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BSc (Hons) in Information Technology

Year 3

Assignment 1

IT3040 – ITPM **Semester 1**

This assignment is designed to evaluate your ability to test a real-world system, design automation strategies, and analyze its weaknesses in a structured manner. This assessment should be attempted **individually**.

Option 1 (For students who are familiar with the Sinhala language)

- **Objective:**

The main objective of this option is to assess how accurately the system available at the link below converts **Singlish** input into **Sinhala** output, and how stable and usable the user interface is under different conditions. Note that you are **not** required to test backend APIs, performance, or security.

https://www.swifttranslator.com/

Option 2 (For students who are not familiar with the Sinhala language)

- **Objective:**

The main objective of this option is to assess the accuracy of the system available at the link below in converting **Thanglish** input into **Tamil** output, as well as the stability and usability of the user interface under different conditions. Note that you are **not** required to test backend APIs, performance, or security.

https://tamil.changathi.com/

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➢ Tasks:

• Identify **at least twenty four (24)** scenarios where the system correctly converts the selected input language (Singlish/Thanglish) into the corresponding target language (Sinhala/Tamil), and **at least ten (10)** scenarios where the system fails or behaves incorrectly.

• Ensure that the functional test scenarios cover each of the points listed below **at least once**. Appendix 1 provides example inputs for Option 1 (Singlish to Sinhala). Students selecting Option 2 may construct equivalent examples for Thanglish to Tamil.

- **Sentence structures**
  - Simple, compound, and complex sentences
  - Interrogative (questions) and imperative (commands) forms
  - Positive and negative sentence forms
- **Daily language usage (realistic conversational inputs)**
  - Common greetings, requests, and responses
  - Polite vs informal phrasing
  - Frequently used day-to-day expressions
- **Word combinations and phrase patterns**
  - Multi-word expressions and frequent collocations
  - Joined vs segmented word variations (with/without spaces)
  - Repeated word expressions used for emphasis
- **Grammatical forms**
  - Tense variations (past, present, future)
  - Negation patterns
  - Singular/plural usage and pronoun variations
  - Request forms with varying degrees of politeness

- **Input length variation (robustness across sizes)**
  - Short inputs (≤ 30 characters)
  - Medium inputs (31–299 characters)
  - Long inputs (≥ 300 characters)
- **Mixed language content (Singlish + English)**
  - English technical/brand terms embedded in Singlish
  - Sentences containing places and common English words that should remain as they are
  - English abbreviations and short forms
- **Punctuation, numeric formats, and text formatting**
  - Inputs containing punctuation marks
  - Currency, time formats, dates, and units of measurement
  - Multiple spaces, line breaks, and paragraph-style inputs
- **Informal language**
  - Slang and colloquial phrasing

- Identify **one (1) UI-related test scenario (either positive or negative)** related to the application (e.g., real-time output updating, clearing input, etc.).

- Automate all identified scenarios using **Playwright** and record the execution results using the test case template provided in **Appendix 2.** **Your test cases must not include those mentioned in the sample template**.

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➢ Required Files:

1. The **full Playwright project repository** (including all scripts and configuration files), along with the **Git repository link** provided in a separate **text file**. The repository should include clear instructions in a **README.md** on how to install dependencies and run the tests. Ensure that the Git repository is **publicly accessible**. Repositories that cannot be accessed during marking will **not** be evaluated.
2. A completed **Excel file** containing the test cases filled using the template provided in **Appendix 2.**

Plagiarism Notice:

Submitted Excel files will be checked for plagiarism. Any submission with a similarity score **greater than 10%** will be considered plagiarized, and **no marks will be awarded** for the assessment.

➢ Method of Submission:

- Rename all files with your registration number.
- Create a folder with your registration number
- Paste all the required files into the folder.
- Zip the folder.
- Upload the zipped folder to the *'Assignment 1 Answer'* link available on CourseWeb **before 1st February**.

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Appendix 1

1) Sentence structures

A) Simple sentences

- mama gedhara yanavaa.
- mata bath oonee.
- api paasal yanavaa.

B) Compound sentences (two ideas joined)

- mama gedhara yanavaa, haebaeyi vahina nisaa dhaenma yannee naee.
- api kaeema kanna yanavaa saha passe chithrapatayakuth balanavaa.
- oyaa hari, ehenam api yamu.

C) Complex sentences (cause/effect, conditions)

- oya enavaanam mama balan innavaa.
- vaessa unath api yanna epaeyi.
- mama sunaQQgu vunee maarga thadhabadhaya nisaa.

---

2) Interrogative and imperative forms

A) Interrogative (questions) forms

- oyaata kohomadha?
- oyaa kavadhdha enna hithan inne?
- meeka hariyata vaeda karanavaadha?

B) Imperative (commands) forms

- vahaama enna.
- issarahata yanna.
- mata kiyanna.
- eeka dhenna.

---

3) Positive vs negative sentence forms

A) Positive forms

- mama ehema karanavaa.
- api heta enavaa.
- oyaa eeka hariyata kiyavalaa.

B) Negative forms

- mama ehema karannee naehae.
- api heta ennee naehae.
- oyaa eeka hariyata kiyavalaa naehae.

---

4) Common greetings, requests, and responses

A) Greetings

- aayuboovan!
- suba udhaeesanak!
- kohomadha oyaata?

B) Requests

- mata udhavvak karanna puLuvandha?
- karuNaakaralaa eka poddak balanna.
- magee lipinaya eyaata yavanna.

