



Ministry of Science and Technology
University of Computer Studies, Yangon



Agenda

- The History of UCSY
- The location of UCSY
- Degree and Courses
- Departments & Faculty Status
- The Students for the 2012-2013 Academic Year
- Learning Facilities & Learning Activities
- Internet Communication Infrastructure
- International Cooperation Projects
- Research Lab
- Current Research Areas

The History of UCSY



• In 1971, it was founded as UCC, the Universities' Computer Center.

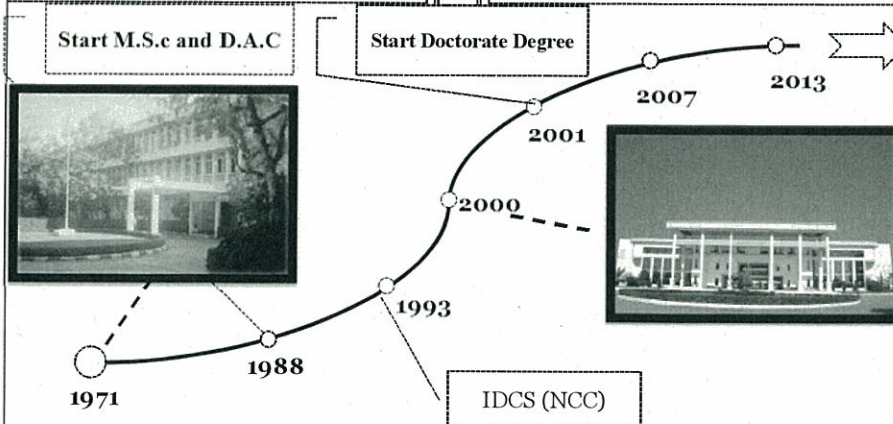
• In 1988, it was established as Institute of Computer Science and Technology (ICST)



• On July 1, 1998, the Institute was changed to University of Computer Studies, Yangon under control of Ministry of Science and Technology.

- Conducting teaching and research in computer science and technology to meet the growing need for advanced computer education in Myanmar.
- Offers undergraduate, postgraduate degree and doctoral degree in ICT field.
- New Strategy for Private-Public-Partnership (PPP) policy

The Roadmap of UCSY




- ❑ In 1971, it was founded as UCC, the Universities' Computer Center.
- ❑ In 1988, it was established as Institute of Computer Science and Technology (ICST).
- ❑ On July 1, 1998, the Institute was changed to University of Computer Studies, Yangon under control of Ministry of Science and Technology.

Degree and Courses

Doctorate Degree

In 2001 May, the Ph.D. program was started.

- Artificial Intelligence
- Bio Informatics
- Computer Architecture ,Control
- Database Systems
- Digital Signal Processing Image Processing
- Internet Technologies
- Network Security
- Parallel and Distributed Computing
- Software Engineering



Bachelor Degree

B.C.Sc. (Bachelor of Computer Science)
 B.C.Tech. (Bachelor of Computer Technology)
 B.C.Sc. (Honors)
 B.C.Tech. (Honors)

Master Degree

M.C.Sc. (Computer Science)
 M.C.Tech. (Computer Technology)
 M.I.Sc. (Information Science)
 M.A.Sc. (Applied Science)

Post-graduate diploma


D.C.Sc.(Diploma in Computer Science)

Departments

Academic	Department of Software Technology	Department of Myanmar
	Department of Hardware Technology	Department of Research and Development
	Department of Information Science	Department of System Program
	Department of Application	Department of Financial
	Department of Computational Math:	Department of Staff Affair
	Department of Physics	Department of Student Affair
Department of English	Department of Operation Division	Management


Faculty Status


Ph.D			M.C.Sc.	M.I.Sc.	M.A.Sc.	M.C.Tech.	M.S.c.		M.A (Myanmar)	M.A (English)	B.A (English)	B.Com.	B.Econ.
IT	CHT	Maths					Maths	Phys					
42	2	1	36	21	4	5	7	3	4	10	4	3	1
Total			143										

