

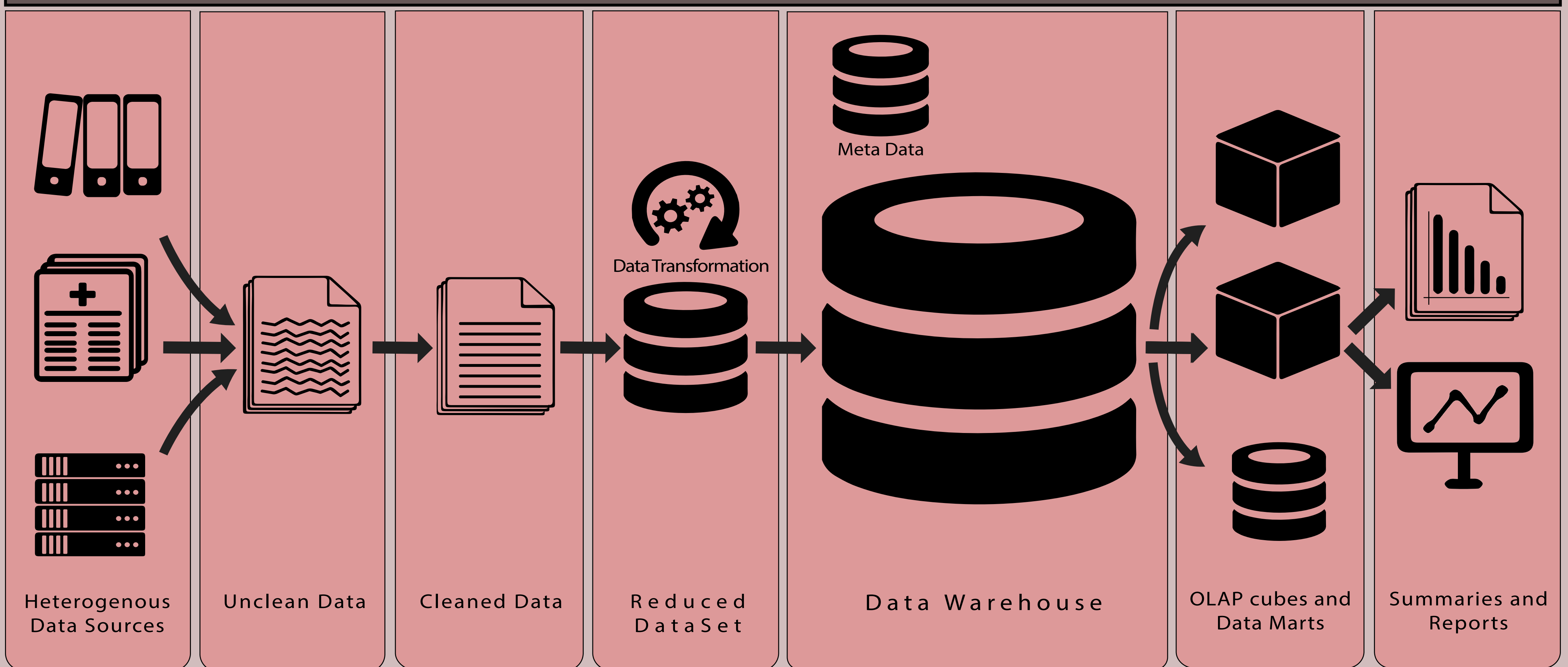
A Data Warehouse Structure on Pathological Data of Bangladesh

