DISCRETE MATHEMATICS – KS091201

Development of Simple Expert System for Events Guide

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PROJECT INFORMATION

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SUBMISSION

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ABSTRACT

Have you ever heard of tourism? If you ever heard about it, we are sure that you have already known about tourist guide. And also, tourist always wanted to visit special occasion and events in his tour area.

Expert systems are a class of computer programs that can advise, analyze, categorize, communicate, consult, design, diagnose, explain, explore, forecast, form concepts, identify, interpret, justify, learn, manage, monitor, plan, present, retrieve, schedule, test, and tutor. They address problems normally thought to require human specialist for their solution.

With expert system, we can make solutions for handling events guide, so the information can gathered and well displayed by tourist guide, so it can passed to the tourist with effective and efficient.

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ACKNOWLEDGEMENT

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CHAPTER 1
INTRODUCTION

1.1 Background

Indonesia is a country with many kind of tourism object and many kind of events that attracts tourist to visit the objects and events. Therefore, every event must be organized and campaign it, so the tourist have desire to visit Indonesia.

To organized whether the events held, the location, and celebration days, we have to design a system that help tour guide to inform tourist about these problems.

1.2 Problem Statement

Many tour guide don't have any data or information about events or occasion which is very good for tourist to be visited. Usually a tour guide search the events manually from sorting n looking for information to every location. It is considered as not effective and efficient as well. Therefore we have to find an make a system that can covered every events held in every location, to make tour guide being easy informing tourist, about what happened in the city and what events that proper to visited.

1.3 Scope

The scope of the system is every single tour guide in Indonesia who do not have a simple system to organize occasion and events nearby.

1.4 Objectives

The objectives for the Expert System is to help tour guide get some information about events that have been occurred, happening, and will happen in certain area. For this project, we will try around Surabaya area.

1.5 Benefits

The benefits for the Expert System is to minimize business process of tour guides, and manage their information about local events that have been occurred, happening, and will happen in Surabaya.

CHAPTER 2
LITERATURE REVIEW

2.1 Expert System

Expert systems are a class of computer programs that can advise, analyze, categorize, communicate, consult, design, diagnose, explain, explore, forecast, form concepts, identify, interpret, justify, learn, manage, monitor, plan, present, retrieve, schedule, test, and tutor. They address problems normally thought to require human specialist for their solution.

Expert System has many points of contact with operation research, business process, and various topics in applied mathematics and management science.

There are various expert systems in which a rulebase and an inference engine cooperate to simulate the reasoning process that a human expert pursues in analyzing a problem and arriving at a conclusion. In these systems, in order to simulate the human reasoning process, a vast amount of knowledge needed to be stored in the knowledge base.

Generally, the knowledge base of such an expert system consisted of a relatively large number of "if then" type of statements that were interrelated in a manner that, in theory at least, resembled the sequence of mental steps that were involved in the human reasoning process.

There are many capabilities by using Expert Systems, such as develop functional system requirements, coordinate software development, perform knowledge acquisition, process analysis, data analysis, system verification, design, develop, and implement an intelligent system using G2 software products.

Typically, there are many benefits by using Expert Systems, here are some benefits :

- Reduced error due to automation of tedious, repetitive or critical tasks
- Reduced manpower and time required for system testing and data analysis
- Reduced costs through acceleration of fault observations
- Increased visibility into the state of the managed system

2.2 Prolog

Prolog is a general purpose programming language associated with artificial intelligence and computational linguistics. Prolog represents a formal logic, and unlike other programming language, Prolog is declarative. The first Prolog system was first developed by Alain Colmerauer and Phillipe Roussel.

Prolog was one of the first logic programming languages, and remains among the most popular such languages today, with many free and commercial implementations available.

While initially aimed at natural language processing, the language has since then stretched far into other areas like theorem proving, expert systems, games, automated answering systems, ontologies and sophisticated control systems. Modern Prolog environments support the creation of graphical user interfaces, as well as administrative and networked applications.

CHAPTER 3
EXPERT SYSTEM DESIGN

For the Expert System, we have build some flowchart, to understand how the program works.

