



**UNIVERSITI SAINS MALAYSIA**

**SCHOOL OF COMPUTER SCIENCE**

**ACADEMIC SESSION 2018/2019**

**SEMESTER 1**

**LOGIC & APPLICATION**

**PROLOG ASSIGNMENT (CPT 114)**

**PROLOG ASSIGNMENT**

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## 1. Article

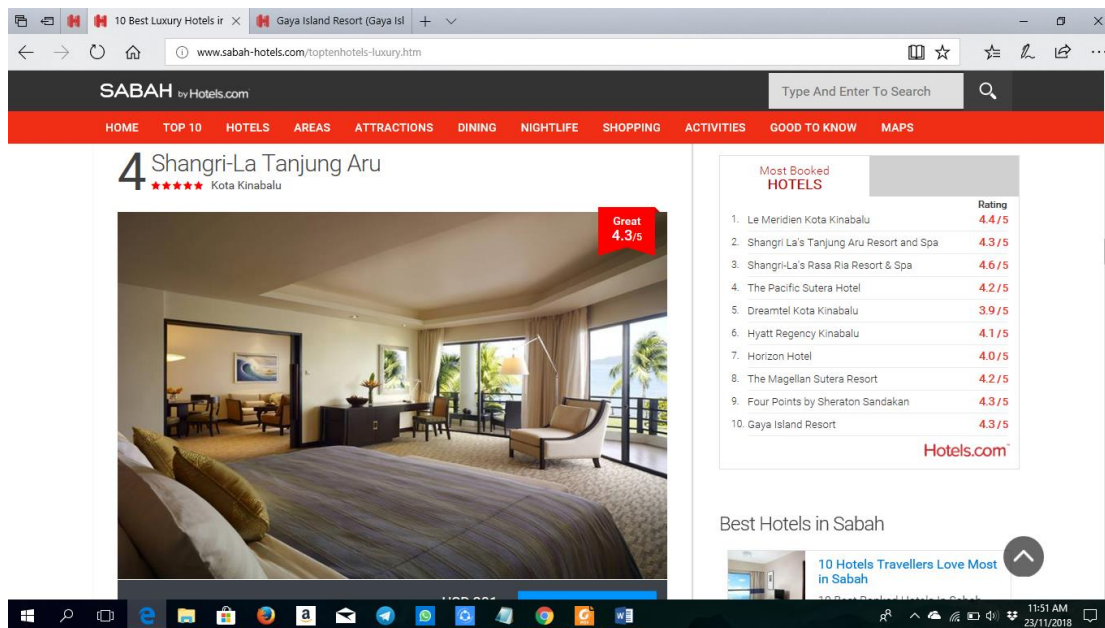
Known as the Land below the Wind, Sabah occupies a substantial portion of Borneo – the world's third largest island. Bordering Sarawak on its north-western flank, the state boasts a distinctive ethnic makeup and landscape. Featuring a lush mixture of verdant vegetation, exotic fauna and indigenous culture, Sabah's got a host of natural attractions ranging from Mount Kinabalu – Southeast Asia's highest peak – to the Semporna Archipelago. The capital, Kota Kinabalu, is a city that boasts more than few sightseeing attractions including the Sabah Museum and the Likas Bird Sanctuary. The state is best known as the jumping off point to begin your Borneo Island explorations.

### *1) Shangri-La Tanjung Aru*

Set on 25 acres of award-winning gardens dotted with palm trees and ornamental metal gongs, the five-star Shangri-la Tanjung Aru is one of our Top 10 Sabah Hotels. Just three kilometres away from the city centre, Shangri-la Tanjung Aru boasts 492 air con rooms with private balconies, en-suite bathrooms and Wi-Fi. Hotel facilities include an outdoor pool, aerobics centre, a children's pool, Jacuzzi, sauna, steam room, tennis court, beauty salon, mini-mart, library, florist, kids' club and the award-winning CHI spa. The property's range of dining ventures includes six bars and restaurants including the award-winning Peppino

Read more at:

