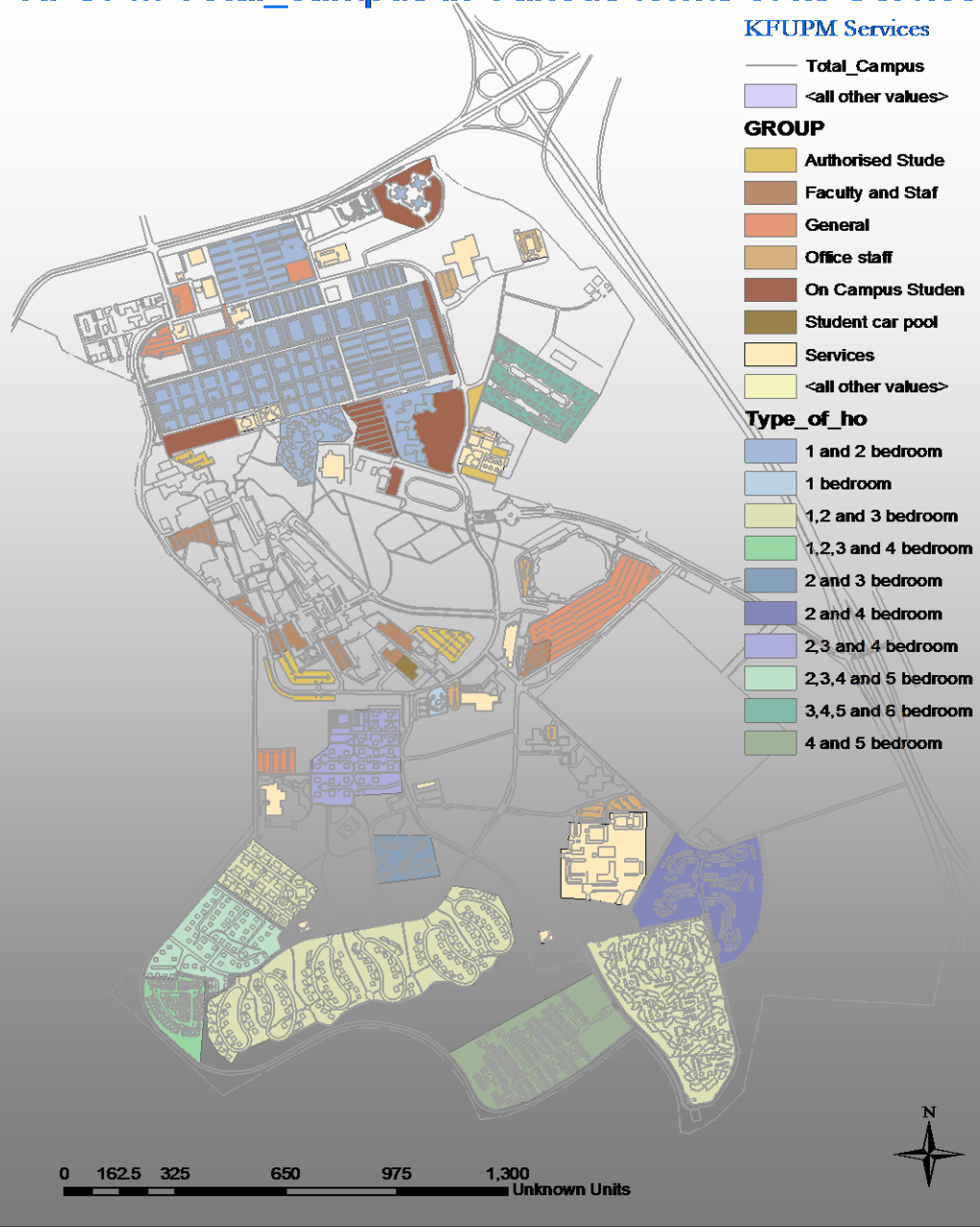




# KFUPM Total\_campus in Various forms of its Services



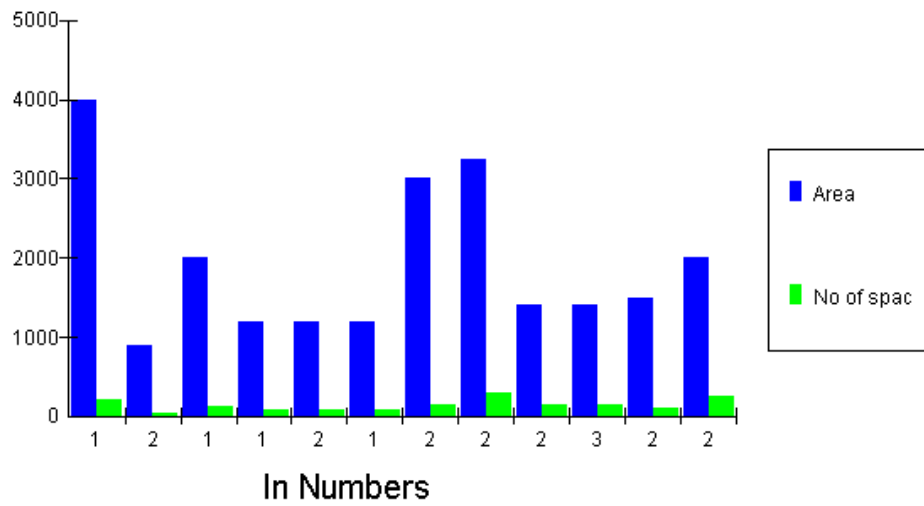
# KFUPM Total\_campus in Various forms of its Services