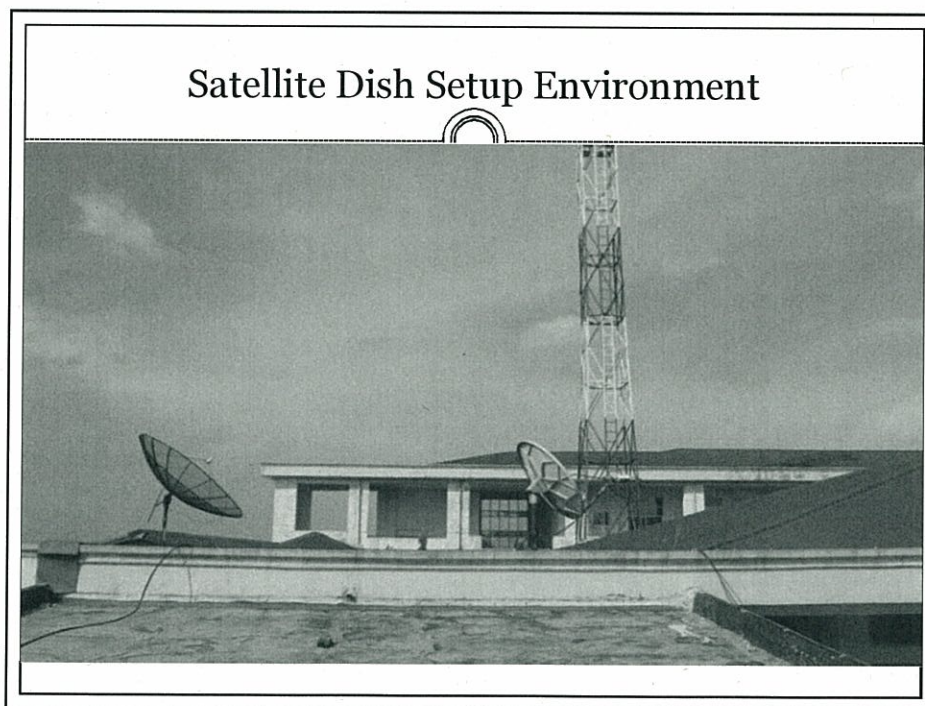
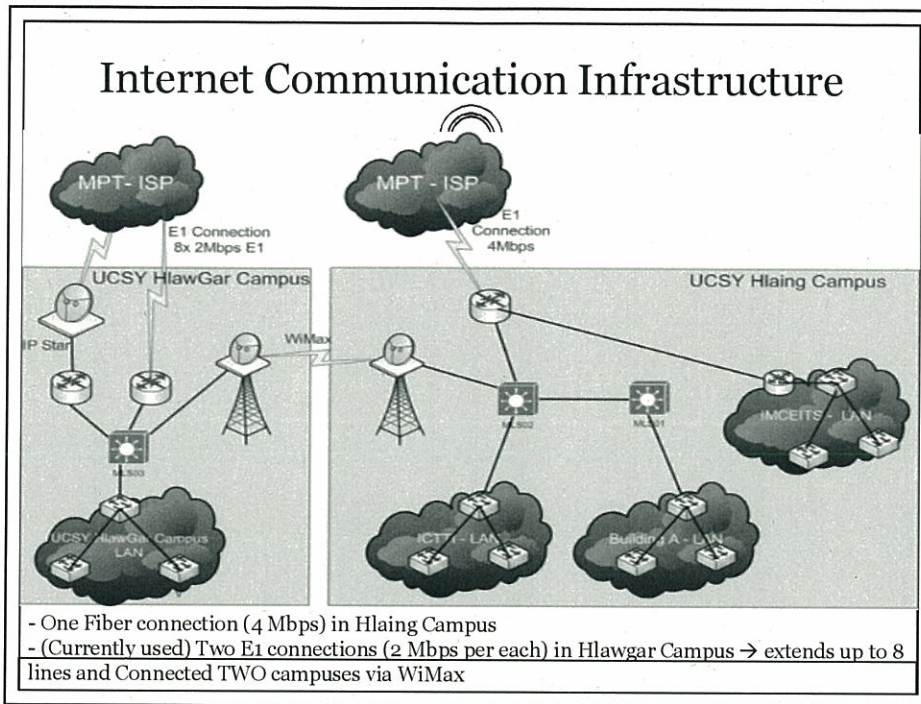


