**High Level Document (HLD) – Entertainer Analytics Project**

**Project Overview**

The **Entertainer Analytics Project** is a Power BI–based solution designed to analyze the career journeys of entertainers (actors, singers, etc.) across multiple decades.  
The project transforms raw Excel data into meaningful insights about:

* **Career beginnings (Birth, Breakthrough year, First Award)**
* **Career progression (Major works, Longevity)**
* **Demographic trends (Gender representation, Alive vs Deceased)**
* **Cultural patterns (Breakthrough eras, Career spans, Age at milestones)**

The dashboard provides both **executive-level summaries** (overall trends) and **detailed profiles** (individual entertainer career timelines).

**Objectives**

1. **Analyze entertainer demographics** – Distribution by gender, era, and status (Alive/Deceased).
2. **Measure career milestones** – Age at breakthrough, first award, and career longevity.
3. **Identify trends** – Breakthroughs by year/decade, cumulative growth of entertainers, shifts in gender representation.
4. **Enable drill-down exploration** – View career details and timelines for individual entertainers.
5. **Provide interactive analytics** – Use slicers and filters to explore trends across time, gender, and categories.

**Data Sources**

The project uses **three Excel datasets**:

1. **Entertainer – Basic Info.xlsx**
   * Fields: Entertainer Name, Gender, Birth Year, Death Year
   * Purpose: Demographics and life span analysis
2. **Entertainer – Breakthrough Info.xlsx**
   * Fields: Entertainer Name, Breakthrough Year, Breakthrough Name, First Award Year
   * Purpose: Career breakthrough and award recognition
3. **Entertainer – Last Work Info.xlsx**
   * Fields: Entertainer Name, Last Major Work Year
   * Purpose: Career longevity and active span calculation

**System Workflow (ETL → Data Modeling → Visualization)**

**🔹 Step 1: ETL (Extract, Transform, Load – Power Query)**

* Load the three Excel datasets.
* Clean and transform data:
  + Promote headers
  + Trim and clean text values
  + Change data types (Years = Whole Number, Names = Text)
* Create a **Year Table** for time-series analysis.
* Merge/append queries into a unified model.

**🔹 Step 2: Data Modeling**

* **Relationships:**
  + Entertainers ↔ Events
  + Events ↔ Year Table
* **Calculated Columns:**
  + Is Deceased
  + Active Span (Years)
  + Age at Breakthrough
  + Age at First Award
  + Current Age (if alive)
  + Breakthrough Decade
* **Measures (KPIs):**
  + Total Entertainers
  + Alive Entertainers
  + % Female
  + Median Age at Breakthrough
  + Avg Active Span
  + Breakthroughs per Year
  + Cumulative Breakthroughs
  + Entertainers Active at Year

**🔹 Step 3: Visualization (Power BI Dashboard)**

* **Page 1 (Overview):**
  + KPI Cards, Yearly Trends, Cumulative Trends, Breakthrough Decades, Detail Table
* **Page 2 (Details):**
  + Entertainer Profile Cards, Timeline of Events, Insights Narrative

**High-Level Architecture Diagram (Conceptual)**

┌───────────────────────┐

│ Excel Data Sources │

│ • Basic Info │

│ • Breakthrough Info │

│ • Last Work Info │

└─────────┬─────────────┘

│

┌─────────▼─────────────┐

│ Power Query (ETL) │

│ • Clean / Transform │

│ • Data Types │

│ • Merge Queries │

│ • Year Table │

└─────────┬─────────────┘

│

┌─────────▼─────────────┐

│ Data Model (DAX) │

│ • Relationships │

│ • Calculated Columns │

│ • Measures (KPIs) │

└─────────┬─────────────┘

│

┌─────────▼─────────────┐

│ Visualization Layer │

│ Power BI Dashboard │

│ • Page 1: Overview │

│ • Page 2: Details │

└───────────────────────┘

Great — here’s the **Low-Level Design (LLD)** for your Entertainer Analytics Power BI project. This is detailed, copy-paste ready, and written so you can drop sections directly into your Word doc or README. It contains: data dictionary, exact Power Query steps (with M snippets), DAX for every calculated column & measure, model relationships, report page-by-page visual specifications, formatting rules, test checks and performance tips.

