



TRIPPIER

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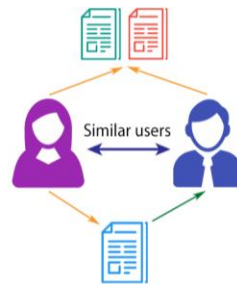
Problem Definition



Planning trips pose a challenging task for busy individuals visiting new tourist destinations



Lack of prior information about local places creates uncertainty & making travel decisions a hassle



Existing recommendation systems do not emphasize individual personality traits while planning trips

What does the numbers say?

+130%

Gross Online bookings of tours will more than double from \$9 billion in 2015 to \$21 billion in 2020

(Google/Phocusw right, 2016)

55%

Of leisure travelers take just 1-2 vacations a year so they put a lot of thought into planning

(Google/Phocusw right, 2016)

59%

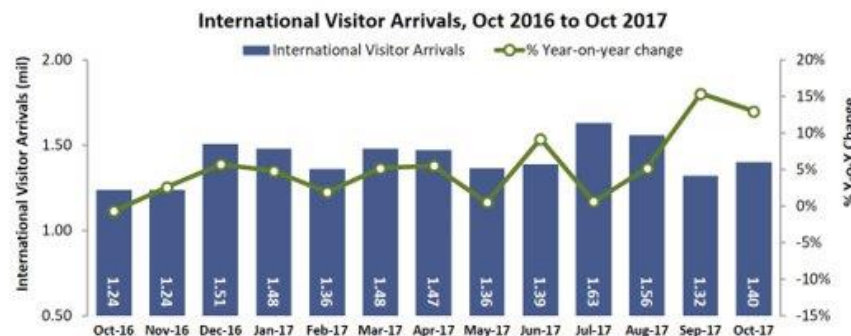
of travelers begin researching their next trip between one and three months before departure

(TripAdvisor, 2016).

34%

Millennials used a travel agent and they're more likely to turn to professional planners when the upcoming trip is more expensive

(MMGY)



© 2018 Singapore Tourism Board
Source: Disembarkation/Embarkation Cards

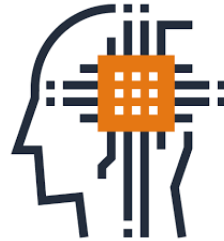
90%

travelers read online reviews. 95% of travelers trust reviews only from third party sites. 45% don't trust reviews on tour operators' own sites