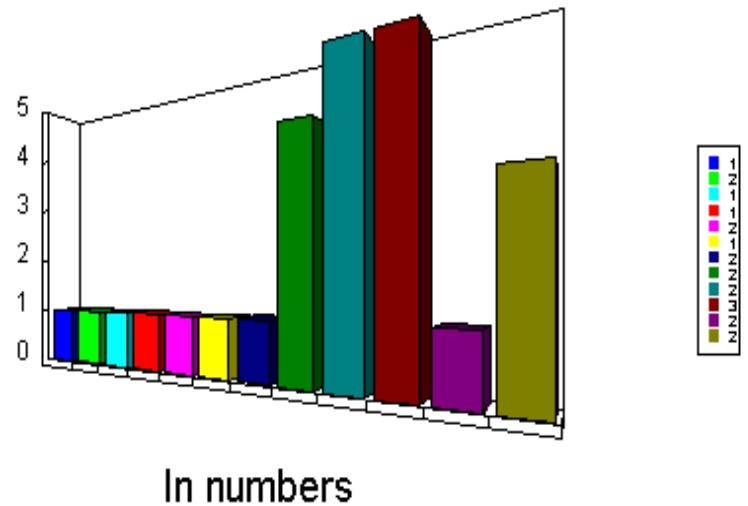
## References

- **Getting to Know Desktop ArcGIS**
- **Hand-outs provided by Dr. Baquer Al-Ramadhan**
- **[www.esri.com](http://www.esri.com)**
- **GIS: A Management Perspective by Ston Aronoff**

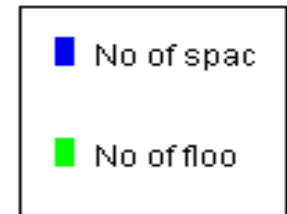
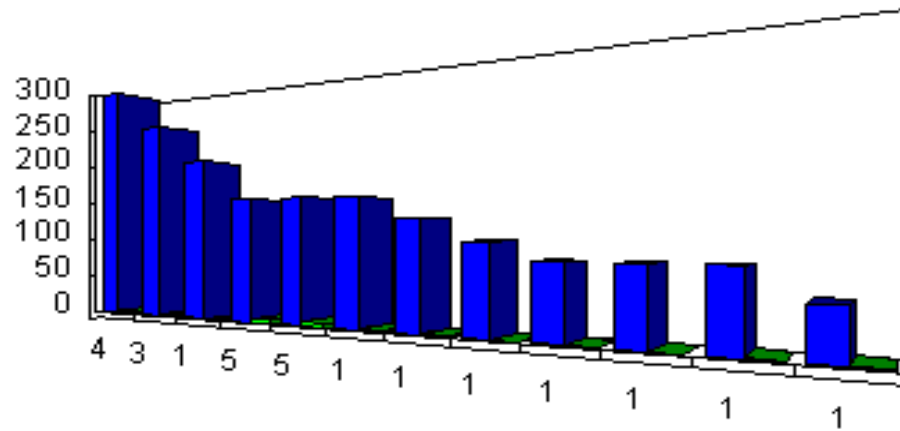
### Graph of Parking



### Number of Floors

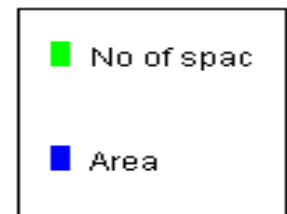
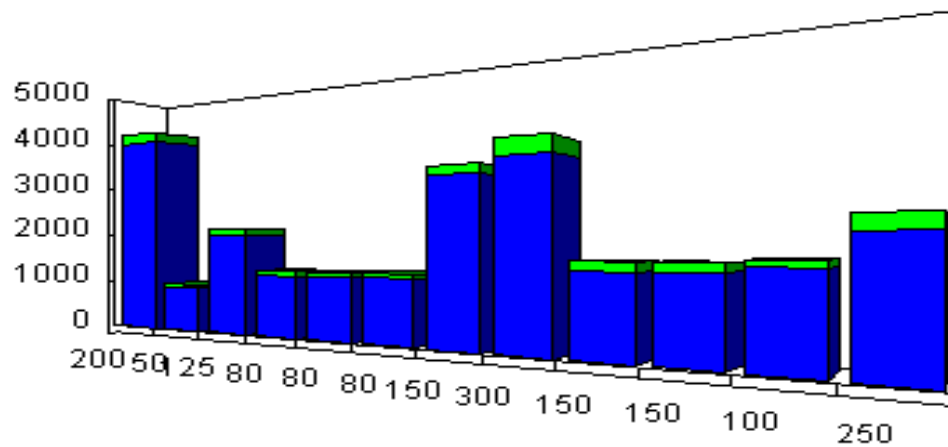


