

**National College of Ireland**

**Masters in Science in Data Analytics – Full-time – Year 1 – MSCDAD\_A / MSCDAD\_B  
Postgraduate Diploma in Science in Data Analytics – PGDDBS1**

**Semester Two Examinations – 2017/18**

**Wednesday 16<sup>th</sup> May 2018  
2.00pm – 4.00pm**

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**Data Visualization**

Dr. Geraldine Gray  
Mr. Stephen Redmond  
Mr. Noel Cosgrove  
Dr. Eugene O'Loughlin

Answer all three questions.

**Duration of exam:** 2 Hours

**Attachments:** Hurricane Katrina Chart, Blank Sketch Sheet.

Calculators are permitted in this exam.

- 1) Discuss the three principles of good design as articulated by Andy Kirk (2016). Use detailed examples from the literature to illustrate your answer.  
(20 marks)
- 2) Given the following data, outline how you would prepare an Infographic to tell a story about homelessness in Ireland. In your answer you should sketch out your plan for the infographic and discuss how colour can be used to enhance your story.

**Details of households accessing local authority managed emergency accommodation during the week of 22 – 28 January 2018 in Dublin**

REGION	HOMELESS ADULTS	GENDER		AGE GROUPS				ACCOMMODATION TYPE *			
		Male	Female	18-24	25-44	45-64	65+	PEA	STA	TEA	Other
Dublin	3919	2194	1725	609	2447	792	71	1631	2279	67	0
Mid-East	290	171	119	46	163	77	4	153	114	23	0
Midlands	78	43	35	17	47	13	1	38	40	0	0
Mid-West	372	207	165	53	227	83	9	88	247	47	0
North-East	155	90	65	28	91	31	5	101	51	3	0
North-West	53	38	15	3	28	20	2	5	23	13	12
South-East	354	235	119	51	196	97	10	117	197	4	36
South-West	375	245	130	52	226	88	9	197	196	0	0
West	241	152	89	32	144	60	5	94	111	35	4
<b>TOTAL</b>	<b>5837</b>	<b>3375</b>	<b>2462</b>	<b>891</b>	<b>3569</b>	<b>1261</b>	<b>116</b>	<b>2424</b>	<b>3258</b>	<b>192</b>	<b>52</b>

*Data Source: The Department of Housing, Planning & Local Government Homelessness Report (2018).*

PEA - Private Emergency Accommodation: this may include hotels, B&Bs and other residential facilities that are used on an emergency basis  
 STA - Supported Temporary Accommodation: accommodation, including hostels, with onsite professional support  
 TEA - Temporary Emergency Accommodation: emergency accommodation with no (or minimal) support

**Family homelessness in Dublin during the week of 22 – 28 January 2018**

Region	Total Families	Total adults	(of which) single parent families	Total dependents
Dublin	1191	1658	724	2509
Mid-East	33	46	20	90
Midlands	18	25	11	38
Mid-West	75	110	40	153
North-East	52	73	31	101
North-West	2	3	1	7
South-East	44	64	24	78
South-West	63	84	42	165
West	39	59	19	126
<b>TOTAL</b>	<b>1517</b>	<b>2122</b>	<b>912</b>	<b>3267</b>

(40 marks)

- 3) Examine the Hurricane Katrina visualization provided, and answer the following questions:
  - a) What pre-attentive attributes are demonstrated in this chart? Explain your answer.  
(20 marks)
  - b) Determine which Gestalt Principles are used and illustrate how you can tell that they are used.  
(20 marks)

# RECOVERY BY THE NUMBERS SINCE HURRICANE KATRINA

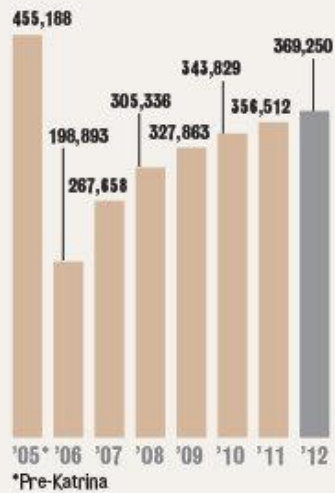
## POPULATION

### METRO AREA



Sources: GCR and Associates, Greater New Orleans Community Data Center and U.S. Census Bureau