<http://www.borneo-hotels.com/sabah/where-to-stay-sabah.htm?cid=ch:OTH:001>

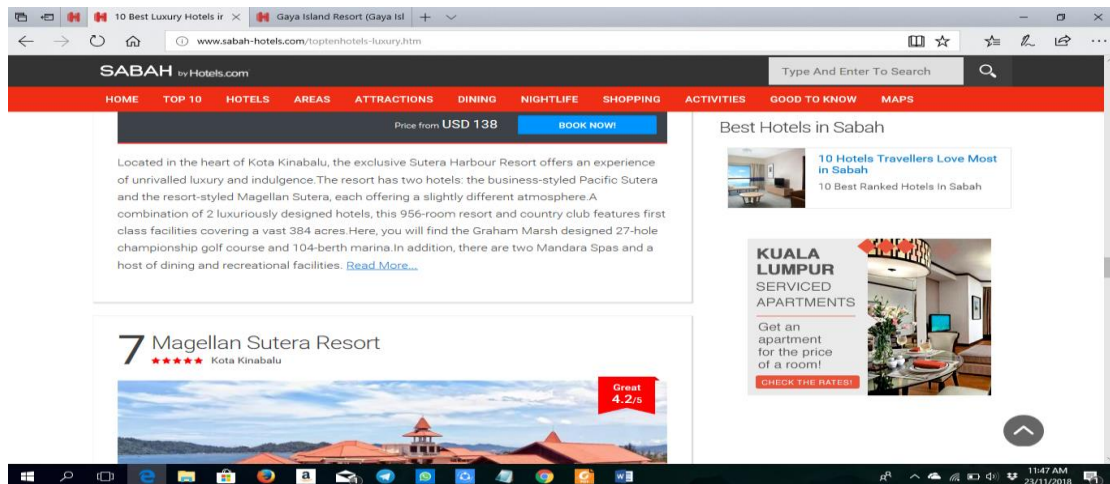
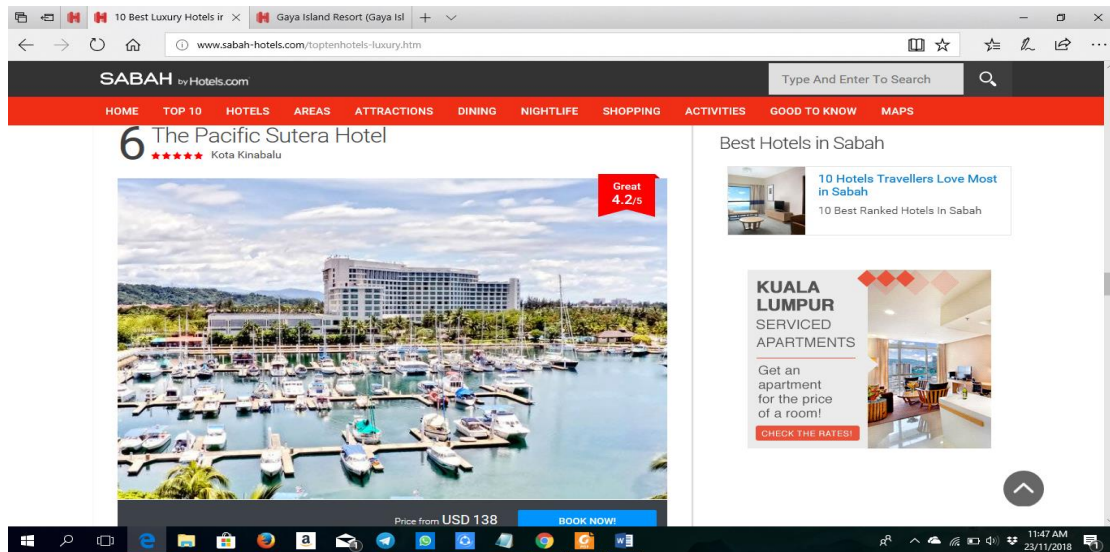