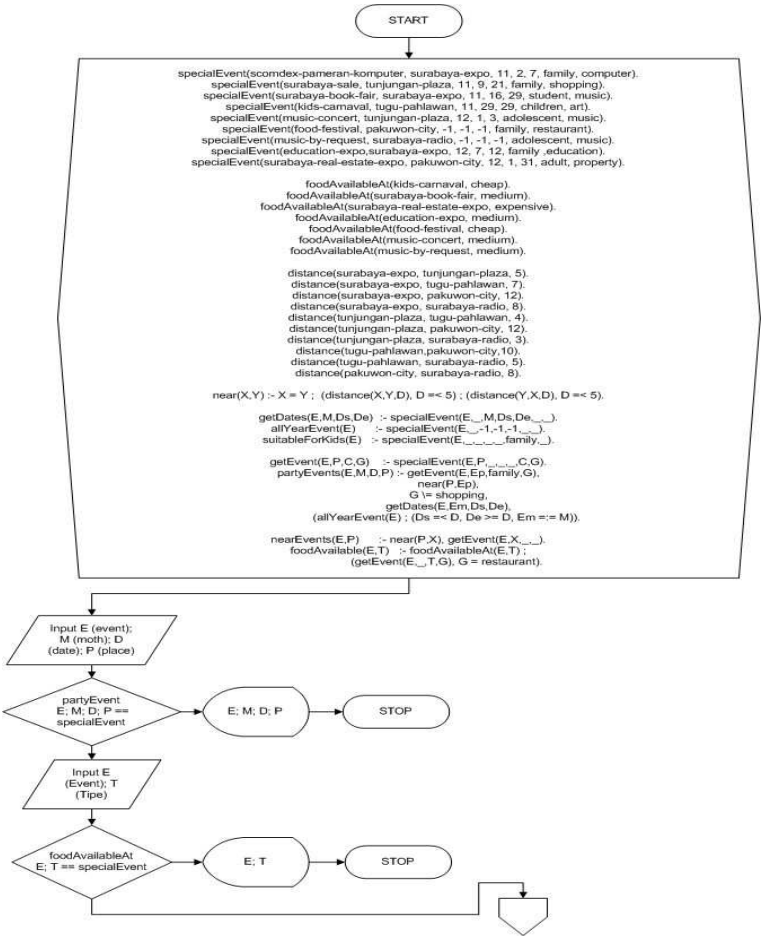

Figure 3.1 Flowchart

As we see in the flowchart, the fact and rules depict the first decision progress from the input. The result is depict with output from the single input above. It will carry on the fact that have been inputted, so the answer will filtered out during the progress of fact and rules.

CHAPTER 4
EXPERT SYSTEM DEVELOPMENT

The development for Expert System is using Prolog program. Thus, we have to conclude the fact and rules for the Expert System. With Prolog, we use a declarative method for expressing the program.

Fact and rules :

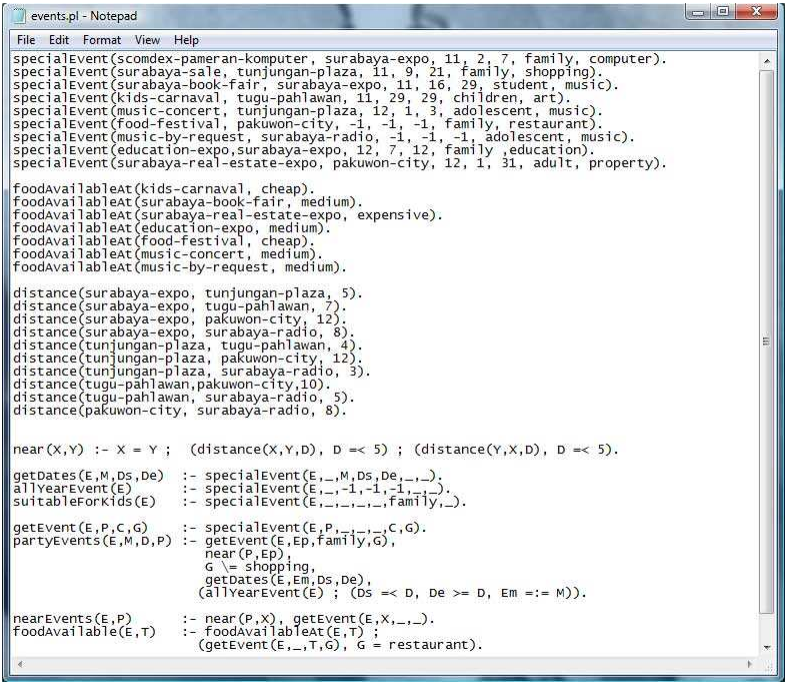

Figure 4.1 Fact and Rules

The code means that the end-user must enter the right queries for looking anything suitable for the search. If end-user want to search information about party events

date, then the syntax/command is partyEvents(E,M,D,P). For looking any information about event nearby points of interest, the command is nearEvents(E,P). If end-user want to look any information about food that available nearby events visited, the command is foodAvailable(E,T). and the last one, if end-user wants to find events based on age category, the command is getEvent(E,P,C,G).