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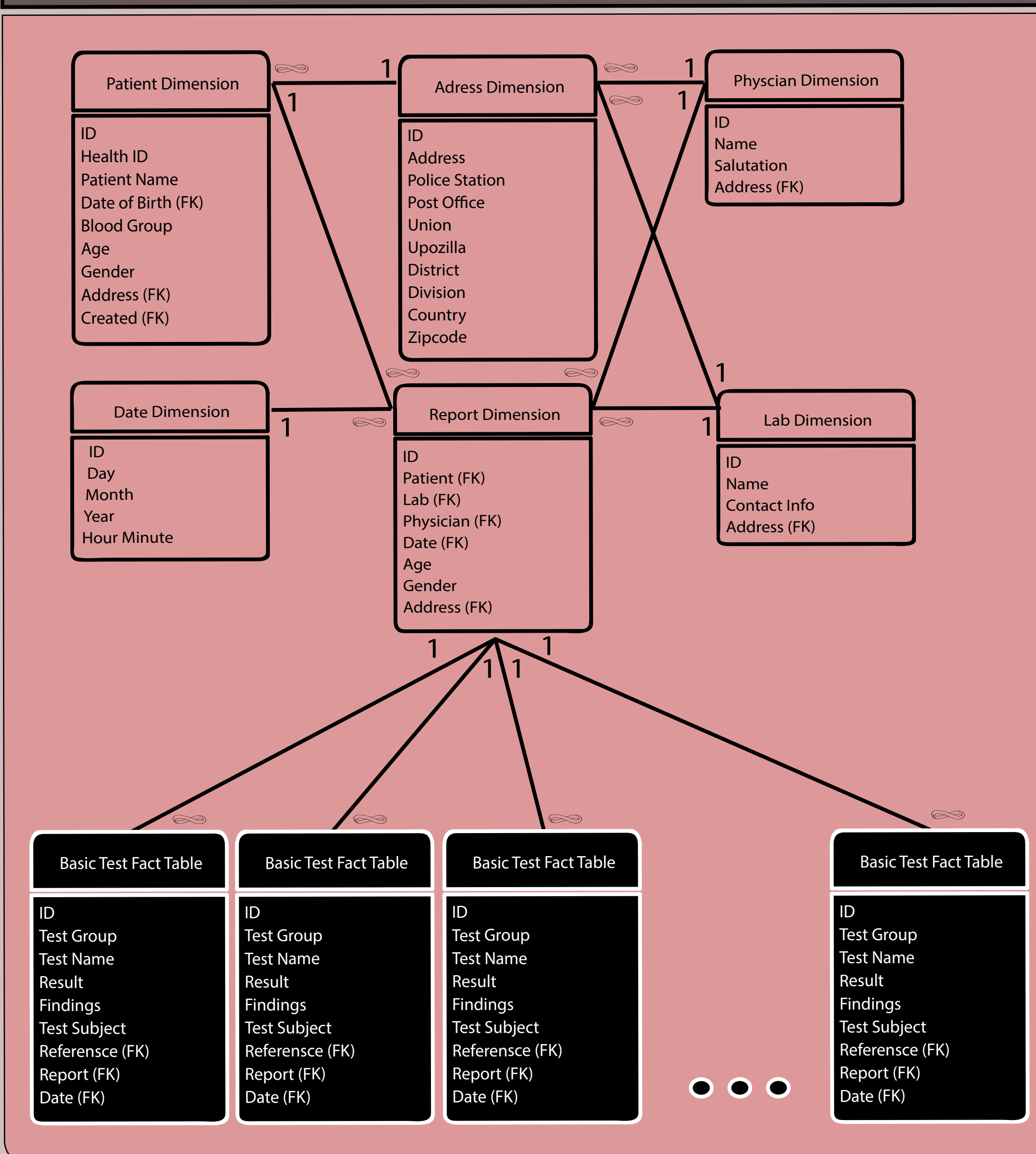
INTRODUCTION

- DATA WAREHOUSING METHODOLOGIES INCLUDE BUSINESS REQUIREMENTS ANALYSIS, DATA DESIGN, ARCHITECTURAL DESIGN, IMPLEMENTATION AND DEPLOYMENT.
- PATHOLOGICAL DATA WAREHOUSES ARE COMPLEX AND TIME CONSUMING TO REVIEW A SERIES OF PATIENT RECORDS
- DATA INTEGRATION TASKS OF PATHOLOGICAL DATA STORE ARE CHALLENGING SCENARIOS WHEN DESIGNING PATHOLOGICAL DATA WAREHOUSE ARCHITECTURE
- THE PRESENTED DATA WAREHOUSE ARCHITECTURE IS PRACTICABLE SOLUTION TO TACKLE DATA INTEGRATION ISSUES AND COULD BE ADOPTED BY SMALL TO LARGE PATHOLOGICAL DATA WAREHOUSE APPLICATIONS.

STEPS OF BUILDING PATHOLOGICAL DATA WAREHOUSE



DATA WAREHOUSE SCHEMA



ESTIMATED TOTAL NUMBER OF TESTS

TEST FOR A SINGLE PATIENT = t_p
 TOTAL PATIENTS IN CLASS $i = p_i$
 SO, TOTAL LAB TEST FOR p_i PATIENTS = $\sum_{k=1}^{k=p_i} t_k$

TOTAL REPORTS IN CLASS $i = r_i$
 NUMBER OF TEST IN $r_i = \sum_{j=1}^{j=r_i} t_{rj}$

t_{rj} IS NUMBER OF TEST IN IN REPORT j
 TOTAL NUMBER OF TESTS IS GIVEN BY

$$T = \sum_{i=1}^{i=n} l_i \times r_i \times \left(\sum_{j=1}^{j=r_i} t_{rj} / r_i \right)$$

1,2,3,...n ARE NUMBER OF CLASSES IN LABORATORIES
 l_i = NUMBER OF LABORATORIES IN CLASS i
 r_i = NUMBER OF TEST REPORTS IN CLASS i

CONCLUSION

WHAT WE HAVE DONE SO FAR :

- DESIGNED THE DATA WAREHOUSE
- DESIGNED SCHEMA FOR DATA WAREHOUSE.
- MATHEMATICAL MODEL FOR TOTAL NUMBER OF TESTS.
- WEEK LONG FIELD OBSERVATION & REAL DATA COLLECTION
- DATABASE SIZE ESTIMATION FOR MILLIONS OF GENERATED DATA
- DESIGN AND DEVELOPMENT OF LOAD MANAGER

WHERE WE ARE HEADED :

- IMPLEMENTATION OF REST OF THE SYSTEM
- CLOUD BASED DEPLOYMENT