## 2) The Pacific Sutera Hotel

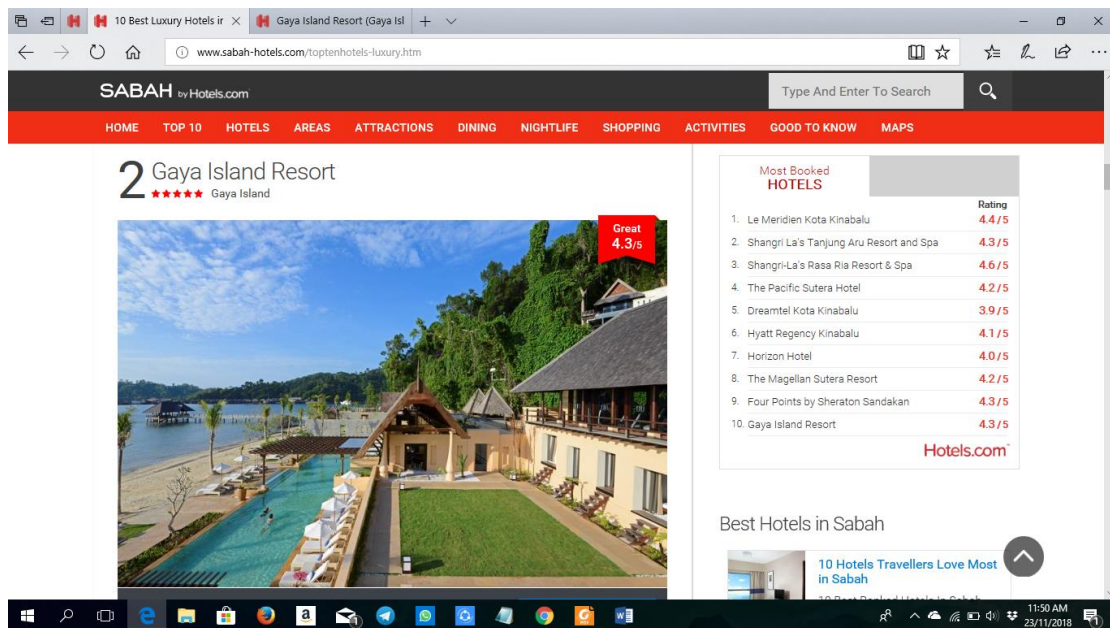
Located in the heart of Kota Kinabalu, the exclusive Sutera Harbour Resort offers an experience of unrivalled luxury and indulgence. The resort has two hotels: the business-styled Pacific Sutera and the resort-styled Magellan Sutera, each offering a slightly different atmosphere. A combination of 2 luxuriously designed hotels, this 956-room resort and country club features first class facilities covering a vast 384 acres. Here, you will find the Graham Marsh designed 27-hole championship golf course and 104-berth marina. In addition, there are two Mandara Spas and a host of dining and recreational facilities. Read More...

Read more at:

<http://www.sabah-hotels.com/toptenhotels-luxury.htm?cid=ch:OTH:001>



### 3) Gaya Island Resort



Gaya Island Resort is located on Pulau Gaya, the largest of a cluster of five islands that form the Tunku Abdul Rahman Marine Park, a natural conservation area off the coast of Borneo, close to Kota Kinabalu. Gaya Island Resort has a unique setting: the land is fringed with a golden sandy beach, rocky coastal outcrops, and surrounded by coral reefs. The hilly island landscape is covered with lush tropical rainforest and an abundance of flora and fauna. And to complete this perfect setting, visible in the distance, is the stunning outline of Mount Kinabalu. The guest villa exterior respects Sabahan architecture, uses local materials and blends harmoniously with the natural environment. Read More...

Read <http://www.sabah-hotels.com/toptenhôtels-luxury.htm?cid=ch:OTH:001> more at:

## 2. Summary

The article that has been taken is about the editor's guide to recommend best hotels in Sabah. This article concise of three hotels according to the stars and rate given.

