Hope IT - Data Analysis - February 2021:

Week 1:

Objectives:
1) Realize data is real
2) Sampling of data
3) Data tells a story
4) Open Google Sheets
5) Begin to use Google Data Studio - build your first dashboard

1) Introductions

2) Prayer

3) Key ideas:
   a) How data will change your decisions
   b) Data exploration: What do we have
       i) Data exploration is cheap
       ii) Data analysis: can go down rabbit holes

4) **Example of sampling data:** Let's get a data sample of folks in our course: **Cell Phones**
   a) Put it in a Google Sheet
   b) Name of person/owner
   c) Age of owner
   d) Manufacturer: Apple, Samsung, Google
   e) Model #: iPhone 11, Galaxy S21, Pixel 4
   f) Operating system
   g) When it was purchased (Date)

*** *Review your Google account and they get into Google sheets*

** *Let's all enter our personal data into the Google Sheet.*

5) Intro to tables:
   a) Columns/fields:
       i) Data Types: String, Numerics, Dates
   b) Rows/records

*** Dirty tricks # 1: Sampling of data

6) Main statistical operations:
   a) Sum
   b) Counts

c) Min
d) Max
e) Averages (Mean)
f) Median
g) Mode

7) Get into Data Studios

Datastudio.google.com

-- Review the "Term agreements", and setup Data sources.

8) Bring in our Google Sheet into Data Studio

*** Let's share your Data Studio dashboard

*** Let's review some of those statistical operations

a) Add labels
b) Add charts
c) Add title to the dashboard
d) Add Source: Where we got the data.

9) Dataset: Video Games sales

What questions do you have about video games? Let's find out….
● Which game genre has the most games?
● Which game genre makes the most money?

Introduce: Filters

Data Definitions:
Source: https://www.kaggle.com/gregorut/videogamesales

This dataset contains a list of video games with sales greater than 100,000 copies. It was generated by a scrape of vgchartz.com.

Fields include

● Rank - Ranking of overall sales
● Name - The games name
● Platform - Platform of the games release (i.e. PC,PS4, etc.)
● Year - Year of the game's release

- **Genre** - Genre of the game
- **Publisher** - Publisher of the game
- **NA_Sales** - Sales in North America (in millions)
- **EU_Sales** - Sales in Europe (in millions)
- **JP_Sales** - Sales in Japan (in millions)
- **Other_Sales** - Sales in the rest of the world (in millions)
- **Global_Sales** - Total worldwide sales.

10) Scriptural reflection:

Apostle's Creed

- dated in 390 **AD** (Old! - older is Nicene Creed at 381 AD)
- additions were completed by the 8th century (900 AD).

I believe in God, the Father almighty, creator of heaven and earth.

I believe in Jesus Christ, his only Son, our Lord,
who was conceived by the Holy Spirit and born of the virgin Mary.
He suffered under Pontius Pilate, was crucified, died, and was buried;
he descended to hell. The third day he rose again from the dead.
He ascended to heaven and is seated at the right hand of God the Father
almighty.
From there he will come to judge the living and the dead.

I believe in the Holy Spirit,
the holy catholic church, the communion of saints,
the forgiveness of sins,
the resurrection of the body,
and the life everlasting. Amen.

In its discussion of the contents of the Creed, the *Catechism of the Catholic Church* presents it in the traditional division into twelve articles:

1. **I believe in God the Father** almighty, creator of heaven and earth.
2. **I believe in Jesus Christ,** his only Son, our Lord.
3. He was conceived by the power of the Holy Spirit and born of the Virgin Mary.
4. Under Pontius Pilate, He was crucified, died, and was buried.
5. He descended to the dead. On the third day he rose again.
6. He ascended into heaven and is seated at the right hand of the Father.
7. He will come again to judge the living and the dead.
8. **I believe in the Holy Spirit,**
9. the holy Catholic Church, the communion of saints,
10. the forgiveness of sins,

11. the resurrection of the body,
12. and the life everlasting.

Week 2:

Objectives:
1) Practice creating more Data Studio dashboards
2) Share your dashboard with a link.
3) Ask questions about a dataset, like the Video Game Sales dataset...try to find answers.
4) Add filters to the dashboard, and the View mode/button.
5) Begin to look at the COVID Positive Cases dataset

Video Game Sales dataset: (10:10am)

What questions do you have about video games? Let's find out….
●

Review how data tells a story:
1) Know your audience
2) Data storytelling - stick to the story
https://www.youtube.com/watch?v=1MkI5TGBVqQ&ab_channel=OnlineBehavior

Filters: (10:40am)
● One report-wide filter

*** Dirty tricks #2 - Axis scaling (10:50am)

COVID Positive Cases dataset (11am)
● Let's begin to look at this. Find the Min/Max/Median/etc.