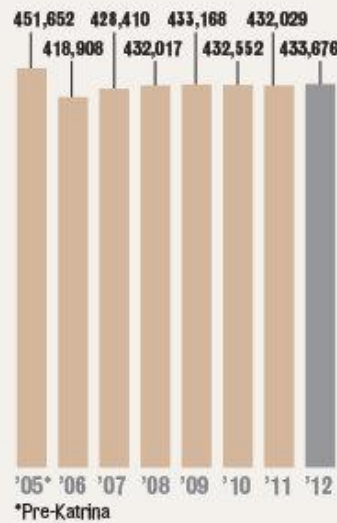
#### Orleans Parish



Change from pre-Katrina to 2012

-18.9%

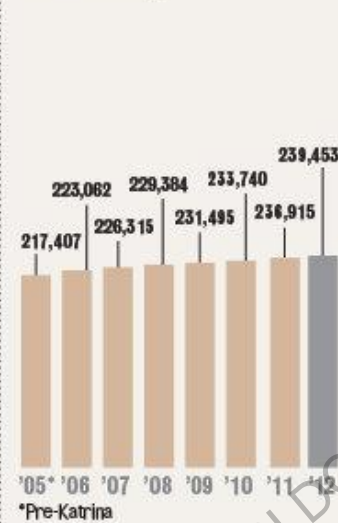
#### Jefferson



Change from pre-Katrina to 2012

-4%

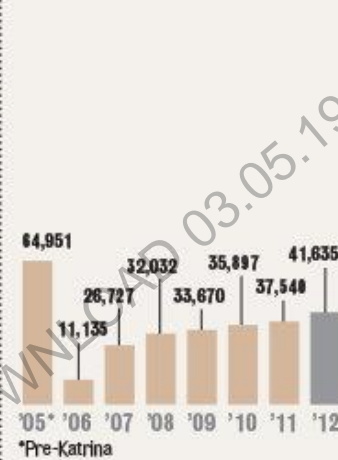
#### St. Tammany



Change from pre-Katrina to 2012

+10.1%

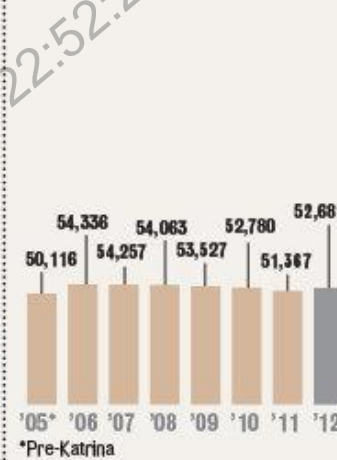
#### St. Bernard



Change from pre-Katrina to 2012

-35.9%

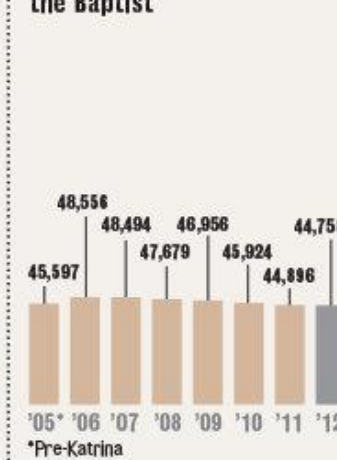
#### St. Charles



Change from pre-Katrina to 2012

+5.1%

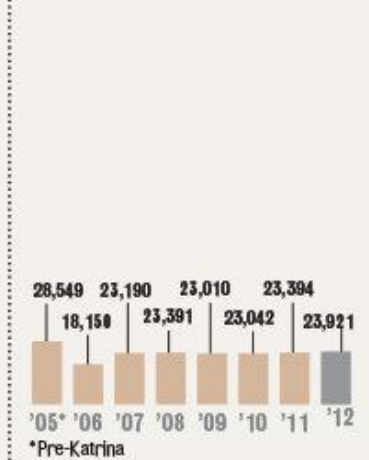
#### St. John the Baptist



Change from pre-Katrina to 2012

-1.8%

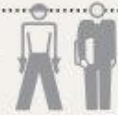
#### Plaquemines



Change from pre-Katrina to 2012

-16.2%

## UNEMPLOYMENT



Note: Figures are from July of each year, except the 2011 number for metro area, which is a June estimate. Source: GNOCDC compilation from U.S. Bureau of Labor statistics and local unemployment data

#### NEW ORLEANS METRO AREA

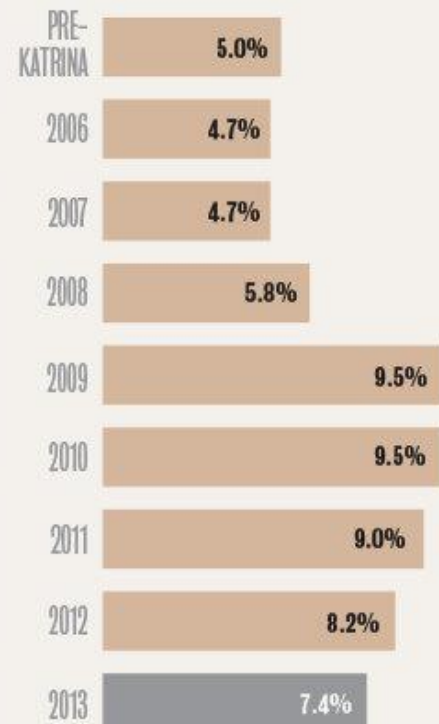


Change from pre-Katrina to 2013

+2.6

Pct. points

#### U.S.



Change from pre-Katrina to 2013

+2.4

Pct. points

## ADDRESSES RECEIVING MAIL BY PARISH



Note: 2013 figures are for July. Source: Greater New Orleans CDC

#### ORLEANS PARISH



Change

-11.9%

#### JEFFERSON



-1.8%

#### ST. TAMMANY



+14.4

#### ST. BERNARD



-38.4%

#### ST. CHARLES



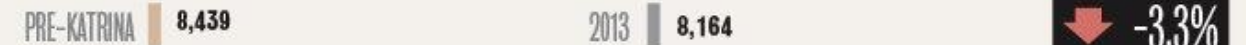
+11.3%

#### ST. JOHN THE BAPTIST



+9.5%

#### PLAQUEMINES



-3.3%