the facilities they have or difficulties they face, I do not think any committee is required in this regard.

Computer Based Sanskrit Studies, Education And Research

*777.. SHRI RAJENDRA KUMAR SHARMA: Will the PRIME MINISTER be pleased to state:

(a) whether Sanskrit institutions have undertaken computer based Sanskrit studies, education and research;

(b) the manner in which each centre is being assisted by some advanced technological institutions;

(c) whether these projects are being implemented satisfactorily in terms of objectives and targets; and

(d) if not, the arrangements made to provide necessary continuous technical assistance for this purpose?

THE MINISTER OF STATE IN THE MINISTRY OF PERSONNEL, PUBLIC GRIEVANCES AND PENSIONS (SHRIMATI MARGARET ALVA): (a) Yes, Sir, A few Sanskrit institution have initiated computer based Sanskrit studies, education and research under the Technology Development for Indian Languages (TDIL) Programme of the Department of Electronics.

(b) Under the TDIL Programme, resource centres for computer assisted Sanskrit teaching and learning have been established. They are expected to provide assistance to the Sanskrit institutions. The computer assisted Sanskrit teaching and learning programme has also been initiated for the benefit of Sanskrit Scholars.

(c) Yes, Sir.

(d) Does not arise.

[*Translation*]

SHRI RAJENDRA KUMAR SHARMA: Sir, Sanskrit is one of the oldest languages of the world. Sanskrit is the mother of many other languages. Therefore, the Government's primary duty is to strengthen this language and thus make it more useful for the country.

Sir, the Government has given grants to some computer institute for the development of Sanskrit software. I suggest that specialists in this field be made available to them. Presently, good computer specialists are not joining Sanskrit institutions. So, computer specialists should be sent on deputation from the Electronics Research and Development Centre.

MR. SPEAKER: Please ask your question. If you have any suggestions you can give them in writing.

SHRI RAJENDRA KUMAR SHARMA: Sir, the research institutions which have computers do not have specialist staff for imparting trading training. May I know from the hon. Minister whether there is any proposal to send specialists to such institutions either directly on appointment or on deputation basis?

[*English*]

SHRIMATI MARGARET ALVA: Sir, the main thrust of the training programme in Sanskrit for computers is to get computer scientists to study Sanskrit and Sanskrit scholars to accept computers so that there can be a synthesis of the two. This programme has been launched and we are funding various institutes in this country for this programme so that experts could be produced for carrying out the programme further.

[*Translation*]

SHRI RAJENDRA KUMAR SHARMA: Sir, it is necessary to link all the Sanskrit

Universities, through a computer network, as it is done in the case of the I.I.Ts. May I know from the hon. Minister if the Government has any such proposal?

In foreign countries, particularly in Germany, England and America, several Universities are conducting research in Sanskrit through computers. Some specialists should be sent there for exchange of views so that we could benefit from that.

[*English*]

THE PRIME MINISTER (SHRI P.V. NARASIMHA RAO): We have been receiving lot of questions in both Houses of Parliament about Sanskrit language and how it is capable of being computerised, which means that there is a branch of knowledge which is so logical that it could be easily translated into a computer language and a machine language. This is very encouraging so far as we are concerned.

This evening, Sir, we are having a full presentation of what the Department of Electronics has been doing and proposes to do in this connection so that there will be no need for repeating the questions which have already come and been answered. In fact, after the presentation, if hon. Members have any further suggestions to make, they are welcome. We would like to see whatever is possible on this to be done at the earliest as once something is done in Sanskrit means, it could perhaps be extended to some extent at least to the other Indian languages because to the extent the logic is the same, application is possible. But it will not be possible 100 per cent. We will explore the possibilities later. But firstly, I would request the Members who are interested to attend the presentation. In fact, I would presume that all Members are interested in this. So, all could come and attend the presentation and then give us their suggestions.