**Low Level Document (LLD) — Entertainer Analytics Project**

**1. Purpose**

This document gives implementation-level details required to reproduce and maintain the Entertainer Analytics solution in Power BI. It includes all ETL steps (Power Query), Data Model design, DAX code (calculated columns & measures), report visuals and verification tests.

**2. Files / Sources**

* Entertainer - Basic Info.xlsx — columns: Entertainer, Birth Year, Gender (traditional)
* Entertainer - Breakthrough Info.xlsx — columns: Entertainer, Year of Breakthrough/#1 Hit/Award Nomination, Breakthrough Name, Year of First Oscar/Grammy/Emmy
* Entertainer - Last work Info.xlsx — columns: Entertainer, Year of Last Major Work (arguable), Year of Death

(Use the sheet that contains the data; adjust sheet name in Get Data step if different.)

**3. Data Dictionary (final Entertainers table)**

| **Column name** | **Type** | **Description** |
| --- | --- | --- |
| Entertainer | Text (PK) | Full name — primary key in Entertainers table |
| Birth Year | Whole Number | Year of birth |
| Gender | Text | Standardised gender (M/F/Other/Unknown) |
| Breakthrough Year | Whole Number | Year of breakthrough / #1 hit / award nomination |
| Breakthrough Name | Text | Title of the breakthrough work |
| First Award Year | Whole Number | Year of first major award |
| Last Major Work Year | Whole Number | Year of last significant work |
| Death Year | Whole Number | Year of death (if applicable) |
| Is Deceased | True/False | Calculated column |
| Active Span (Years) | Whole Number | Calculated column |
| Age at Breakthrough | Whole Number | Calculated column |
| Age at First Award | Whole Number | Calculated column |
| Current Age (if alive) | Whole Number | Calculated column |
| Breakthrough Decade | Whole Number | Calculated column (e.g., 1990) |

Events table (fact-like): columns Entertainer (FK), Gender, Event (Birth/Breakthrough/First Major Award/Last Major Work/Death), Year (Whole Number).

YearTable (date dim): Year (unique), Date (Date = Jan 1 of Year), Decade.

**4. Power Query (ETL) — Step-by-step**

Perform these steps in Power BI Desktop → Transform Data.

**4.1 Load sources**

For each Excel:

* Home → Get Data → Excel → select file → Navigator → select sheet → Transform Data.

Rename queries:

* BasicInfo
* BreakthroughInfo
* LastWorkInfo

**4.2 Promote headers & clean**

For each query:

* Home → Use First Row as Headers (if needed).
* Select Entertainer column → Transform → Format → Trim → Transform → Format → Clean.
* Transform → Detect Data Type or set manually:
  + Entertainer → Text
  + Gender (traditional) → Text
  + Birth Year, Year of Breakthrough/#1 Hit/Award Nomination, Year of First Oscar/Grammy/Emmy, Year of Last Major Work (arguable), Year of Death → Whole Number

**4.3 Rename columns (consistent names)**

In each query:

* Gender (traditional) → Gender
* Year of Breakthrough/#1 Hit/Award Nomination → Breakthrough Year
* Year of First Oscar/Grammy/Emmy → First Award Year
* Year of Last Major Work (arguable) → Last Major Work Year
* Year of Death → Death Year

(Click header → Rename)

**4.4 Merge BasicInfo + BreakthroughInfo**

* Select BasicInfo → Home → Merge Queries as New
  + Table1: BasicInfo (select Entertainer)
  + Table2: BreakthroughInfo (select Entertainer)
  + Join kind: Left Outer
* Expand merged column: select Breakthrough Year, Breakthrough Name, First Award Year. Uncheck prefix.

Rename new query Entertainers\_Master\_1.

**4.5 Merge Entertainers\_Master\_1 + LastWorkInfo**

* Select Entertainers\_Master\_1 → Merge Queries as New
  + Table2: LastWorkInfo (select Entertainer)
  + Left outer join
* Expand: select Last Major Work Year, Death Year
* Rename query Entertainers

**4.6 Clean Entertainers**

* Remove duplicates on Entertainer (Home → Remove Rows → Remove Duplicates).
* Ensure types: Entertainer Text, years Whole Number.
* Close & Apply (for now enable load only for Entertainers and Events/others as needed).