Scriptural Reflection: (11:20)

Apostle's Creed
I believe in Jesus Christ, his only Son, our Lord,
who was conceived by the Holy Spirit and born of the virgin Mary.
He suffered under Pontius Pilate, was crucified, died, and was buried;
he descended to hell. The third day he rose again from the dead.
He ascended to heaven and is seated at the right hand of God the Father almighty.
From there he will come to judge the living and the dead.

Jesus' birth: Luke 1: 1-4, Luke 1:26-27, & Luke 2:1-7

Luke - Chapter 1

1 Since many have undertaken to set down an orderly account of the events that have been fulfilled among us, **2** just as they were handed on to us by those who from the beginning were eyewitnesses and servants of the word, **3** I too decided, after investigating everything carefully from the very first,[a] to write an orderly account for you, most excellent Theophilus, **4** so that you may know the truth concerning the things about which you have been instructed.

26 In the sixth month the angel Gabriel was sent by God to a town in Galilee called Nazareth, **27** to a virgin engaged to a man whose name was Joseph, of the house of David. The virgin's name was Mary.

30 The angel said to her, "Do not be afraid, Mary, for you have found favor with God. **31** And now, you will conceive in your womb and bear a son, and you will name him Jesus.

34 Mary said to the angel, "How can this be, since I am a virgin?"[c] **35** The angel said to her, "The Holy Spirit will come upon you, and the power of the Most High will overshadow you; therefore the child to be born[d] will be holy; he will be called Son of God.

Chapter 2

1 In those days a decree went out from Emperor Augustus that all the world should be registered. **2** This was the first registration and was taken while Quirinius was governor of Syria. **3** All went to their own towns to be registered. **4** Joseph also went from the town of Nazareth in Galilee to Judea, to the city of David called Bethlehem, because he was descended from the house and family of David. **5** He went to be registered with Mary, to whom he was engaged and who was expecting a child. **6** While they were there, the time came for her to deliver her child. **7** And she gave birth to her firstborn son and wrapped him in bands of cloth, and laid him in a manger, because there was no place for them in the inn.

Comments:
- Jesus was born at a particular time and place
- True, being born from a virgin seems impossible: requires faith, divine intervention.
- Notice the Apostle's creed doesn't mention that Jesus is God. Other creeds do.

Luke the beloved physician and Demas greet you. (Colossians 4:14)

Luke was probably a Gentile by birth, well educated in Greek culture, a physician by profession, a companion of Paul at various times from his second missionary journey to his final imprisonment in Rome, and a loyal friend who remained with the apostle after others had deserted him (2Ti 4:11).

Week 3:

Objectives:
1) More on COVID dataset
2) Line chart
3) Data trickery: 4 quadrants
4) Blended datasets
5) Embed your dashboard on a web site (WordPress)

1) Prayer (10:10)

2) Let's review the COVID data (10:15)
- **Review the Min/Max/Sum/Count/Mean/Median**

  Main statistical operations (and others):
  - Sum
  - Counts
  - Min
  - Max
  - Average (Mean)
  - Median
  - Mode
  - **Create a line chart**

3) 4 different data sets - all the same values below (10:25am)
- Data quartet: look at many views, visualizations, charts:
  https://en.wikipedia.org/wiki/Anscombe%27s_quartet

4) Questions data

5) Line chart (10:40)
- **Add Trend line (optional)**

6) Data Blending - Combine (JOIN) 2 datasets together (10:55am)
  a) It's a LEFT JOIN
  b) "JOIN KEY" - the field on which to JOIN
  c) Limit: You can blend up to 5 data sources
  d) Can "blend" (JOIN) on multiple fields

  - Multiple pages in a report

- Report level filters (all pages)

6) Share dashboard: Embed in a web site (WordPress) (11:12)

7) Scriptural Reflection: (11:20)

<u>**Apostle's Creed**</u>
I believe in Jesus Christ, his only Son, our Lord,
who was conceived by the Holy Spirit and born of the virgin Mary.
He suffered under Pontius Pilate, was crucified, died, and was buried;
he descended to hell. The third day he rose again from the dead.
He ascended to heaven and is seated at the right hand of God the Father almighty.
From there he will come to judge the living and the dead.