[*Translation*]

SHRI DAU DAYAL JOSHI: Sir, I praise the Hon. Prime Minister for having expressed his concern in a clear-cut name. In part (d) of his question the hon. Member desired to know the arrangements made to provide necessary continous technical assistance for this purpose and the hon. Minister has replied that the question does not arise. Sanskrit is the best language of the world and the hon. Minister says that the question did not arise. In the light of the neglect that Sanskrit has been subjected to, I would like the hon. Minister to explain the basis of his reply. Let him explain as to why the question does not arise.

[*English*]

SHRIMATI MARGARET ALVA: Sir, I would like to point out that 'c' part of the question is whether these projects are implemented satisfactorily or not and 'd' part of the questions says, 'If not, what is being done?. So, since we say that they are working satisfactorily as per the programme at the moment, the question of doing anything to correct it does not arise. The fourth supplementary arises out of the third supplementary.

SHRI NIRMAL KANTI CHATTERJEE: Sir, we are very happy to learn from both Shrimati Alva and the Prime Minister that computer work on Sanskrit is going on satisfactorily. But, one additional question arises from the Prime Minister's answer. While Sanskrit is the mother for so many languages in our country, it is not so for some languages like Urdu, Tamil and so on. I would like to know whether there is a simultaneous effort or study to computerise those languages also.

SHIR P.V. NARASIMHA RAO: Urdu has been computerised. The Word processing is available in Urdu. We thought it would not be possible, but it has been made possible and it is working. About Tamil, Tamil is one of the easiest languages for the compa-

nies and it is one of the first languages to go into computerisation. I think parallel work is being done on all languages. Each language has its genius. Therefore it requires a different kind of research and a different kind of development.

Standard Code for Data Processing in Hindi

*778. SHRI RAM KAPSE: Will the PRIME MINISTER be pleased to state:

(a) whether a number of codes are being used by various manufacturers for data processing in Hindi;

(b) if so, the details thereof;

(c) whether there is any possibility to convert Hindi automatically from one code into another;

(d) whether any Standard code has been finalsed by the Department of Electronics in this regard;

(e) if so, the details thereof;

(f) whether this code is also a part of ISO code; and

(g) the names of the organizations which are following the DoE standard codes and their products?

THE MINISTER OF STATE IN THE MINISTRY OF PERSONNEL, PUBLIC GRIEVANCES AND PENSIONS (SHRIMATI MARGARET ALVA): (a) to (g). A statement is laid on the Table of the Lok Sabha.

STATEMENT

(a) and (b) Yes, Sir. The latest draft standard for Indian Script Code for Information Interchange (ISCII) was adopted in 1991. This had passed through the 1983, 1986 and 1988 versions, which represented the process of refinement and analysis of the standard. The first attempt at standardization of the code for Indian languages including Hindi was made in 1983 which was revised in 1986 and 1988 to make it compatible with personal computers. This was adopted by the Bureau of Indian Standards as a draft standard for the Indian Script Code for Information Interchange (ISCII) in 1991.

(c) Automatic conversion from one code to another is possible in computers.

(d) and (e) The Bureau of Indian Standards (BIS) in collaboration with the Department of Electronics has finalised a draft Indian standard for Indian Script Code for Information Interchange (ISCII) in 1991.

(f) The draft ISCII code specifications have been sent to International Standards Organisation (ISO) for inclusion in their standards.

(g) The implementation of the ISCII standard code is done through the Graphic based Intelligence Script Technology (GIST). The names of the organisations to whom the GIST technology has been transferred are given in Annexure.

ANNEXURE

LIST OF ORGANISATIONS TO WHOM THE GIST TECHNOLOGY HAS BEEN TRANSFERRED

1. QUARK, Kanpur

2. Applied Electro Magnetics, New Delhi.

3. Blue Star, Bombay.

4. VSS, Bombay.

5. NITEL, Bhopal

6. Abacus Computers Limited, Bombay.

7. AMI Sanag Micromation Ltd., Hyderabad.