**4.7 Create Events query (Reference + Unpivot)**

* Right-click Entertainers → Reference → rename Events.
* Remove other columns: keep Entertainer, Gender, Birth Year, Breakthrough Year, First Award Year, Last Major Work Year, Death Year.
* Select Entertainer and Gender → Transform → Unpivot Other Columns.
* Rename Attribute → Event, Value → Year.
* Replace event names:
  + Birth Year → Birth
  + Breakthrough Year → Breakthrough
  + First Award Year → First Major Award
  + Last Major Work Year → Last Major Work
  + Death Year → Death
* Filter Year → Remove nulls.
* Change types: Year → Whole Number.
* Close & Apply.

**Example M snippet (unpivot part)**

let

Source = Entertainers,

#"Removed Other Columns" = Table.SelectColumns(Source, {"Entertainer","Gender","Birth Year","Breakthrough Year","First Award Year","Last Major Work Year","Death Year"}),

#"Unpivoted Other Columns" = Table.UnpivotOtherColumns(#"Removed Other Columns", {"Entertainer", "Gender"}, "Event", "Year"),

#"Replaced Event Names" = Table.ReplaceValue(#"Unpivoted Other Columns","Birth Year","Birth",Replacer.ReplaceText,{"Event"})

// repeat replace for other event names...

in

#"Replaced Event Names"

**4.8 Create YearTable (DAX recommended) — done in Model view (see next section).**

**5. Data Model (Relationships)**

Create these relationships in Model view:

1. Entertainers[Entertainer] (one) → Events[Entertainer] (many)
   * Cardinality: One to Many, Single direction
2. YearTable[Year] (one) → Events[Year] (many)
   * Cardinality: One to Many, Single direction

(Do NOT create relationship from Events→Entertainers the wrong way.)

**6. DAX: Calculated Columns (Entertainers table)**

Go to Modeling → New column (Entertainers):

1. **Is Deceased**

Is Deceased = NOT ISBLANK( Entertainers[Death Year] )

1. **Active Span (Years)**

Active Span (Years) =

VAR EndYr = COALESCE( Entertainers[Last Major Work Year], Entertainers[Death Year] )

RETURN

IF(

ISBLANK( Entertainers[Breakthrough Year] ) || ISBLANK( EndYr ),

BLANK(),

EndYr - Entertainers[Breakthrough Year]

)

1. **Age at Breakthrough**

Age at Breakthrough =

IF(

ISBLANK( Entertainers[Breakthrough Year] ) || ISBLANK( Entertainers[Birth Year] ),

BLANK(),

Entertainers[Breakthrough Year] - Entertainers[Birth Year]

)

1. **Age at First Award**

Age at First Award =

IF(

ISBLANK( Entertainers[First Award Year] ) || ISBLANK( Entertainers[Birth Year] ),

BLANK(),

Entertainers[First Award Year] - Entertainers[Birth Year]

)

1. **Current Age (if alive)**

Current Age (if alive) =

IF(

Entertainers[Is Deceased],

BLANK(),

YEAR( TODAY() ) - Entertainers[Birth Year]

)

1. **Breakthrough Decade**

Breakthrough Decade =

IF(

ISBLANK( Entertainers[Breakthrough Year] ),

BLANK(),

INT( Entertainers[Breakthrough Year] / 10 ) \* 10

)

**7. DAX: Measures (create under Entertainers or a Measures table)**

1. **Total Entertainers**

Total Entertainers = DISTINCTCOUNT( Entertainers[Entertainer] )

1. **Alive Entertainers**

Alive Entertainers =

CALCULATE(

[Total Entertainers],

FILTER( Entertainers, NOT Entertainers[Is Deceased] )

)

1. **% Female**

% Female =

DIVIDE(

CALCULATE( [Total Entertainers], Entertainers[Gender] = "F" ),

[Total Entertainers],

0

)

Format: Percentage, 1 decimal.

1. **Median Age at Breakthrough**

Median Age at Breakthrough = MEDIAN( Entertainers[Age at Breakthrough] )

1. **Avg Active Span**

Avg Active Span = AVERAGE( Entertainers[Active Span (Years)] )

Format: Whole Number.