Project Objective



Understand Tourism domain and Tourism-Information Systems

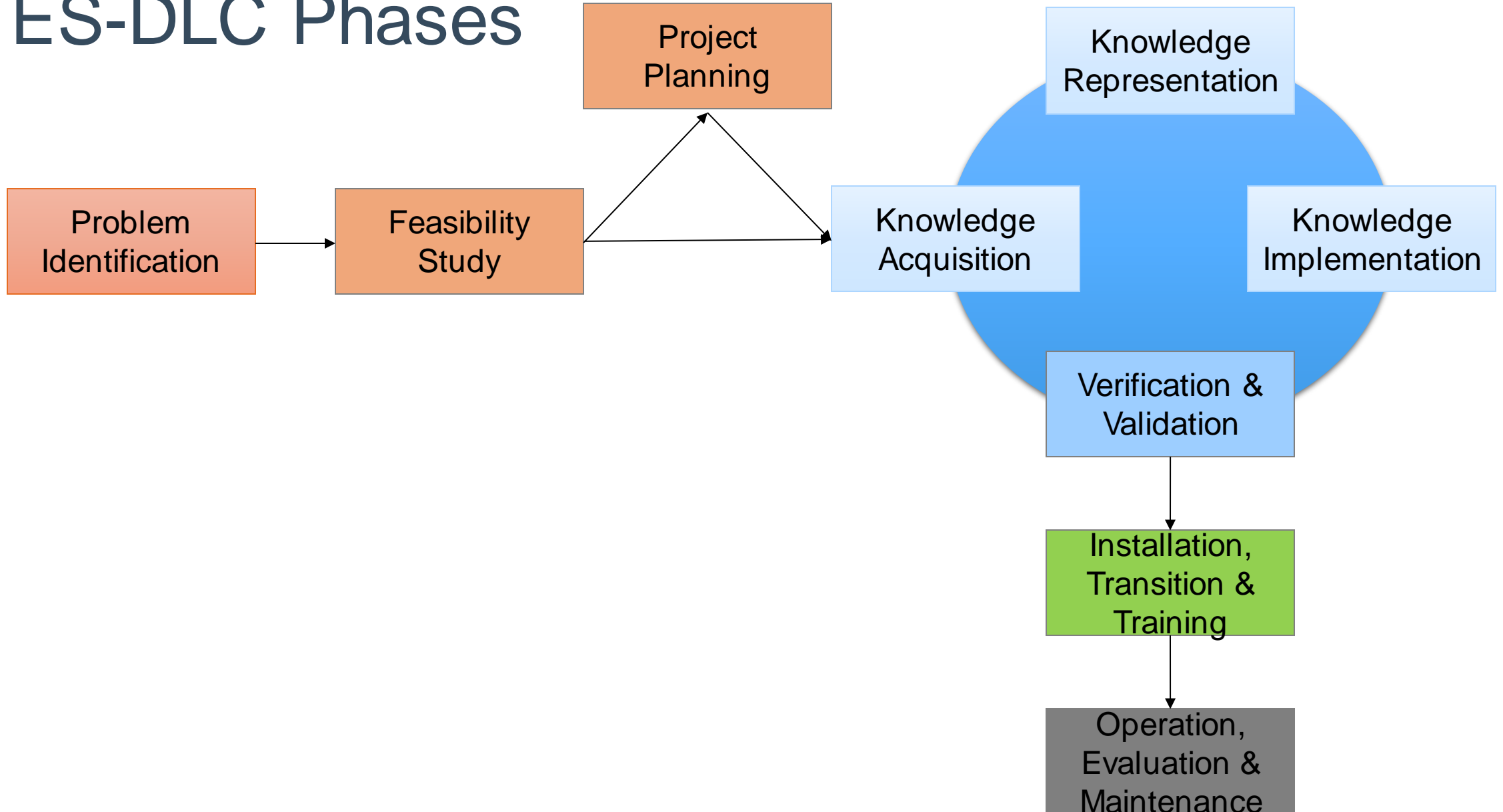


Build a "Trip recommendation Expert system" which is rule based using Knowledge Engineering techniques



Provide personalized tourism itinerary based on customer personality trait

ES-DLC Phases



Subject Matter Experts

“

One is good. Two is better.

”



Desmond Sek

Cofounder, Xaltius

People travel to get new experience
Life stage dictates the theme of the travel
Budget sets the feel and phase of the whole decision



Felix Tan

Cofounder, Anywhr

People consider reviews before visiting restaurants
Personality dominates the places likely to visit
Group size and type should be considered