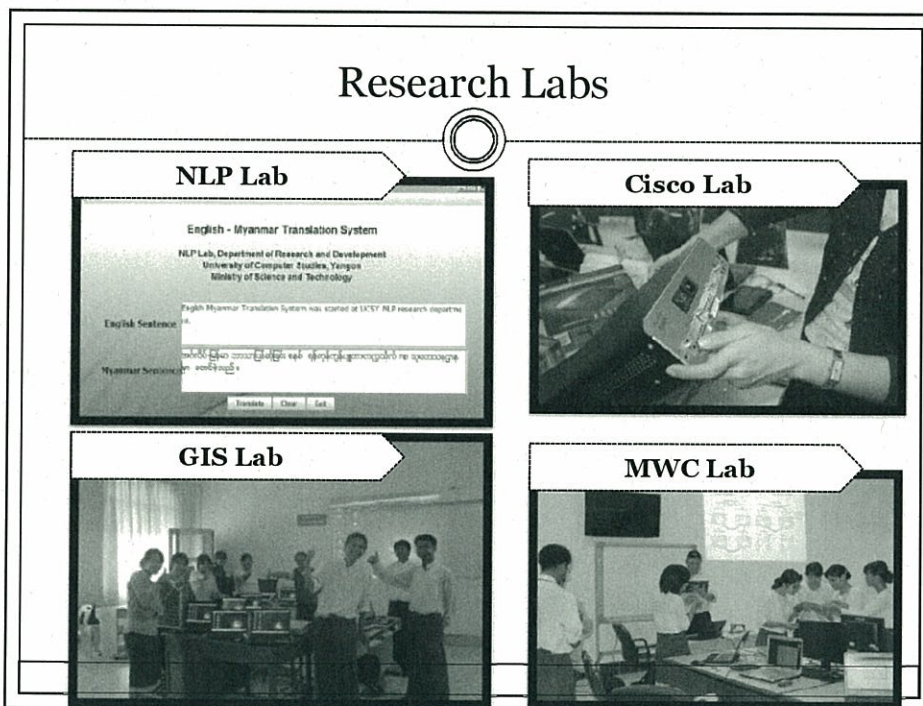
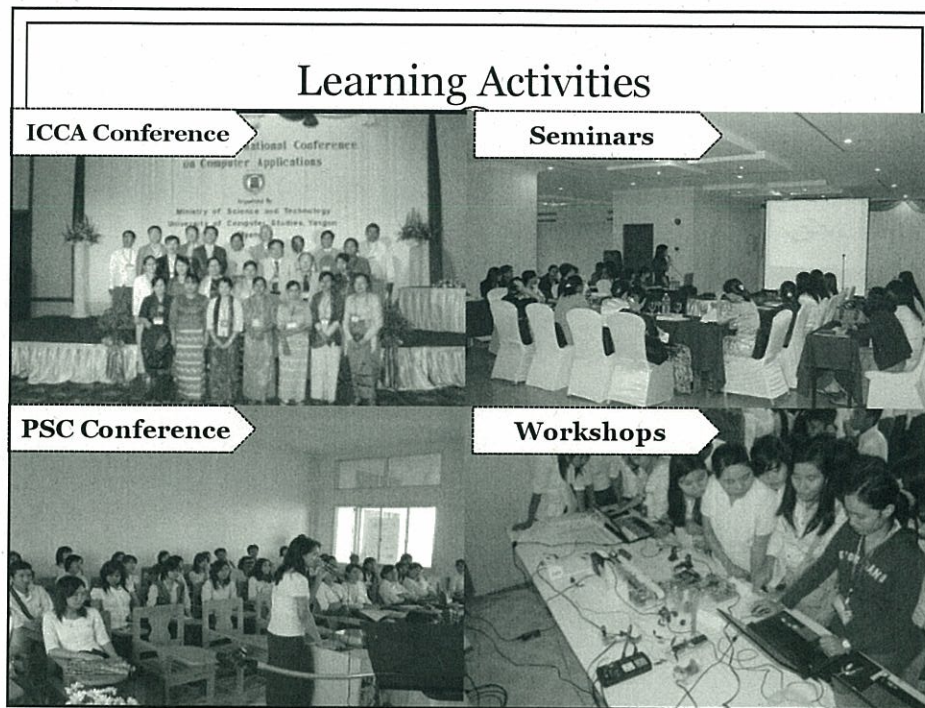
The Students for the 2012-2013 Academic Year