Hotel's rating	3 Star Hotel	4 Star Hotel	5 Star Hotel
Hotel's name	The Pacific Sutera Hotel	Shangri-La Hotel Tanjung Aru	Gaya Island Resort
Price range	RM500-RM600	RM700-RM800	RM900-RM1000
Hotel Condition and recommended services	Basic Part:- -WiFi -Breakfast -Cleaning -Hygiene products -SPA -Wine -Map -Satellite phone -Safe deposit box -Meeting room Prime part:- -Private KTV	Basic Part:- -WiFi -Breakfast -Cleaning -Hygiene products -SPA -Wine Prime part:- -Map -Satellite phone -Safe deposit box -Meeting room -Private KTV	Basic Part:- -WiFi -Breakfast -Cleaning -Hygiene products Prime part:- -SPA -Wine -Map -Satellite phone -Safe deposit box -Meeting room -Private KTV




### 3. Problem Statement

The article that has been taken is to show differences for three hotels in Sabah. As one of the users, we found it a bit difficult to click and go through all the hotel suggestions thoroughly one by one. The solution we figured out is to use knowledge-based system. The expert system that we made is to guide the users by asking queries according to their hotel preferences. This way is less time-consuming and more efficient because the users do not have to waste their time reading all the suggestions but can straight away choose and get the details and information about the hotel suggestion that really suits with their preferable criteria. This knowledge base contains rules and queries to be asked to the users. This system will go through all the rule stated to find the answer that matched to the query. The information to be retrieved from this system is the user get to know what hotel suggestions in Sabah that suits with their criteria.




## 4. Sample List of Prolog Queries and answers

 SWI-Prolog (AMD64, Multi-threaded, version 7.6.4)

```
File Edit Settings Run Debug Help
Welcome to SWI-Prolog (threaded, 64 bits, version 7.6.4)
SWI-Prolog comes with ABSOLUTELY NO WARRANTY. This is free software.
Please run ?- license. for legal details.

For online help and background, visit http://www.swi-prolog.org
For built-in help, use ?- help(Topic). or ?- apropos(Word).

?- consult(jiudian).
```

 SWI-Prolog (AMD64, Multi-threaded, version 7.6.4)


```
File Edit Settings Run Debug Help
Welcome to SWI-Prolog (threaded, 64 bits, version 7.6.4)
SWI-Prolog comes with ABSOLUTELY NO WARRANTY. This is free software.
Please run ?- license. for legal details.

For online help and background, visit http://www.swi-prolog.org
For built-in help, use ?- help(Topic). or ?- apropos(Word).

?- consult(jiudian).
Warning: c:/users/acer/documents/prolog/jiudian.pl:79:
  Clauses of hotel/1 are not together in the source-file
  Earlier definition at c:/users/acer/documents/prolog/jiudian.pl:35
  Current predicate: item1/1
  Use :- disjoint(hotel/1, to suppress this message
Warning: c:/users/acer/documents/prolog/jiudian.pl:122:
  Clauses of hotel/1 are not together in the source-file
  Earlier definition at c:/users/acer/documents/prolog/jiudian.pl:35
  Current predicate: item2/1
  Use :- disjoint(hotel/1, to suppress this message
Warning: c:/users/acer/documents/prolog/jiudian.pl:168:
  Clauses of choice/1 are not together in the source-file
  Earlier definition at c:/users/acer/documents/prolog/jiudian.pl:26
  Current predicate: item3/1
  Use :- disjoint(choice/1, to suppress this message
Warning: c:/users/acer/documents/prolog/jiudian.pl:267:
  Clauses of choice/1 are not together in the source-file
  Earlier definition at c:/users/acer/documents/prolog/jiudian.pl:26
  Current predicate: hotel1/1
  Use :- disjoint(choice/1, to suppress this message
Warning: c:/users/acer/documents/prolog/jiudian.pl:292:
  Clauses of choice1/1 are not together in the source-file
  Earlier definition at c:/users/acer/documents/prolog/jiudian.pl:277
  Current predicate: selection7/1
  Use :- disjoint(choice1/1, to suppress this message
Warning: c:/users/acer/documents/prolog/jiudian.pl:307:
  Clauses of choice1/1 are not together in the source-file
  Earlier definition at c:/users/acer/documents/prolog/jiudian.pl:277
  Current predicate: selection8/1
  Use :- disjoint(choice1/1, to suppress this message
Warning: c:/users/acer/documents/prolog/jiudian.pl:320:
  Clauses of choice1/1 are not together in the source-file
  Earlier definition at c:/users/acer/documents/prolog/jiudian.pl:277
  Current predicate: selection9/1
  Use :- disjoint(choice1/1, to suppress this message
Warning: c:/users/acer/documents/prolog/jiudian.pl:327:
  Clauses of choice/1 are not together in the source-file
  Earlier definition at c:/users/acer/documents/prolog/jiudian.pl:26
  Current predicate: choice1/1
  Use :- disjoint(choice/1, to suppress this message

true.
?- go.
```