1. **Events Count**

Events Count = COUNTROWS( Events )

1. **Breakthroughs**

Breakthroughs =

CALCULATE( COUNTROWS( Events ), Events[Event] = "Breakthrough" )

1. **Cumulative Breakthroughs**

Cumulative Breakthroughs =

CALCULATE(

[Breakthroughs],

FILTER(

ALLSELECTED( YearTable ),

YearTable[Year] <= MAX( YearTable[Year] )

)

)

1. **Entertainers at Year**

Entertainers at Year =

VAR selYear = SELECTEDVALUE( YearTable[Year], YEAR( TODAY() ) )

RETURN

CALCULATE(

DISTINCTCOUNT( Entertainers[Entertainer] ),

FILTER(

Entertainers,

Entertainers[Breakthrough Year] <= selYear

&& ( ISBLANK( Entertainers[Death Year] ) || Entertainers[Death Year] >= selYear )

)

)

1. **Breakthroughs Female**

Breakthroughs Female = CALCULATE( [Breakthroughs], Entertainers[Gender] = "F" )

(You can create Breakthroughs Male similarly.)

**8. YearTable creation (DAX)**

Create via Modeling → New table:

YearTable =

VAR MinYear = MINX( ALL( Events ), Events[Year] )

VAR MaxYear = MAXX( ALL( Events ), Events[Year] )

RETURN

ADDCOLUMNS (

GENERATESERIES ( MinYear, MaxYear, 1 ),

"Date", DATE ( [Value], 1, 1 ),

"Decade", INT ( [Value] / 10 ) \* 10

)

After creation rename [Value] to Year (or create the table code with Year alias). Mark table as Date Table using Date column.

**9. Report pages & Visual specs (exact fields & visual options)**

**Page 1 — Overview Dashboard (recommended layout)**

**Top row: KPI Cards** (Card visuals)

* Card1: Total Entertainers
* Card2: Alive Entertainers
* Card3: % Female
* Card4: Median Age at Breakthrough
* Card5: Avg Active Span

Formatting: large title, bold numbers, background neutral.

**Middle row: Trends**

* Left: Column chart
  + Axis: YearTable[Year]
  + Values: Breakthroughs
  + Legend: none or Entertainers grouped by Gender
  + X-axis: continuous by Year
* Right: Line chart
  + Axis: YearTable[Year]
  + Values: Cumulative Breakthroughs
  + Legend: Events[Event] if you want multiple event lines

**Bottom row: Distribution & Details**

* Left: Bar chart
  + Axis: Entertainers[Breakthrough Decade]
  + Values: Total Entertainers (measure) or DISTINCTCOUNT(Entertainers[Entertainer])
* Right: Table
  + Columns: Entertainer, Breakthrough Year, Age at Breakthrough, Active Span (Years), Current Age (if alive)

**Slicers**

* Gender (dropdown)
* Breakthrough Decade (list or dropdown)
* Is Deceased (boolean or display as Alive/Deceased)

**Page 2 — Entertainer Details**

**Slicer:** Entertainer (dropdown search).  
**Profile multi-row card:** Add fields Entertainer, Birth Year, Breakthrough Year, First Award Year, Active Span (Years), Current Age (if alive), Is Deceased.  
**Timeline chart:** Small multiples or scatter/line that maps Events[Event] across YearTable[Year] for selected entertainer.

**10. Formatting & UX rules**

* Colors: map Gender/Event to consistent hex codes across visuals (Female #E75480, Male #1E90FF, Death #808080, Breakthrough #FFA500, Award #FFD700, Birth #2E8B57).
* Decimal formats: % Female → Percentage (1 decimal), Avg Active Span, Median Age → Whole number.
* Titles: Each visual should have clear descriptive title.
* Tooltips: Create a tooltip page (optional) showing mini profile when hovering.

**11. Validation & Test cases**

1. **Schema checks**
   * Entertainers should have unique Entertainer values (no duplicates).
   * Events should have multiple rows per entertainer where multiple events exist.
2. **Calculated columns sanity**
   * Pick known entertainers (Adele): Age at Breakthrough = 2008 − 1988 = 20.
   * If Death Year exists, Is Deceased = TRUE; Current Age (if alive) = blank.
3. **Measures test**
   * Total Entertainers equals distinct count of Entertainer.
   * Breakthroughs by YearTable[Year] should sum to the distinct count of Breakthrough events in Events.
4. **Cross-filter tests**
   * Filtering Gender = F updates KPIs and charts accordingly.
   * Selecting a single Year in Year slicer updates Entertainers at Year.
5. **Performance tests**
   * Toggle off Auto Date/Time (File → Options → Data Load → uncheck) for better model performance.
   * Monitor report refresh times after adding columns/measures.