<u>**Jesus' death: Luke 23: 20-53**</u>

Luke - Chapter 23

20 Pilate, wanting to release Jesus, addressed them again; **21** but they kept shouting, "Crucify, crucify him!" **22** A third time he said to them, "Why, what evil has he done? I have found in him no ground for the sentence of death; I will therefore have him flogged and then release him." **23** But they kept urgently demanding with loud shouts that he should be crucified; and their voices prevailed. **24** So Pilate gave his verdict that their demand should be granted.

32 Two others also, who were criminals, were led away to be put to death with him. **33** When they came to the place that is called The Skull, they crucified Jesus[e] there with the criminals, one on his right and one on his left. **34** Then Jesus said, "Father, forgive them; for they do not know what they are doing." And they cast lots to divide his clothing.

44 It was now about noon, and darkness came over the whole land[l] until three in the afternoon, **45** while the sun's light failed;[m] and the curtain of the temple was torn in two. **46** Then Jesus, crying with a loud voice, said, "Father, into your hands I commend my spirit." Having said this, he breathed his last.

50 Now there was a good and righteous man named Joseph, who, though a member of the council, **51** had not agreed to their plan and action. He came from the Jewish town of Arimathea, and he was waiting expectantly for the kingdom of God. **52** This man went to Pilate and asked for the body of Jesus. **53** Then he took it down, wrapped it in a linen cloth, and laid it in a rock-hewn tomb where no one had ever been laid

Hope IT - Data Analysis - February 2021:

Week 4:

Objectives:
1) More on COVID dataset
2) More Blended datasets
3) Geo dimensions - filling a map
4) Calculated fields: Cases by population
5) Share your dashboard: Embed your dashboard on a web site (WordPress).
6) Learn how data can be used to predict future events.

● Prayer

1) Blended - Part 2 (10:10am)

2) Geo Map & Geo dimensions (10:25am)
   a) Latitude, Longitude
   b) ISO 3166-2: https://en.wikipedia.org/wiki/ISO_3166-2:US

3) Calculated fields: Cases by Population (10:40)

State	Cases	Population	Case by Population
State1	1,000	10,000	10%
State2	2,000	10,000	20%
State3	1,000	4,000	25%
State4	1,000	2,000	50%

   ● Cases / 2019Population * 100
   ● ***Need to cover why x 100 to get a readable percentage***
   ● For a Geo map:
     1) first create the calculated field in the table
     2) then change the table to a Geo Map chart.

4) WordPress (11am)

5) Predictive trends (11:10)
   We have talked about looking in the past. How about trying to prevent what will happen in the future? That requires more learning, but is used a lot these days. It's a technique called machine learning, and Data Scientists used that a lot.

6) Scriptural Reflection (11:20)

Apostle's Creed
I believe in Jesus Christ, his only Son, our Lord,
    who was conceived by the Holy Spirit and born of the virgin Mary.
    He suffered under Pontius Pilate, was crucified, died, and was buried;
    he descended to hell. The third day he rose again from the dead.
    He ascended to heaven and is seated at the right hand of God the Father almighty.
    From there he will come to judge the living and the dead.

Jesus' resurrection: Luke 23: 50-56 & 24: 1-12

Luke - Chapter 23

54 It was the day of Preparation, and the sabbath was beginning. **55** The women who had come with him from Galilee followed, and they saw the tomb and how his body was laid. **56** Then they returned, and prepared spices and ointments.

On the sabbath they rested according to the commandment.

Luke - Chapter 24

1 But on the first day of the week, at early dawn, they came to the tomb, taking the spices that they had prepared. **2** They found the stone rolled away from the tomb, **3** but when they went in, they did not find the body. **4** While they were perplexed about this, suddenly two men in dazzling clothes stood beside them. **5** The women were terrified and bowed their faces to the ground, but the men[c] said to them, "Why do you look for the living among the dead? He is not here, but has risen. **6** Remember how he told you, while he was still in Galilee, **7** that the Son of Man must be handed over to sinners, and be crucified, and on the third day rise again." **8** Then they remembered his words, **9** and returning from the tomb, they told all this to the eleven and to all the rest. **10** Now it was Mary Magdalene, Joanna, Mary the mother of James, and the other women with them who told this to the apostles. **11** But these words seemed to them an idle tale, and they did not believe them. **12** But Peter got up and ran to the tomb; stooping and looking in, he saw the linen cloths by themselves; then he went home, amazed at what had happened.

Reflection:
- With God's there is hope...God has a plan….for life.
- Jesus knows our struggles...he can take it...let him show us knew life.
- How are the different people expecting to see Jesus? What are their reactions?

- Each morning is like a resurrection. God giving us new life.
- Have a great Easter!!!