Documented Sources



Stats from Singapore
Tourism Board &
Trekksoft



Publications and forums



Social reviews and ratings

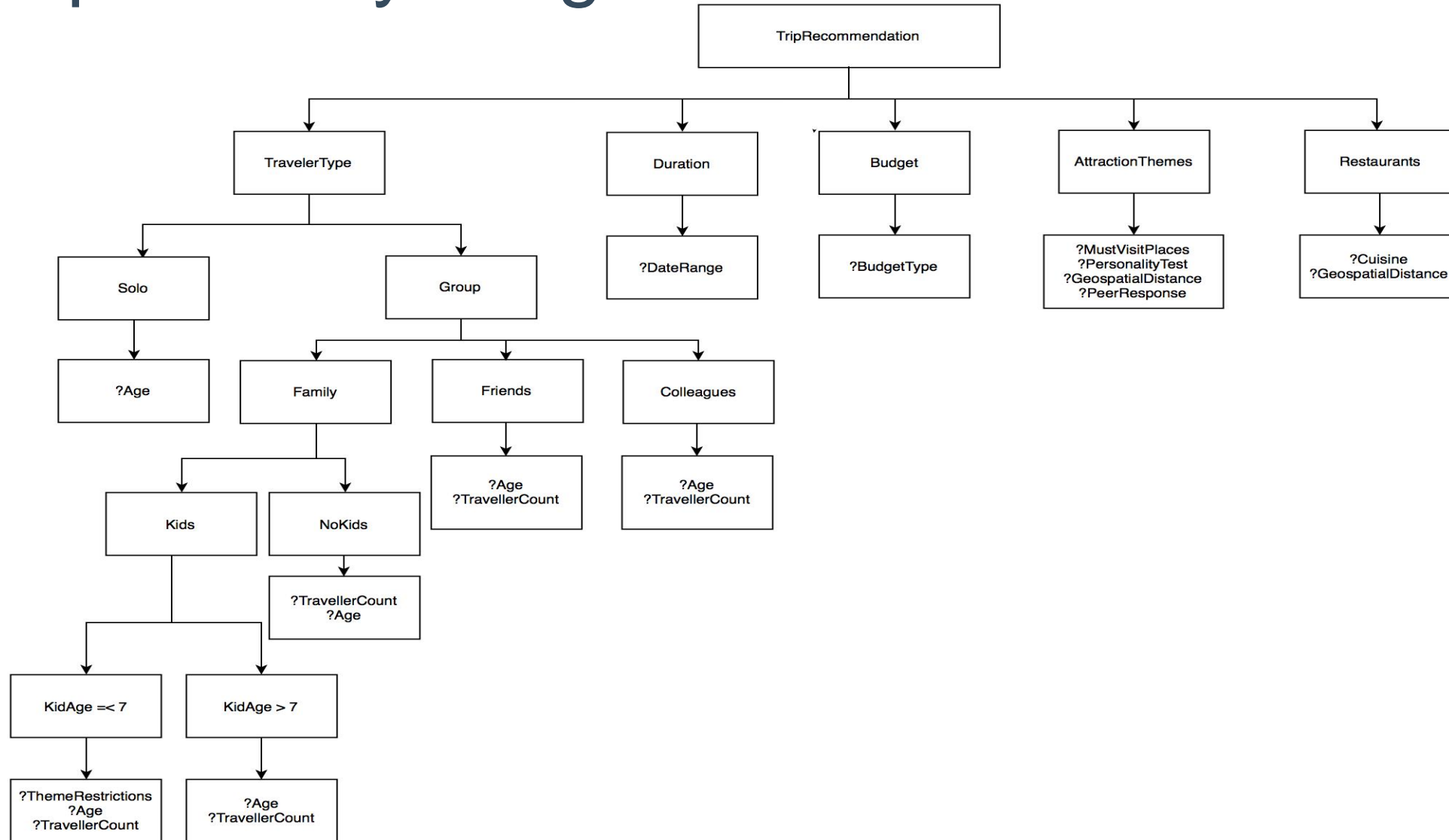


Peer Surveys

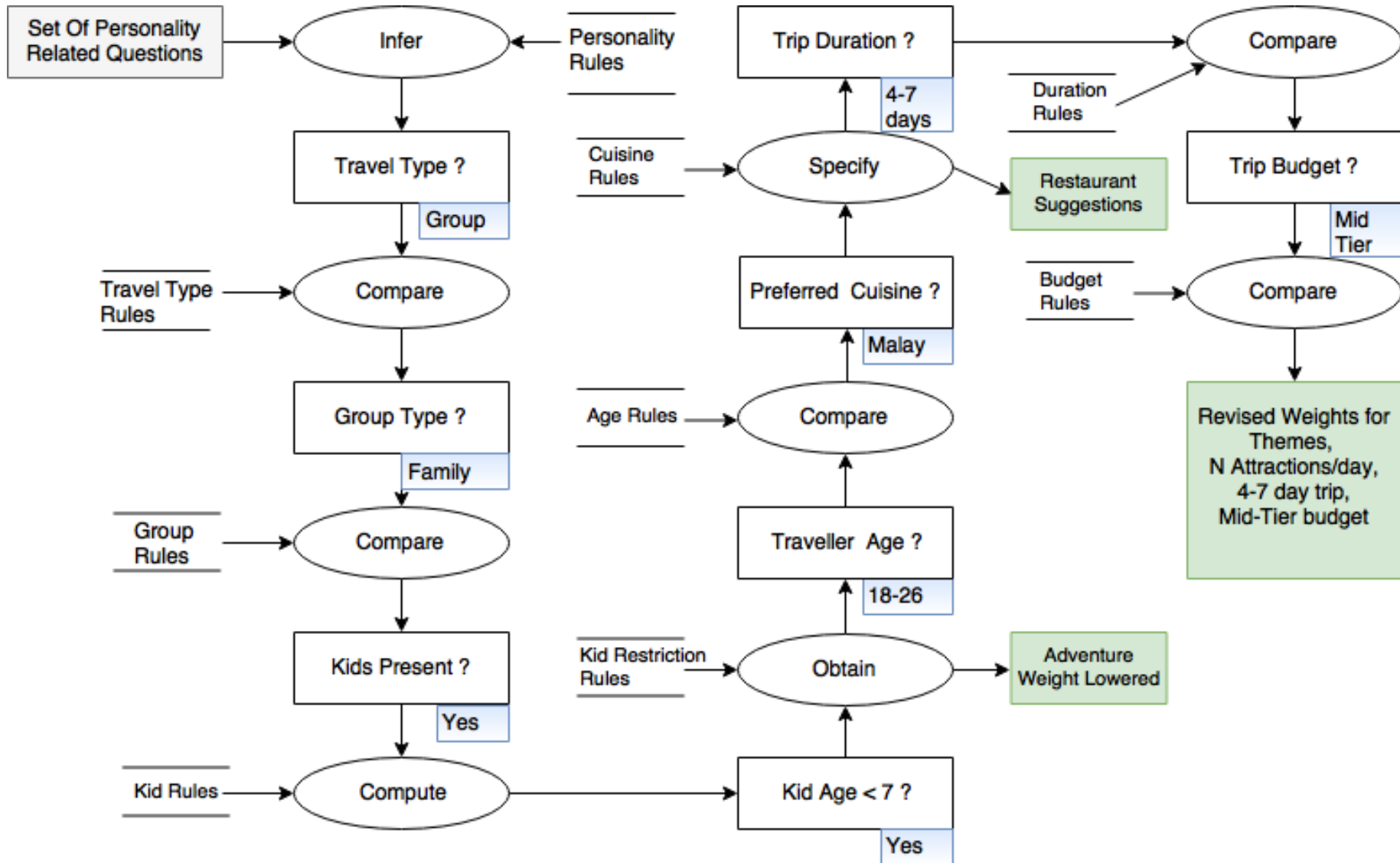
Survey Analysis

Survey 1: Travel Characteristics	Survey 2: Personality
Rules are derived using Association Rule Mining (apriori)	Rules are derived from Decision tree and Rule induction (PART and JRip)
Minimum support: 15% Confidence converted to CF	Target: 5 personalities. Node Classification accuracy of each rule considered for CF