P.hD		M.C.Sc (Course Work)		M.C.Tech (Course Work)		M.C.Sc (Thesis)		M.C.Tech (Thesis)		B.C.Sc (Hons:)		B.C.Tech (Hons:)		B.C.Sc (Third yrs)		B.C.Tech (Third yrs)		B.C.Sc (Second yrs)		B.C.Tech (Second yrs)		First Year	
M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
3	61	6	122	5	26	13	180	3	27	9	109	1	3	145	518	44	50	172	622	38	32	380	580
Total				3149																			





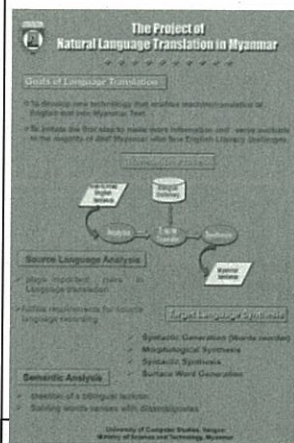




Current Research Areas

- Natural Language Processing Project

<http://www.nlpresearch-ucsy.edu.mm>



Myanmar Intelligent Character Recognition (MICR) and Myanmar Voice Mixer (MVM) System

English-Myanmar / Myanmar-English Translation System

Myanmar Named Entity Identification (NEI) and Transliteration to English

Myanmar-English-Myanmar Dictionary

Developing English-Myanmar Parallel Corpus

Myanmar Word Segmentation

Myanmar Spell Checker

Fontscript and Language Identification

Japanese -Myanmar Statistical Machine Translation System

English-Sgaw-Kayin Translation System

Past Research Achievements

- English-Myanmar Parallel Text Alignment
- Myanmar Name Entity Recognition
- Myanmar Word Segmentation
- Myanmar Word Sorting
- English-Sgaw Kayin Machine Translation System
- Myanmar-English-Myanmar Dictionary
- Myanmar Spell Checking

Ongoing Researches



- English-Myanmar Machine Translation System
- ASEAN Languages Translation Project with NECTEC
- Myanmar-English Machine Translation System
- Multilingual Dictionary
- Sentence level Myanmar Spell Checking
- Myanmar Information Retrieval System

UCSY, Myanmar

Parallel Text Alignment



- Aligning the sentences that have the same correspondence.
- Works on given parallel paragraphs in English and Myanmar
- Calculate statistical on length of character to find the correspondences.
- To help getting training data for Machine Translation system, word sense disambiguation and bilingual dictionary.

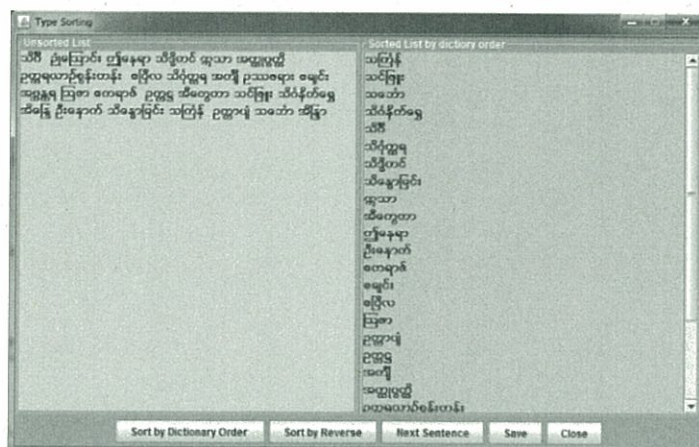
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Myanmar Word Sorting

- Myanmar sorting is complex for its syntax.
- Myanmar sorts not only in alphabetically but also its sounds of sorting within the same alphabet.
- Pali(Patsint) and Sanskrit(Kinsee) syllables can also be sorted
- Embedded in English-Myanmar-English Dictionary, Myanmar Spell checking and Myanmar Information Extraction


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Myanmar Word Sorting



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English-Sgaw Kayin Machine Translation System