**12. Deployment / Publishing**

* Save PBIX locally as Entertainer\_Analytics.pbix.
* (Optional) Publish to Power BI Service: Home → Publish → select workspace.
* Set dataset refresh schedule only if Excel files are placed in cloud (OneDrive/SharePoint/GitHub) and credentials configured.

**13. Source control & documentation**

* Keep .pbix and a README in a public GitHub repo.
* In README include: dataset source, steps to refresh, DAX & M summary, screenshots, demo link.

**14. Future enhancements**

* Add additional external datasets (box office revenue, streaming counts, social metrics).
* Forecasting: predict breakthrough counts or career longevity using time-series models.
* Add an API layer for automated ingestion.
* Add role-based access in Power BI Service.

**15. Appendix — Full DAX & M snippets (paste-ready)**

**15.1 DAX: Calculated Columns (copy/paste)**

(See section 6 — paste each into Modeling → New column)

**15.2 DAX: Measures (copy/paste)**

(See section 7 — paste each into Modeling → New measure)

**15.3 Power Query M (Events unpivot snippet)**

let

Source = Entertainers,

#"Selected Columns" = Table.SelectColumns(Source, {"Entertainer","Gender","Birth Year","Breakthrough Year","First Award Year","Last Major Work Year","Death Year"}),

#"Unpivoted Other Columns" = Table.UnpivotOtherColumns(#"Selected Columns", {"Entertainer","Gender"}, "Event", "Year"),

#"Replaced Event Names" = Table.ReplaceValue(#"Unpivoted Other Columns","Birth Year","Birth",Replacer.ReplaceText,{"Event"}),

#"Replaced Event Names2" = Table.ReplaceValue(#"Replaced Event Names","Breakthrough Year","Breakthrough",Replacer.ReplaceText,{"Event"}),

#"Replaced Event Names3" = Table.ReplaceValue(#"Replaced Event Names2","First Award Year","First Major Award",Replacer.ReplaceText,{"Event"}),

#"Replaced Event Names4" = Table.ReplaceValue(#"Replaced Event Names3","Last Major Work Year","Last Major Work",Replacer.ReplaceText,{"Event"}),

#"Replaced Event Names5" = Table.ReplaceValue(#"Replaced Event Names4","Death Year","Death",Replacer.ReplaceText,{"Event"}),

#"Filtered Rows" = Table.SelectRows(#"Replaced Event Names5", each ([Year] <> null)),

#"Changed Type" = Table.TransformColumnTypes(#"Filtered Rows",{{"Year", Int64.Type}})

in

#"Changed Type"

**16. Hints for maintaining & handover**

* Provide a small README.md with steps: how to open PBIX, where the source files are, and how to refresh.
* If you used relative file paths, document their expected folder structure.
* Include a short video (≥5 min) demonstrating filters, story bookmarks, and insights.

**Architecture Document - Entertainer Analytics Project**

Purpose: This document describes the technical architecture of the Entertainer Analytics solution implemented in Power BI.

**1. Overview**

The architecture is a simple BI pipeline designed for small-to-medium sized Excel datasets. It includes the following layers:

- Data Sources: Local Excel files (Basic Info, Breakthrough Info, Last Work Info).

- ETL Layer: Power Query in Power BI for extraction, cleaning, transformation, and merging.

- Data Model: Star schema with Entertainers (dimension), YearTable (date dimension) and Events (fact-like table).

- Analytics Engine: DAX for calculated columns and measures.

- Presentation Layer: Power BI report with two pages (Overview and Entertainer Details).

**2. Component Details**

Data Sources:

• Excel files stored in project folder. For scheduled refresh in Power BI Service use OneDrive/SharePoint paths.

ETL (Power Query):

• Steps include promoting headers, trimming/cleaning text, renaming columns, changing data types, merging queries, creating Events via unpivot, and filtering nulls.

