Location-based Mobile Tour Guide to Anuradhapura

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Declaration

We declare that this thesis is our own work and has not been submitted in any form for another degree or diploma at any university or other institution of tertiary education. Information derived from the published or unpublished work of others has been acknowledged in the text and a list of references is given.

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Abstract

Anuradhapura is one of the oldest continuously inhabited cities in the world and is a home to a wealth of best-preserved Buddhist art treasures and hence it attracts millions of people all around the world for thousands of years. However, in the long-term protection and exploitation, Anuradhapura has been in the dilemma between cultural relic protections and tourism developments.

Tourism is one of the largest industries in today's world economy and is a great source of foreign exchange for many developing countries. People travel from one place to another regularly for their work or holidays and of course the holiday experience is a business with unlimited resources. Although the holidays that are fitted to suit the individual needs are offered, there is one issue regarding tourism that has not been changed for many years, the traditional tourist maps and guidebooks.

The "Mobile tourism" represents a relatively new trend in the field of tourism and involves the use of mobile devices as electronic tourist guides. While much of the underlying technology is already available, there are still open challenges with respect to design, usability, portability, and functionality and implementation aspects. In the present work, the technologies of wireless network, mobile communication and geographical information were employed and a Digital Anuradhapura district oriented Mobile Tour Guide (MTG) architecture was established and then a location-based MTG for Anuradhapura was designed. This helps give services such as identifying the important places with location and distance in the map, possible paths available and the shortest path to reach the place. In addition, a brief description about the historical places and the information on visiting hours, parking lots, lodge facilities, filling stations, and medical centers are shown. It also exhibits a MTG prototype on the top of Java 2 Micro Edition (J2ME) which offers an ideal platform for the development of full-fledged, interactive and portable applications tailored for resource-constrained mobile devices.

Contents

List of Figures

List of Tables

List of Abbreviation

AGPS	Assisted GPS
API	Application Programming Interface
BC	Before Christ
CLDC	Connected Limited Device Configuration
CPU	Central Processing Unit
EU	European Union
FCE	Future Computing Environments
GIS	Geographical Information Systems
GMT	Greenwich Middle Time
GNSS	Global Navigation Satellite System
GPRS	General Packet Radio
GPS	Global Positioning System
GVU Center	College of Computing and the Graphics, Visualization and Usability
IR	Infar Raid
J2ME	Java 2 Micro Edition
KVM	Kilo Virtual Machine
MASE	Mobile Application Support Environment
MIDP	Mobile Information Device Profile
MSDN	Microsoft Developer Network
MTG	Mobile Tour Guide
PC	Personal Computer
PDA	Personal Digital Assistants
ROM	Read Only Memory
UMTS	Universal Mobile Telecommunications System