CHAPTER 5
EXPERT SYSTEM TEST CASE

As described on Chapter 4, we can use and transform the Expert System in Prolog language. Therefore, we must check the capability of the program.

5.1 Testing

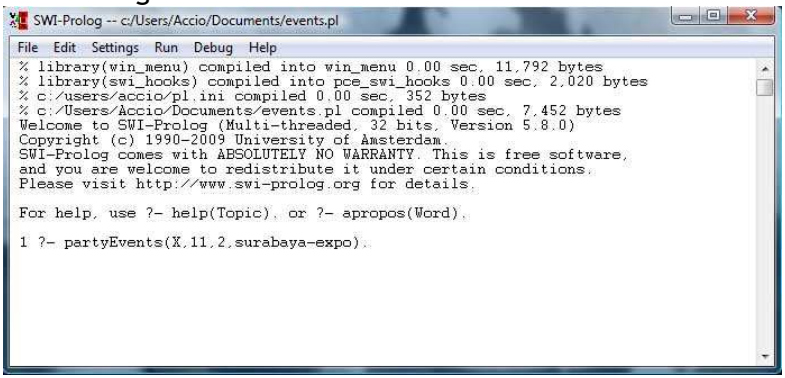

Figure 5.1 Test Case 1

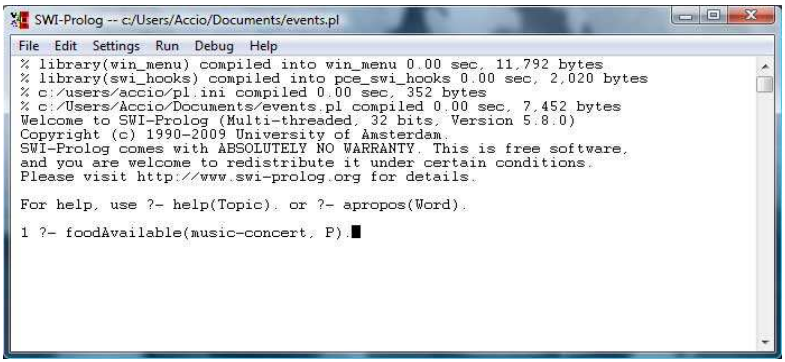

Figure 5.2 Test Case 2

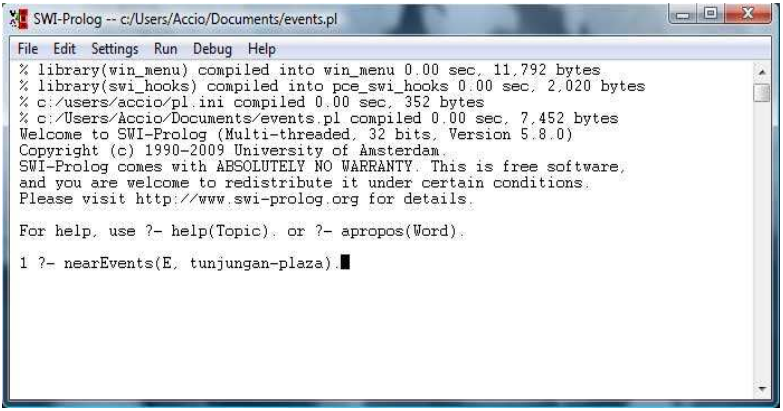

Figure 5.3 Test Case 3

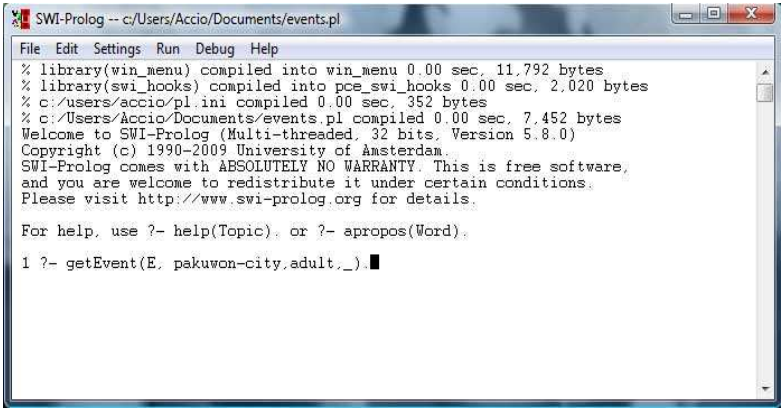

Figure 5.4 Test Case 4

5.2 Result

After we conclude the Test, here are the results.