Dependency Diagram

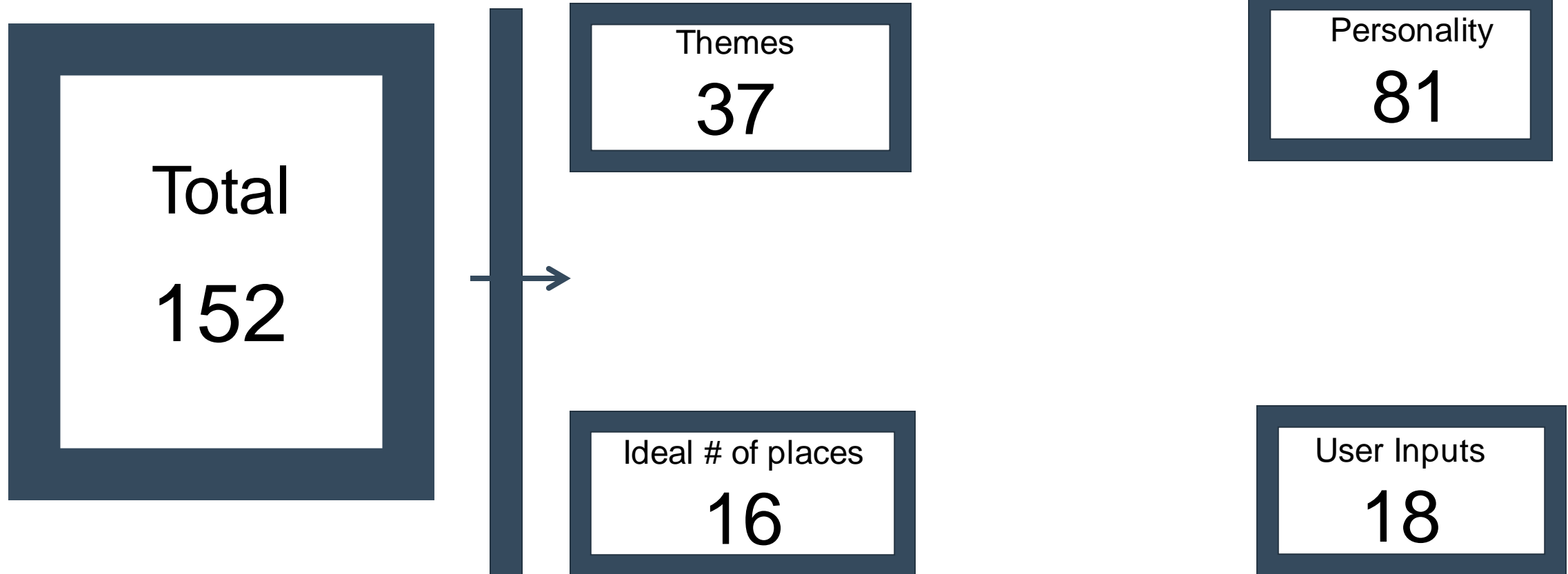


Inference Structure



Rulebase Structure

- Business Rules generated: 193
- Rules after optimization: 152



Scope & Assumptions

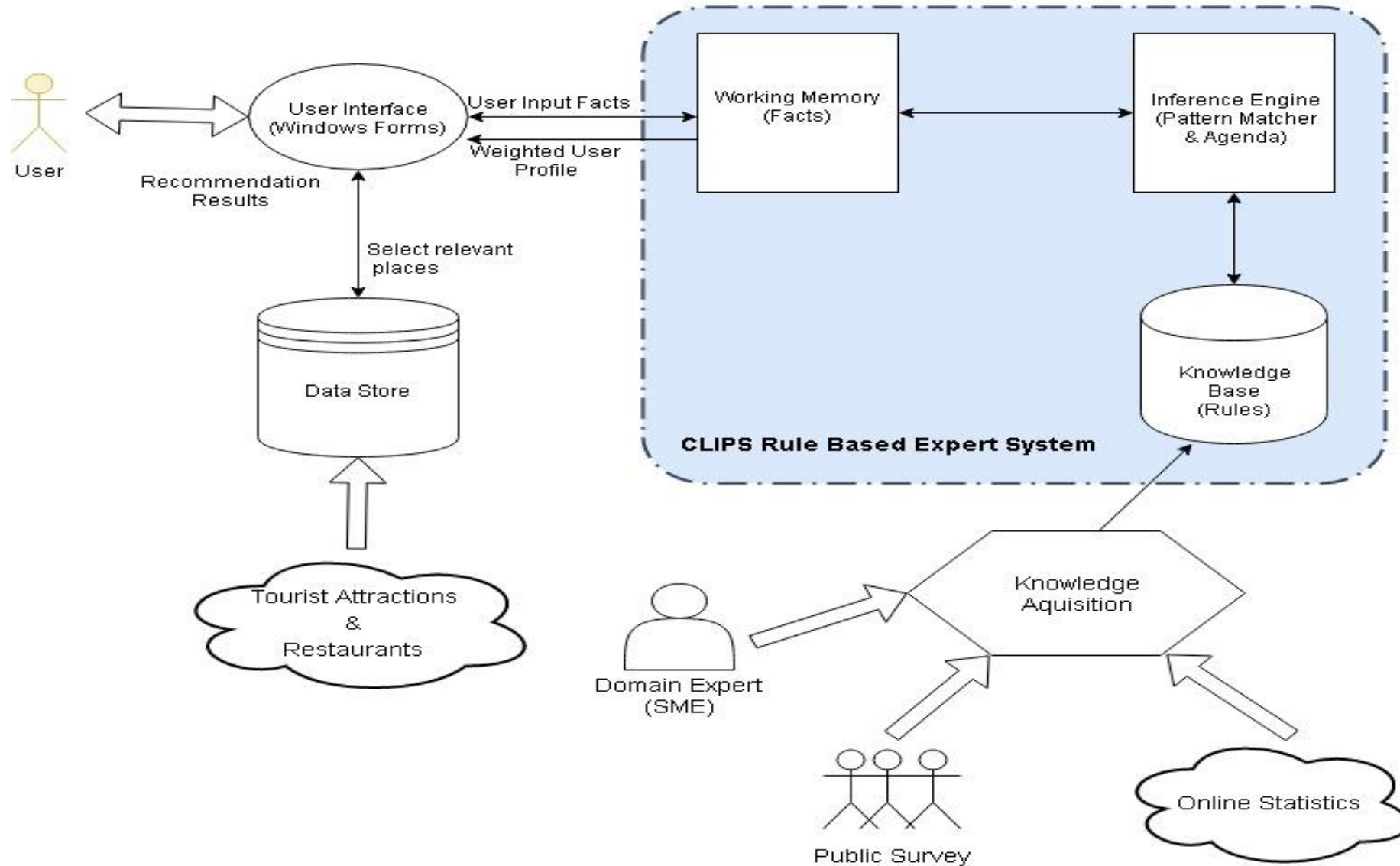
SCOPE

- Building a travel recommendation system in CLIPS which suggests the list of places based on user's choices.
- Travel destination is restricted to the country of Singapore.
- User's details and trip details are gathered along with the user travel persona to recommend places which suits them.

ASSUMPTIONS

- All travelers fall under one of the five travel personalities.
- Traveler will be taking care of their own flight tickets, accommodation and transport during their vacation.

System Architecture







Why Trippier??

- ✓ An intelligent travel agent for potential tourists (e.g. John) who want to explore new places of interest
- ✓ Multi-day personalized Itinerary
- ✓ Provides unique personality index of the customer
- ✓ Dynamic generation of localized attractions & restaurants
- ✓ Considers dynamic geospatial boundaries and projects places in an interactive map overlay

Limitations & Future Scope

Limitations

- Age group in our system does not cover senior citizens.
- Recommendations doesn't take into account the weather forecast of places suggested.
- Internet is required to display the google maps.

Future Scope

- Bundle travel packages instead of just Itinerary.
- Expand geography to cover other countries.
- Notifications on nearby local events the user might be interested in.
- Scale up the system to handle multiple concurrent requests.

References

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4. Singapore Tourism Board Tourism Statistics <http://www.singstat.gov.sg/statistics/browse-by-theme/tourism>
5. Age restrictions for theme parks <https://sg.theasianparent.com/universal-studios-singapore-ride-restrictions/>
6. Zomato API for Restaurants <https://developers.zomato.com/api>
7. Google Maps API <https://developers.google.com/maps/>

A top-down view of a wooden desk. In the center, a map is spread out. A pair of hands is holding a white cup with a red rim. To the left, a small succulent in a white pot sits on the desk. To the right, a black camera with a strap is visible. A pink sticky note and a piece of cardboard are also on the desk.

Thank You!

S p e c i a l T h a n k s T o :

- ☐ God
- ☐ Charles Pang T-Howe
- ☐ Felix Tan
- ☐ Desmond Sek
- ☐ Survey Participants