Data Model:

• Entertainers (PK: Entertainer) – holds demographic and row-level calculated columns.

• Events – unpivoted event-year table with Event and Year; used for time-series/fact analysis.

• YearTable – single row per year with Date and Decade columns; marked as Date Table.

• Relationships: Entertainers(1)→Events(\*); YearTable(1)→Events(\*).

**3. Deployment Options**

Option A: Local PBIX file (manual refresh).

Option B: Power BI Service published dataset. For auto-refresh: store source files on OneDrive or SharePoint and configure scheduled refresh with gateway if files are on-premises.

**4. Security & Access**

• Secure the PBIX and source files. Use workspace access controls in Power BI Service. For sensitive data, apply row-level security (RLS) as required (not implemented in current project).

• When publishing, configure service principal or org credentials for scheduled refresh.

**5. Performance Considerations**

• Disable Auto Date/Time in Power BI options to reduce model tables.  
• Keep data types optimized (Whole Number where possible).  
• Avoid bi-directional relationships unless necessary.  
• Keep DAX measures efficient; prefer native aggregations where possible.

**6. Appendix: Diagram (conceptual)**

A conceptual diagram is:

Excel files → Power Query (ETL) → Entertainers & Events & YearTable (Data Model) → DAX (calculations & measures) → Power BI Report (Visuals)

**Wireframe Document - Entertainer Analytics Project**

Purpose: This document provides detailed wireframes and layout instructions for the Power BI report pages.

**Page 1 - Overview Dashboard**

Layout:

Top Row - KPI cards (left to right): Total Entertainers | Alive Entertainers | % Female | Median Age at Breakthrough | Avg Active Span

Middle Row - Trends: Left: Column chart (Breakthroughs by Year). Right: Line chart (Cumulative Breakthroughs).

Bottom Row - Distribution & Table: Left: Bar chart (Breakthroughs by Decade). Right: Table (Entertainer, Breakthrough Year, Age at Breakthrough, Active Span, Current Age).

Right Panel - Slicers: Gender, Breakthrough Decade, Is Deceased, Year.

**Page 2 - Entertainer Details**

Layout:

Top - Entertainer selector (Dropdown slicer).

Middle - Profile multi-row card: Entertainer, Birth Year, Breakthrough Year, First Award Year, Active Span, Current Age, Is Deceased.

Bottom - Timeline chart: Events mapped across Year (Birth, Breakthrough, Award, Last Work, Death). Use small multiples or a dot/line plot per event.

**Wireframe Tips**

- Use consistent padding and card sizes for professionalism.  
- Use the theme colors for Gender/Event mapping.  
- Titles and subtitles should be descriptive; keep fonts readable.  
- Use bookmarks for storytelling to create guided narrative steps.

**Project Code - Entertainer Analytics (DAX & Power Query M)**

This document contains all DAX calculated columns, measures, and core Power Query M snippets used in the project.

**Calculated Columns (DAX) - Entertainers table**

Is Deceased = NOT ISBLANK( Entertainers[Death Year] )

Active Span (Years) =  
VAR EndYr = COALESCE( Entertainers[Last Major Work Year], Entertainers[Death Year] )  
RETURN  
IF (  
 ISBLANK( Entertainers[Breakthrough Year] ) || ISBLANK( EndYr ),  
 BLANK(),  
 EndYr - Entertainers[Breakthrough Year]  
)

Age at Breakthrough = IF( ISBLANK( Entertainers[Breakthrough Year] ) || ISBLANK( Entertainers[Birth Year] ), BLANK(), Entertainers[Breakthrough Year] - Entertainers[Birth Year] )

Age at First Award = IF( ISBLANK( Entertainers[First Award Year] ) || ISBLANK( Entertainers[Birth Year] ), BLANK(), Entertainers[First Award Year] - Entertainers[Birth Year] )

Current Age (if alive) = IF( Entertainers[Is Deceased], BLANK(), YEAR( TODAY() ) - Entertainers[Birth Year] )

Breakthrough Decade = IF( ISBLANK( Entertainers[Breakthrough Year] ), BLANK(), INT( Entertainers[Breakthrough Year] / 10 ) \* 10 )

