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Relevance of Unicode to e-governance

India has 122 major languages and 2371 dialects



Linguistic Diversity in India

- According to Census 2001 India has 122 major languages and 2371 dialects
- One Language –many script
- Many Language –one script
- Out of 122 languages 22 are constitutionally recognized languages

Challenges

- Lack of availability in local language has been a reason for slow progress of ICT & benefits not percolating down to common man

The screenshot shows a government website interface. On the left, there are links for various services: Document Registration (Deed/Power of Attorney/Lease etc.), Marriage Registration, Nursing Home Registration, Partnership Firm Registration, and Sales Tax Registration. Each service has a corresponding icon and a link to 'FAQ' or 'Forms/Affidavit'. On the right, there is a section titled 'Online Submission of Applications' with a form for entering applicant details like name, sex, house number, street, and locality. Below the form are radio buttons for selecting the type of certificate to apply for, such as Marriage Certificate, Schedule Caste (SC) Certificate, etc. A 'Click Here To Apply Online' button is at the bottom.

The screenshot shows a 'PERSONAL PARTICULARS FORM (In Duplicate)' for a passport application. The form is in English and includes fields for:

- 1. Full name (Initials not allowed)
- 2. Sex: Male / Female / Others
- (a) Has the applicant ever changed name?
 - (b) If yes, previous name:
- 4. Date of Birth
- 5. Place of Birth
- 6. Profession
- 7. a) Father (Surname) (Name)
- b) Mother

 A box on the right side of the form states: 'Paste your cross signed recent colour photograph, size 3.5x5.5 cm'. The website header is in Hindi, and there are some navigation links on the right side.

Encoding - Introduction

- Computers at their most basic level just deal with **numbers**
- Store letters, numerals and other characters by assigning a number for each one.
- Single 8-bit characters sets, limited us to 256 characters max.

Why a Standard Encoding?

- Ensure sharing of information
- Help seamless interoperability of data across e-Governance applications
- Developers from any part of the globe could interact through the application

What is Unicode?

- Unicode was initiated in **1987** by Joe Becker from Xerox and Lee Collins and Mark Davis from Apple
- Provides a unique number for every character, for any
 - **Platform**
 - **Program**
 - **Language**
- Visual rendering (size, shape, font, or style) is done by other software, such as a web browser or word processor
- 107,000 characters covering **90 scripts**
- Supported by other standards bodies including ISO, W3C, IETF, ELRA and BIS

Adoption by GoI in E-Governance

- All 22 Languages including Tamil has represented and included in UNICODE by TDIL, Govt. of India
- In Nov 2009, Expert Committee on Technology Standards for Indian Languages & National e-Governance Plan (NeGP) under DIT has notified in **Gazette of India** that “**Unicode 5.1.0 and its future versions as standards for e-Governance Applications**” - <http://bit.ly/u-expert> & <http://bit.ly/u-goi>

Adoption by states in E-Governance

- In August 2008, Kerala Government issued a GO on use of Unicode in Government Offices.
<http://bit.ly/u-gok>
- Recently, West Bengal Govt. and SNLTR has decided to accept UNICODE 5.0 and upwards as the standard for data representation and encoding for Bangla. <http://www.nltr.org/SNLTR/>
- In June 2010, **Tamil Nadu Government** has announced “Unicode shall be the main 16-bit encoding to be used in all applications where support for Tamil is available” <http://bit.ly/u-gotn>
- On 27 Jul 2010, Maharashtra state Chief Minister Ashok Chavan announced government will shortly introduce Unicode system for easy access of Marathi language across the world

Road Ahead

- Take stock of all existing legacy, proprietary, 8-bit encodings used in Data, Documents & Applications
- Plan and execute to convert to Unicode
- Develop & Procure all new systems & applications in Unicode
- Ensure all new documents and data are in Unicode
- Ensure Unicode & Indic Languages are supported in all PCs, Mobile Phones & Embedded devices

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