က	က:ဒိၣ်ထံး	<i>k</i>
ခ	ခ:ကဝီ	<i>kh</i>
ဂ	ဂ်ကူဂ်လီ	<i>gh</i>
ဃ	ဃ:ဒိၣ်	<i>ch</i>
င	င:ဒုၣ်ဃူ	<i>ng</i>
စ	စ:တဖျၢ်	<i>s</i>
ဆ	ဆ:တဘ်	<i>hs</i>
ရှ	ရှ:ခဲမံ	<i>sh</i>
ည	ည:ညိၣ်ဒိၣ်	<i>ny</i>
တ	တ:တံစု	<i>t</i>
ထ	ထ:တယံ	<i>ht</i>
ဒ	ဒ:တဒါ	<i>d</i>
န	န:တဆံး	<i>n</i>
ပ	ပ:တဒီ	<i>p</i>
ဖ	ဖ:တဝံ	<i>hp</i>
ဘ	ဘ:တကူး	<i>b</i>

- Kayin is One of Myanmar National Races
- Two tribes of Kayin: Poe Kayin and Sgaw Kayin
- Different from Myanmar Language
- But as complex as Myanmar Script
- Use sagaw kayin dictionary for kayin segmentation

UCSY, Myanmar

English-Sgaw Kayin Machine Translation System

Translation

Translate | State Probability | Transition Probability | Emission Probability | Viterbi Process

English Sentence: Translate

Kayin Sentence: Reorder

Result :

Save Result Clear

UCSY, Myanmar

Myanmar-English-Myanmar Dictionary



- Myanmar-English-Myanmar keeps growing its size and evolves in many features like word, meaning, pronunciation and example sentences.
- To obtain a structurally similar WordNet for Myanmar Language too.
- Collected thesaurus, can find meaning, synonyms and examples and also find by categories, e.g. body, engineering, computer science, animals, etc.
- We hope the use of this future resource is expected to have benefits and to inspire research and development of Myanmar NLPs.

Available online at
http://www.nlpresearch-ucsy.edu.mm/NLP_UCSY/dictionaryapplication.html

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Myanmar Spell Checking



- Typographic errors can be checked and corrected
- Only work on words not on sentences.
- Cognitive errors can't be solved so far
- Referenced on "Myanmar Spelling" published by Myanmar Language Commission.

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Myanmar Spell Checking

The screenshot shows a web-based Myanmar spell checker. It features a search bar with the word 'ဆက်ရက်' (Khan Rak) entered. Below the search bar are several buttons: 'စာလုံးပေါင်းစုံ', 'ပြန်', 'ပြန်ရန်', 'သက်သေခံ', and 'မှားယွင်းရန်'. The interface displays the input word 'ဆက်ရက်' and the corrected word 'ဆက်ရက်' (Khan Rak). It also shows the Levenshtein Distance = 3 and a list of corrections: 'ဆက် (LD=2) (DT+3)', 'ဆက် (LD=2) (DT+3)', 'ဆက် (LD=2) (DT+2)', 'ဆက် (LD=2) (DT+3)', 'ဆက် (LD=2) (DT+2)', and 'ဆက် (LD=3) (DT+2)'. The text 'UCSY, Myanmar' is visible at the bottom left of the interface.

English-Myanmar Hybrid Machine Translation System

- Started since 2009 December
- Still Standalone for a year
- Launched Online on October 20, 2010.
- Use statistical translation and rule based reordering
- Continuing to increase the accuracy of the translation