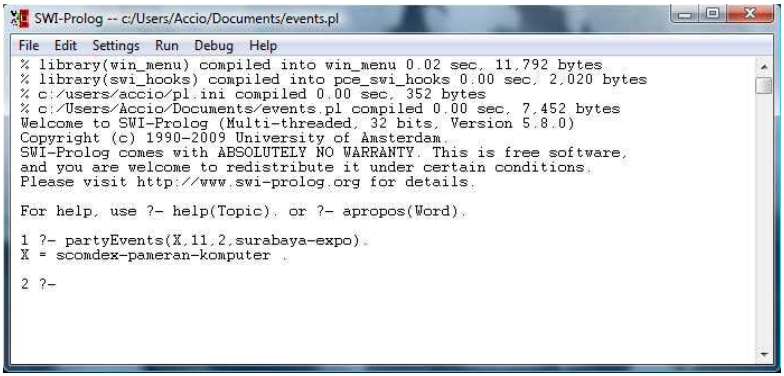

Figure 5.5 Result 1

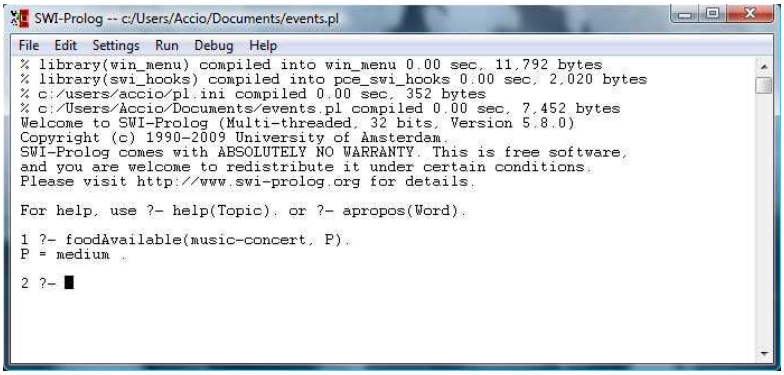

Figure 5.6 Result 2

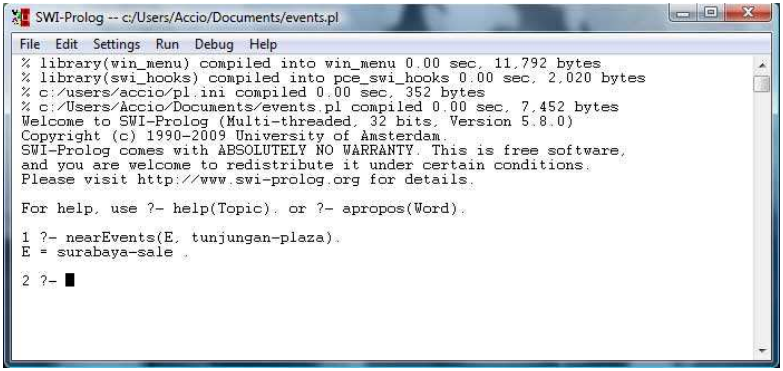

Figure 5.7 Result 3

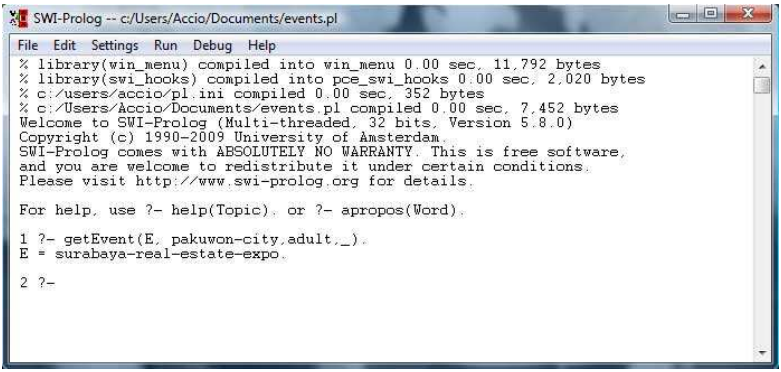

Figure 5.8 Result 4

CHAPTER 6
CONCLUSION

6.1 Conclusion

The Expert System is capable to find nearest event, date of events, location of nearest food available, and more. This program has a good function to search about tourism information for events and special occasion.

6.2 Suggestion

In the future, authors has desire to improve the Expert System program. Therefore, authors want some feedback to improve and know what suggestion that can be implement for the goodness of the program.

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