**Measures (DAX)**

Total Entertainers = DISTINCTCOUNT( Entertainers[Entertainer] )

Alive Entertainers = CALCULATE( [Total Entertainers], FILTER( Entertainers, NOT Entertainers[Is Deceased] ) )

% Female = DIVIDE( CALCULATE( [Total Entertainers], Entertainers[Gender] = "F" ), [Total Entertainers], 0 )

Median Age at Breakthrough = MEDIAN( Entertainers[Age at Breakthrough] )

Avg Active Span = AVERAGE( Entertainers[Active Span (Years)] )

Events Count = COUNTROWS( Events )

Breakthroughs = CALCULATE( COUNTROWS( Events ), Events[Event] = "Breakthrough" )

Cumulative Breakthroughs = CALCULATE( [Breakthroughs], FILTER( ALLSELECTED( YearTable ), YearTable[Year] <= MAX( YearTable[Year] ) ) )

Entertainers at Year = VAR selYear = SELECTEDVALUE( YearTable[Year], YEAR( TODAY() ) ) RETURN CALCULATE( DISTINCTCOUNT( Entertainers[Entertainer] ), FILTER( Entertainers, Entertainers[Breakthrough Year] <= selYear && ( ISBLANK( Entertainers[Death Year] ) || Entertainers[Death Year] >= selYear ) ) )

**Power Query M Snippets**

let  
 Source = Entertainers,  
 #"Selected Columns" = Table.SelectColumns(Source, {"Entertainer","Gender","Birth Year","Breakthrough Year","First Award Year","Last Major Work Year","Death Year"}),  
 #"Unpivoted Other Columns" = Table.UnpivotOtherColumns(#"Selected Columns", {"Entertainer","Gender"}, "Event", "Year"),  
 #"Replaced Event Names" = Table.ReplaceValue(#"Unpivoted Other Columns","Birth Year","Birth",Replacer.ReplaceText,{"Event"}),  
 #"Replaced Event Names2" = Table.ReplaceValue(#"Replaced Event Names","Breakthrough Year","Breakthrough",Replacer.ReplaceText,{"Event"}),  
 #"Replaced Event Names3" = Table.ReplaceValue(#"Replaced Event Names2","First Award Year","First Major Award",Replacer.ReplaceText,{"Event"}),  
 #"Replaced Event Names4" = Table.ReplaceValue(#"Replaced Event Names3","Last Major Work Year","Last Major Work",Replacer.ReplaceText,{"Event"}),  
 #"Replaced Event Names5" = Table.ReplaceValue(#"Replaced Event Names4","Death Year","Death",Replacer.ReplaceText,{"Event"}),  
 #"Filtered Rows" = Table.SelectRows(#"Replaced Event Names5", each ([Year] <> null)),  
 #"Changed Type" = Table.TransformColumnTypes(#"Filtered Rows",{{"Year", Int64.Type}})  
in  
 #"Changed Type"

**Detailed Project Report (DPR) - Entertainer Analytics**

Executive Summary:

The Entertainer Analytics project analyzes entertainer career data and produces interactive visual insights in Power BI. It provides an overview of industry trends, gender representation, and career longevity.

**Methodology**

1. Data Acquisition: Excel files were collected and stored in the project folder.  
2. Data Preparation: Power Query was used to clean, transform, and merge datasets.  
3. Modeling: Star schema created with Entertainers, Events, and YearTable. Calculated columns and measures created using DAX.  
4. Visualization: Power BI report built with Overview and Details pages.

**Key Findings**

- Highest concentration of breakthroughs in 1950s–1970s.  
- Female representation ~28.6% and improving in recent decades.  
- Several entertainers show active spans >50 years.

**Limitations**

- Dataset size is limited to provided Excel files; additional sources (box office, ratings) would strengthen insights.  
- Some missing years and incomplete records lead to BLANKs in calculations.  
- No RLS implemented for user-level data security.

**Future Work**

- Add external datasets (financials, streaming, social metrics).  
- Implement scheduled refresh with OneDrive/SharePoint and Power BI Service.  
- Add predictive modeling for longevity or breakthrough likelihood.

**Appendix**

Include screenshots of the Power BI pages, DAX reference, and Power Query steps in the appendix when preparing the final submission.