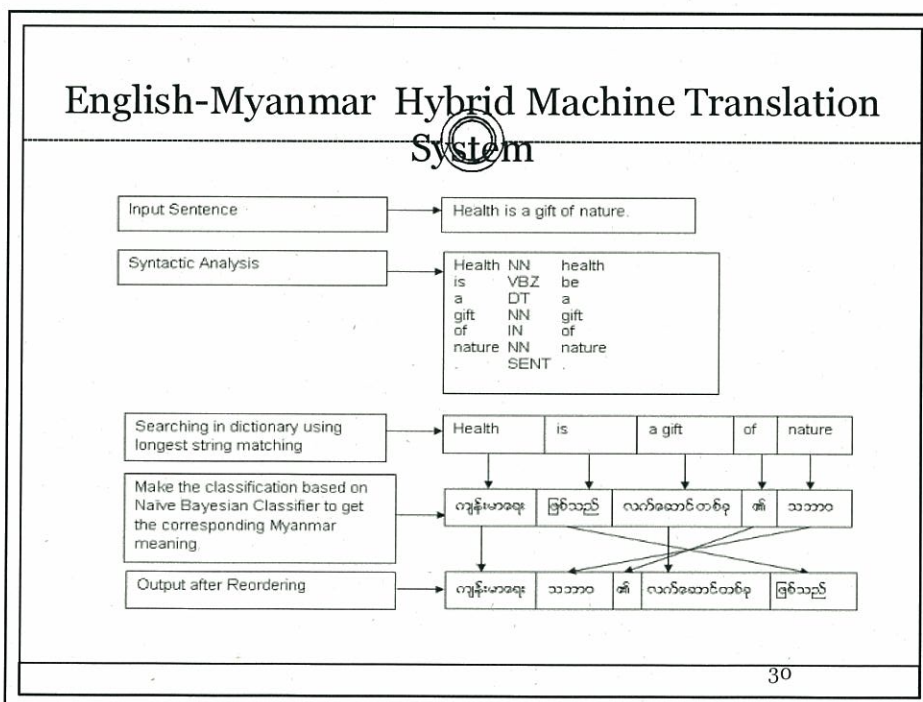
UCSY, Myanmar

English-Myanmar Hybrid Machine Translation System

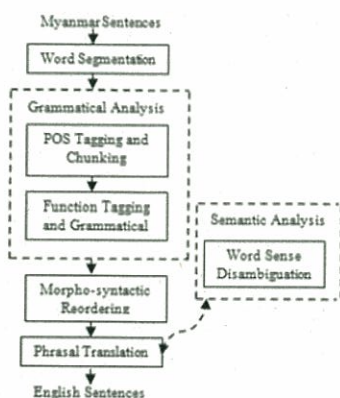
Information online at
http://www.nlpresearch-ucsy.edu.mm/NLP_UCSY/engtomyan.html

Available online at
http://www.nlpresearch-ucsy.edu.mm/NLP_UCSY/mtapplication.html

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Myanmar-English Machine Translation System



- Currently only simple sentences can be translated.
- Continuing to work with more complex sentences (e.g. with conjunction)
- Increasing the size of Monolingual and Bilingual corpus used in the system

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ASEAN Machine Translation Project with NEATEC

- Building a practical network-based service on ASEAN languages text translation in the tourism domain.
- The communication among people in the ASEAN region is unavoidable.
- MT systems among ASEAN languages mostly done via English are leading to several limitations, e.g. the information loss during the translation, the inefficient use of regional culture and traditions in the communication.
- Sharing the language translation knowledge and resources among ASEAN countries.
- Connecting ASEAN people in the language communication and support the system to build the ASEAN Community integration aimed in 2015.
- Available demo online at <http://www.aseanmt.org>

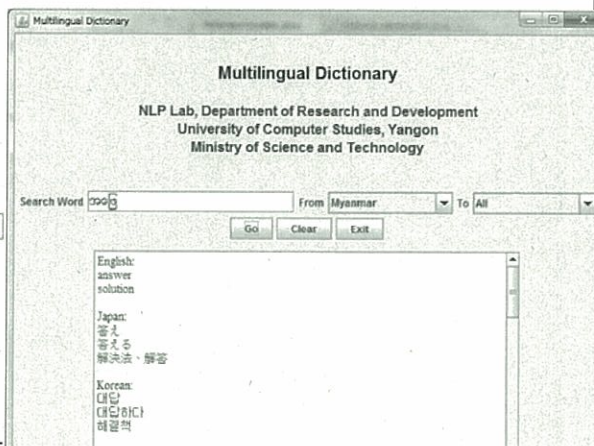
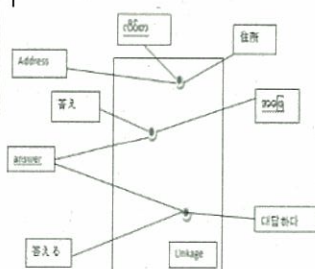
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Multilingual Dictionary

- To become this dictionary, we collect same meaning words of several languages.
- Contains multi language links (currently 18 language, eg. English, Myanmar, Japanese, Korean, Indonesian, Thailand, French, Arabic, Chinese, Bengali, Hindi, Portuguese, German, Spanish, Russian, Vietnamese,)
- Also extending to Myanmar ethnics languages, e.g Kachin, Chin, Kayin, ...