## Graph of Parking



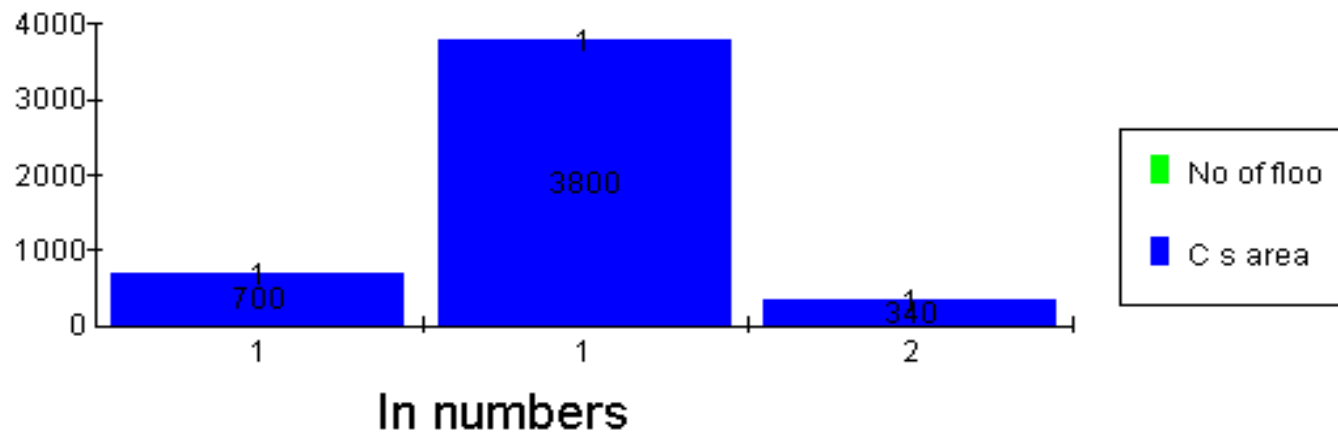
In numbers

## Graph of Parking

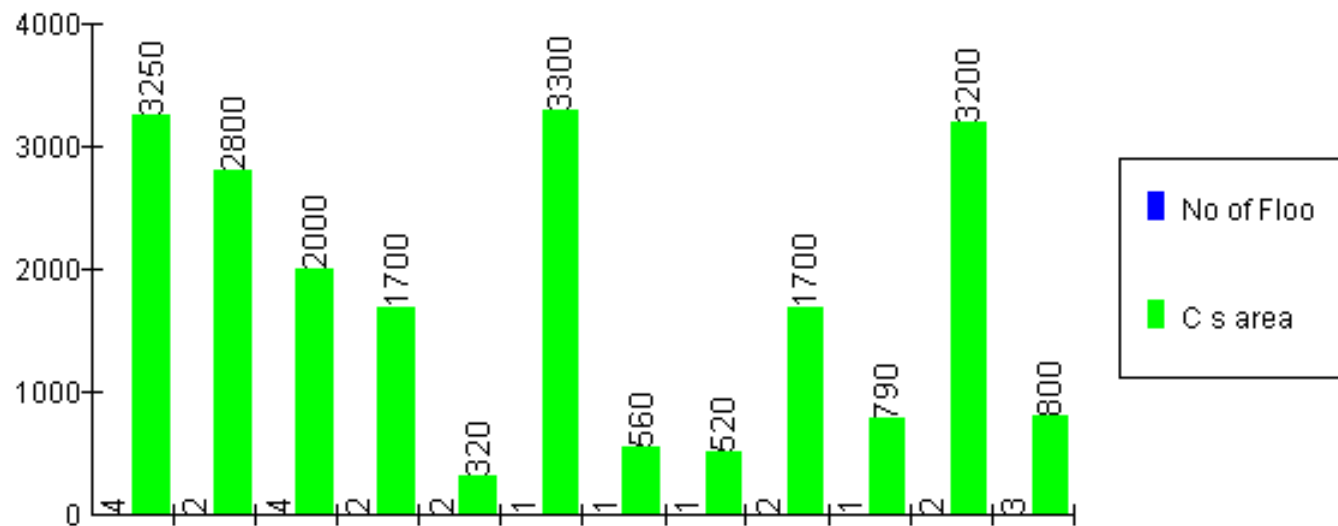


In numbers

## Graph of Activities



## Graph of Studies



# Acknowledgements

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# Thanking You

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