A DEVELOPMENT OF WEB-BASED BERNESE AUTOMATED GLOBAL POSITIONING SYSTEM PROCESSING PACKAGE

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To my beloved mother and father

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ABSTRACT

The Bernese Processing Engine (BPE) in the form of the scripts can be designed to run Bernese programs in an automated mode, and at the same time it can be made accessible online through the internet. By using the internet, more than one computer can run Bernese programs and in turn the program can be executed simultaneously by the same computer. Therefore a single script is needed to control all over the Bernese program, the automated mode of program, interfacing on the web server, the link with the internet, and interaction with the online users at the same time, especially on the user-friendly Windows Operating System. The research methodology which is used is the designing and development of the Automation Script on the website in a personal application server. The server is built by transforming a personal computer using Internet Information Service (IIS). The website for server is developed and simulated by using hypertext technologies of Common Gateway Interface (CGI) and Hyper Text Markup Language (HTML), and interface between server and users is built to link processing area of Bernese software and internet access. The automatic process of Bernese uses the raw data of Global Positioning System (GPS) and the result is compared with manual processing. Through this research Bernese processing software version 4.2 shows that the program can be modified to run in automatic process and on the web server. The knowledge of development of the Web-based Global Positioning System (GPS) automated mode will be made accessible for contribution and dissemination of the automated solutions of the GPS data from International GPS Service (IGS) stations and helping other projects to produce straightforward results, particularly for the Universiti Teknologi Malaysia (UTM).

ABSTRAK

Bernese Processing Engine (BPE) di dalam bentuk skrip boleh digunakan untuk menjalankan program Bernese dalam bentuk automatik, dan pada masa yang sama ia boleh diakses pada bila-bila masa melalui internet. Dengan menggunakan internet, lebih daripada satu komputer boleh digunakan untuk menjalankan program Bernese dan pada masa yang sama program itu boleh dipakai secara berterusan dengan menggunakan komputer yang sama. Dengan itu satu skrip khas diperlukan untuk mengawal penggunaan program Bernese, mod automatik daripada program, bersaling tindak dengan web server, hubungan dengan internet, dan interaksi dengan pengguna internet pada masa yang sama; khasnya bagi penggunaan sistem operasi Windows. Metodologi yang digunakan adalah dengan merekabentuk dan membangunkan skrip automatik pada aplikasi laman-web peribadi. Server dibina dengan menukarkan komputer peribadi yang menggunakan *Internet Information Service* (IIS). Untuk server dibangunkan dan disimulasikan dengan menggunakan teknologi *Common Gateway Interface* (CGI) dan *Hyper Text Markup Language* (HTML), interaksi antara server dan pengguna dibina untuk memproses perisian Bernese dan mengakses internet. Program automatik Bernese menggunakan data awal daripada *Global Positioning System* (GPS) dan hasilnya dibandingkan dengan penghitungan secara manual. Program Bernese memperlihatkan bahawa program itu boleh digunakan untuk proses automatic dan penggunaan server. Pengetahuan dalam pembangunan web berasaskan GPS Bernese automatik akan memudahkan penggunaan dan perluasan hasil-hasil automatik data GPS dari stesen servis antarbangsa GPS dan membantu projek-projek lain untuk menghasilkan data yang cepat, khususnya untuk penggunaan di Universiti Teknologi Malaysia (UTM).