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Multilingual Dictionary



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Current Research Areas

Mobile Computing

- iTextmm (Myanmar Text Input for Mobile Phone)
- Context-Related Access Control Mechanism
- Context aware Location-based Service



Normal User Home Screen After Clicking End-user Home



Current Research Areas

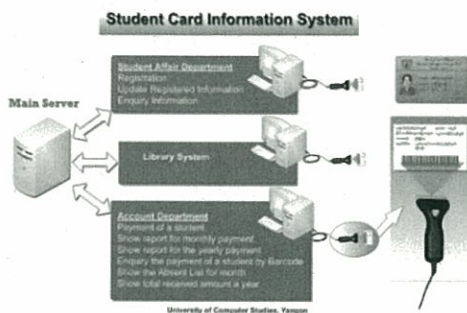
Image Processing

- Myanmar Intelligent Character Recognition (MICR) and Myanmar Voice Mixer (MVM) System
- Automatic Identification System of Myanmar National Registration Card (NRC) Holder based on Biometric Information



Software Development Activities

1. Student Information Management System

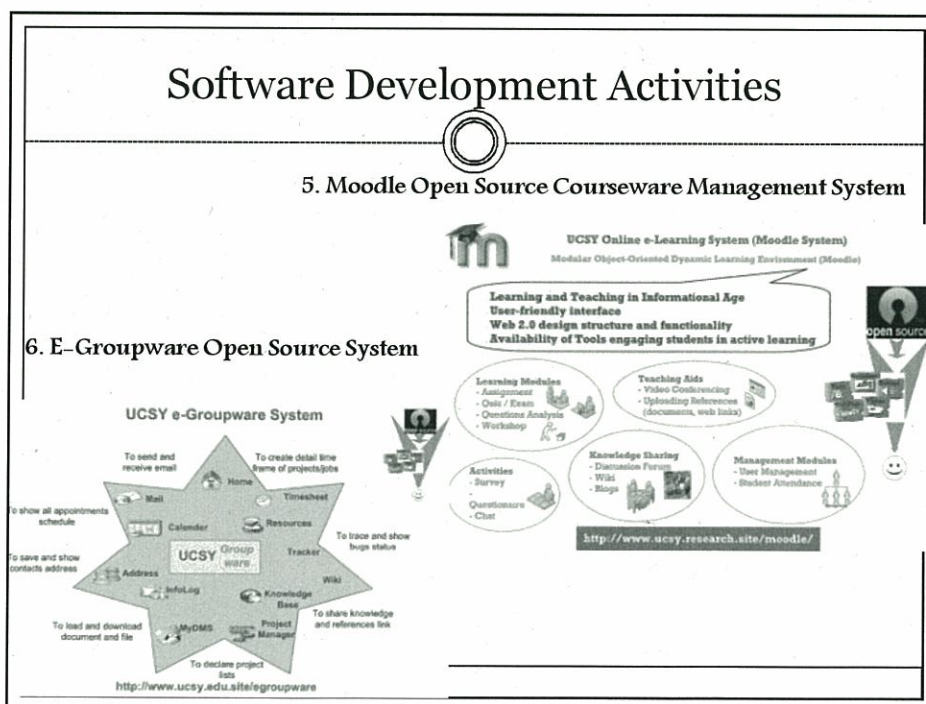
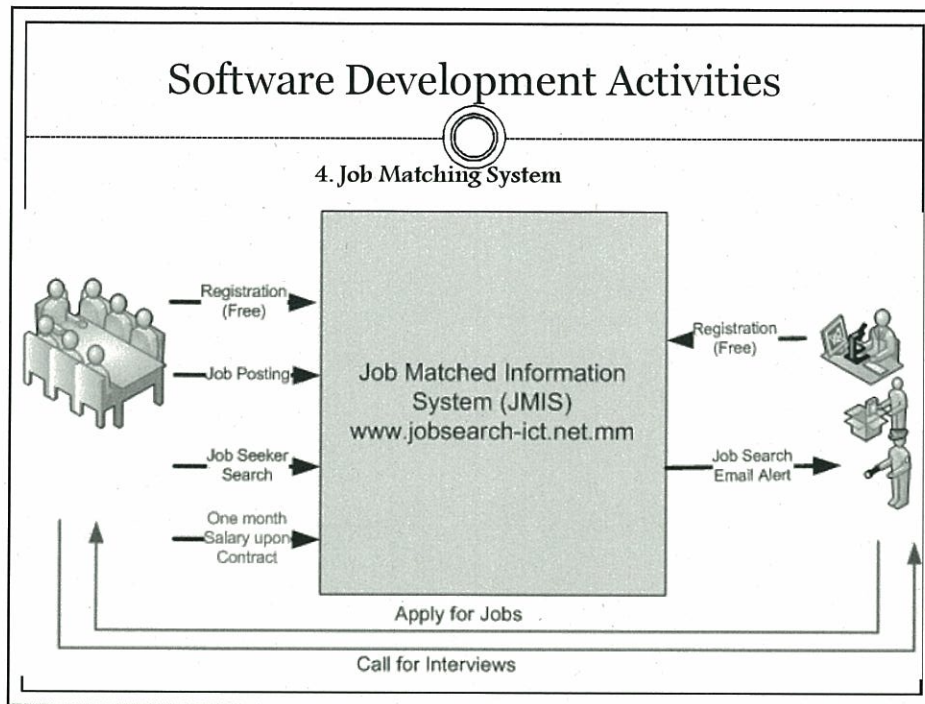