 SWI-Prolog (AMD64, Multi-threaded, version 7.6.4)

```
File Edit Settings Run Debug Help

?- go.

'WELCOME TO THE SABAH'
  Hotel Menu
  1. Hotel list
  2. Order
  3. RECOMMENDED SERVICE
  4. THE TEST HELP YOU CHOICE HOTEL


|: |
```

 SWI-Prolog (AMD64, Multi-threaded, version 7.6.4)

File Edit Settings Run Debug Help

The Hotel In Sabah

1. 5 Star Hotel (RM1000–RM900)
  2. 4 Star Hotel (RM800–RM700)
  3. 3 Star Hotel (RM600–RM500)
- |: 1.

 SWI-Prolog (AMD64, Multi-threaded, version 7.6.4)

File Edit Settings Run Debug Help


?- go.

'WELCOME TO THE SABAH'

Hotel Menu

1. Hotel list
2. Order
3. RECOMMENDED SERVICE
4. THE TEST HELP YOU CHOICE HOTEL

|: 1.█

 SWI-Prolog (AMD64, Multi-threaded, version 7.6.4)

File Edit Settings Run Debug Help

The Hotel In Sabah

1. 5 Star Hotel (RM1000–RM900)
  2. 4 Star Hotel (RM800–RM700)
  3. 3 Star Hotel (RM600–RM500)
- |: 1.

Hotel Condition.

-----  
The Basic part (This part is free)

1. WiFi
2. Breakfast
3. Cleaning
4. Hygiene\_products
5. SPA
6. Wine
7. Map
8. Satellite phone
9. Safe deposit box
10. Metting room

-----  
The Prime part (this part need the extra cost)

11. Private KTV

-----  
Please select any of the services.

|: 7.█

SWI-Prolog (AMD64, Multi-threaded, version 7.6.4)

File Edit Settings Run Debug Help

Hotel Condition.

-----  
The Basic part (This part is free)

1. WiFi
2. Breakfast
3. Cleaning
4. Hygiene\_products
5. SPA
6. Wine
7. Map
8. Satellite phone
9. Safe deposit box
10. Metting room

-----  
The Prime part (this part need the extra cost)

11. Private KTV

-----  
Please select any of the services.

|: 7.

The price of the item is RM 0.00

Do you want to continue to know the prices of other services in this hotel?

1. Yes

2. No

|: █

SWI-Prolog (AMD64, Multi-threaded, version 7.6.4)

File Edit Settings Run Debug Help

Do you want to continue to know the prices of other services in this hotel?

1. Yes

2. No

|: 1.

Hotel Condition.

-----  
The Basic part (This part is free)

1. WiFi
2. Breakfast
3. Cleaning
4. Hygiene\_products
5. SPA
6. Wine
7. Map
8. Satellite phone
9. Safe deposit box
10. Metting room

-----  
The Prime part (this part need the extra cost)

11. Private KTV

-----  
Please select any of the services.

|: █

SWI-Prolog (AMD64, Multi-threaded, version 7.6.4)

File Edit Settings Run Debug Help

Hotel Condition.

-----  
The Basic part (This part is free)

1. WiFi
2. Breakfast
3. Cleaning
4. Hygiene\_products
5. SPA
6. Wine
7. Map
8. Satellite phone
9. Safe deposit box
10. Meeting room

-----  
The Prime part (this part need the extra cost)

11. Private KTV

-----  
Please select any of the services.

| : 11.

The price of the item is RM 150.0 (per person)

Do you want to continue to know the prices of other services in this hotel?

1. Yes

2. No

| : 2.

SWI-Prolog (AMD64, Multi-threaded, version 7.6.4)

File Edit Settings Run Debug Help

Do you want to continue to know the prices of other services in this hotel?

