

QUESTION 3-

BLEU SCORE:

	HI TO EN	EN TO HI	TA TO HI	HI TO TA
NLLB	0.7067223376 25123	0.7547235743 984803	0.7513221168 058316	0.7246769061 056083
INDIC TRANS	0.6946380319 226029	0.7393176589 394633	0.7299964959 77605	0.6928307685 071132
CHATGPT	0.6839972692 624341	0.7388852243 229926	0.7065366009 396985	0.6777784162 282268

ROUGE SCORE (F1-score):

	HI TO EN	EN TO HI	TA TO HI	HI TO TA
NLLB	Rouge-1:0.6320 Rouge-2:0.3999 Rouge-1:0.6027	Rouge-1:0.5600 Rouge-2:0.3248 Rouge-1:0.5280	Rouge-1:0.4429 Rouge-2:0.2249 Rouge-1:0.4066	Rouge-1:0.3427 Rouge-2:0.1037 Rouge-1:0.3289
INDIC TRANS	Rouge-1:0.6531 Rouge-2:0.4173 Rouge-1:0.6181	Rouge-1:0.5870 Rouge-2:0.3494 Rouge-1:0.5512	Rouge-1:0.4398 Rouge-2:0.2084 Rouge-1:0.4055	Rouge-1:0.3995 Rouge-2:0.1476 Rouge-1:0.3801
CHATGPT	Rouge-1:0.6109 Rouge-2:0.3589 Rouge-1:0.5773	Rouge-1:0.6076 Rouge-2:0.3849 Rouge-1:0.5811	Rouge-1:0.3224 Rouge-2:0.1410 Rouge-1:0.2851	Rouge-1:0.2235 Rouge-2:0.0390 Rouge-1:0.2109

SUMMARY:

- 1) From the BLEU score I can observe that NLLB is giving the best results for all the translations. And chat gpt lacks among all three models.
- 2) Among all the considered language translations, English to Hindi is having better translations (according to BLEU score) than other language translations for all three models i.e NLLB, Indic Trans and chatgpt.
- 3) From Rouge score, I can infer that NLLB gives best results for Hindi to English translation. Indic Trans also gives best translations for Hindi to English and worst on Hindi to Tamil. Same pattern is observed for chatgpt also.
- 4) According to Rouge score, Indic Trans gives the best Rouge-I score for Hindi to English and Hindi to Tamil. Chatgpt gives the best score for English to Hindi translation and NLLB gives best translation for Tamil to Hindi.