2. Library Management System

Software Development Activities

3. Staff Management System





India-Myanmar Center of Enhancement for IT Skills (IMCEITS) Project



- ▶ UCSY and India Government established IMCEITS in 2008.

IMCEITS project has been conducting the IT skill enhancement training for Software Engineers.



Information and Communication Technology Training Institute(ICTTI) Project



- ▶ UCSY and Japan International Cooperation Agency (JICA) established ICTTI in December 2006.

- ▶ ICTTI Project Renovation Work has finished in 2006 and Technology Transfer Program form Counterparts was started in January 2007.



International Cooperation Projects



- ▶ **School on Internet Asia (SOI Asia) Project**
 - ▶ develops distant learning applications for the advanced usage of the Internet as a tool of higher education.
- ▶ **Asian Internet Interconnection Initiatives (AI3) Project**
 - ▶ joined together with KEIO University, other Asian partner universities and UCSY
 - ▶ aims to research and develop the Internet technologies
 - ▶ 2011 AI3/SOI Asia Autumn joint Meeting is held at UCSY in the last November.



International Cooperation Projects



- ▶ **SEACOOP Project**
 - ▶ Supporting policy dialogues and strengthening cooperation between Europe and Southeast Asia in ICT
- ▶ **Recent Activities**
 - ▶ The 6th SEACOOP Cooperation Forum on ICT Research and ICT for Development is successfully celebrated at Myanmar on October 25, 2011.
 - ▶ A TEIN3 workshop organized by UCSY and DANTE under the aegis of MOST and EU to connect the REN community to the World on May 2012.



International Cooperation Projects



□ TEIN 4 Project

“Establishing a Myanmar NREN and Connecting to TEIN Network”

30th – 31st October, 2013



International Cooperation Projects



□ KOREA IT Volunteers (KIV) Program 2013

- The Korean government unified the separate volunteer programs of the Korean government into a single brand, “WFK (World Friends Korea)”. KIV program is one of WFK.

□ Recent Activities

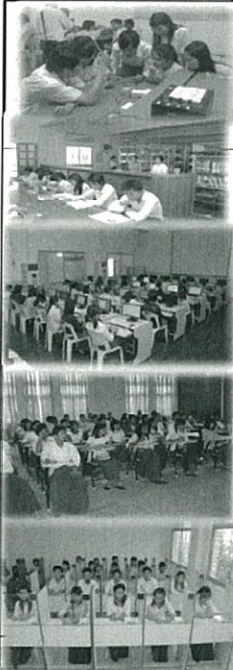
- Mr. Shin Jang Koon is the first Korea IT Volunteers (KIV) at UCSY.



International Collaboration



National Institute of Information and Communications Technology (NICT)
Hankuk Aviation University, Korea(HAUK)
Keio university, Japan
Nagaoka University of Technology
Center for Development of Advanced Computing (CDAC,India)
JICA (Japan International Cooperation Agency)-
WITTS Technology Japan
NTTData
Cisco Systems Ltd.
Doraku Holdings



Thank you very much ...