1. Yes

2. No

| : 2.

SWI-Prolog (AMD64, Multi-threaded, version 7.6.4)

File Edit Settings Run Debug Help

Do you want to continue to know the prices of other services in this hotel?

1. Yes

2. No

| : 2.

Hotel Menu

1. Hotel list
2. Order
3. RECOMMENDED SERVICE
4. THE TEST HELP YOU CHOICE HOTEL

| : 2. █

SWI-Prolog (AMD64, Multi-threaded, version 7.6.4)

File Edit Settings Run Debug Help

The Hotel In Sabah

1. 5 Star Hotel
2. 4 Star Hotel
3. 5 Star Hotel

| : 2.

```

SWI-Prolog (AMD64, Multi-threaded, version 7.6.4)
File Edit Settings Run Debug Help
The price of the item is RM 150.0 (per person)

The Hotel In Sabah
1. 5 Star Hotel
2. 4 Star Hotel
3. 5 Star Hotel
|: 2.

The PRICE in 4 Star Hotel.

=====
Check in - check out
Check in - check out (enter the number of days) |: 5.
=====
The Prime part
Map
Satellite phone
Safe deposit box
Metting room
Private KTV

Map |: 0.
Satellite phone |: 0.
Safe deposit box |: 1.
Metting room |: 0.
Private KTV (enter the umber of person) |: 1.

=====
Dear sir/madam your bill is : RM4450.0
=====
true.

?- go.

```

```

SWI-Prolog (AMD64, Multi-threaded, version 7.6.4)
File Edit Settings Run Debug Help
true.


?- go.
'WELCOME TO THE SABAH'
Hotel Menu
1. Hotel list
2. Order
3. RECOMMENDED SERVICE
4. THE TEST HELP YOU CHOICE HOTEL
|: 3.

```

```

SWI-Prolog (AMD64, Multi-threaded, version 7.6.4)
File Edit Settings Run Debug Help
The system recommned service in each type of hotel
Choose from:
1. 5 Star Hotel
2. 4 Star Hotel
3. 3 Star Hotel
4. Return to menu
|: 3.

```

 SWI-Prolog (AMD64, Multi-threaded, version 7.6.4)

File Edit Settings Run Debug Help

The system recommned service in each type of hotel

Choose from:

1. 5 Star Hotel
2. 4 Star Hotel
3. 3 Star Hotel
4. Return to menu


|: 3.

The system recommned service in 3 star hotel is :  
SPA, Wine

Do you want to know the recommned service of the other hotel?

1. Yes
2. No

|: 2. █


 SWI-Prolog (AMD64, Multi-threaded, version 7.6.4)

File Edit Settings Run Debug Help

Hotel Menu

1. Hotel list
2. Order
3. RECOMMENDED SERVICE
4. THE TEST HELP YOU CHOICE HOTEL

|: 4.

 SWI-Prolog (AMD64, Multi-threaded, version 7.6.4)

File Edit Settings Run Debug Help

You can take a look of the prices given.

Price range:

- RM500-RM600
- RM700-RM800
- RM900-RM1000

What is your budget range?: RM700-RM800.

SWI-Prolog (AMD64, Multi-threaded, version 7.6.4)

File Edit Settings Run Debug Help

You can take a look of the prices given.

Price range:

RM500-RM600

RM700-RM800

RM900-RM1000

What is your budget range?: RM700-RM800.

\*\*\*\*\*

-Room services-

Here a several type of service provided.

Room types:

WiFi

SPA

Satellite phone

Which type of service you want?: WiFi.

SWI-Prolog (AMD64, Multi-threaded, version 7.6.4)

File Edit Settings Run Debug Help

You can take a look of the prices given.

Price range:

RM500-RM600

RM700-RM800

RM900-RM1000

What is your budget range?: RM700-RM800.

\*\*\*\*\*

-Room services-

Here a several type of service provided.

Room types:

WiFi

SPA

Satellite phone

Which type of service you want?: WiFi.

\*\*\*\*\*

The hotel is: 3 Star hotel

The rule used was Number 1

**true** .

?- █