C) Responses

- hari, mama karannam.
- ov, eeka hari.
- naee, mata eeka karanna puLuvan.

---

5) Polite vs informal phrasing

A) Polite phrasing

- karuNaakaralaa mata podi udhavvak karanna puLuvandha?
- samaavenna, eeka athvaeradhiimak.
- oyaata puLuvannam karuNaakara eyaava yavanna.

B) Informal phrasing

- eeyi, ooka dhiyan.
- oya enne.
- ehema karapan.

---

6) Frequently used day-to-day expressions

- mata nidhimathayi.
- mata baya hithenavaa.
- dhaen vahinavaa.
- mama gedhara innee.
- api passe kathaa karamu.

7) Multi-word expressions and frequent collocations

- mata oona
- poddak inna
- hariyata vaeda
- gihin enna
- kaeema kanna
- baya naee

---

8) Joined vs segmented word variations (with/without spaces)

A) Proper spacing

- mama gedhara yanavaa.
- mata paan kanna oonee.
- heta api yanavaa.

B) Missing spaces / joined words (stress test)

- mamagedharayanavaa
- matapaankannaoonee
- hetaapiyanavaa

---

9) Repeated word expressions used for emphasis

- hari hari
- eka eka
- tika tika
- chuttak chuttak

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10) Tense variations (past / present / future)

A) Past

- mama iiyee gedhara giyaa.
- api naetum panthi giyaa.

B) Present

- mama dhaen vaeda karanavaa.
- api kaeema kanavaa.

C) Future

- mama heta enavaa.
- api iiLaGa sathiyee gedhara yamu.

---

11) Negation patterns

- mama dhannee naee.
- mata eeka epaa.
- mata eeka karanna baee.

---

12) Singular/plural usage and pronoun variations

A) Singular

- mama yanna hadhannee.
- oyaa enavadha?
- eyaa gedhara giyaa.

B) Plural

- api yamu.
- oyaalaa enavadha?
- eyaalaa enavaa.

13) Request forms with varying degrees of politeness

- karuNaakara eeka dhenavadha?
- puLuvannam mata eeka evanna.
- eeka dhenna.
- anee eeka dhiyan.

---

14) English technical/brand terms embedded in Singlish

- Zoom
- WiFi
- Email
- WhatsApp
- LinkedIn
- TikTok

---

15) Sentences containing places and common English words that should remain as they are

- Lamayi **school** yannee vaeen ekee.
- nimaali **office** enna late vennee **traffic** nisaa.
- siiyaa **Colombo** yanna hadhannee.
- api **trip** eka **Kandy** valata yamudha.
- **Zoom meeting** ekak thiyennee.
- **Documents** tika **attach** karalaa mata **email** ekak evanna.
- **Teams meeting** ekee **link** eka **WhatsApp** karanna puLuvandha.

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16) English abbreviations and short forms

- ID, NIC
- SMS, MMS
- App, URL
- PIN, OTP, QR, QR Code
- ATM, POS, CVV, CVC, IBAN, SWIFT
- ASAP, FYI, VIP, TBA, TBC, ETA
- CPU, GPU, OS, MP3, MP4, HD, USB, RAM, ROM, PC

---

17) Inputs containing punctuation marks

- !
- ?
- ( )
- “

---

18) Currency, time formats, dates, and units of measurement

A) Currency

- Rs. 5343
- USD 1500

B) Time formats

- 7.30 AM
- 12.00 noon

C) Dates

- dhesaembar 25
- 25/12/2025
- 2026-05-21

D) Units of measurements

- kg
- ml
- cm

---

19) Multiple spaces, line breaks, and paragraph inputs

A) Multiple spaces

- mama gedhara yanavaa.
- mata raeeta kanna bath oonee.

B) Line breaks (multi-line input)

- mama gedhara yanavaa.
  oyaa enavadha maath ekka yanna?
- api passee
  kathaa karamu.

C) Paragraph-style input (medium/long)

- dhitvaa suLi kuNaatuva samaGa aethi vuu gQQvathura saha naayayaeem heethuven maarga sQQvarDhana aDhikaariya sathu maarga kotas 430k vinaashayata pathva aethi athara, ehi samastha dhiga pramaaNaya kiloomiitar 300k pamaNa vana bava pravaahana,mahaamaarga saha naagarika sQQvarDhana amaathYA bimal rathnaayaka saDHahan kaLeeya.

---

20) Slang and colloquial phrasing

- ela machan! supiri!!
- adoo vaedak baaragaththaanam eeka hariyata karapanko bQQ.
- appatasiri, mata beheth bonna amathaka vunaa kiyahankoo.
- siraavata, ela kiri machan.
- eka poddak amaaruyi vagee
- dhaen ithin monavadha karanne?

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Appendix 2

Notes:

- **Standard execution steps for functional test cases:**
  1. Enter the Singlish text in the "*Singlish*" input field.
  2. Observe that the Sinhala output is generated automatically in real-time without pressing a convert button.
  3. Record the generated Sinhala output as the Actual Output.

- **Test case ID conventions:**
  1. Positive functional test cases should begin with "**Pos_Fun**".
  2. Negative functional test cases should begin with "**Neg_Fun**".
  3. Positive UI test cases should begin with "**Pos_UI**".
  4. Negative UI test cases should begin with "**Neg_UI**".

- **Input length types:**
  1. S (≤ 30 characters)
  2. M (31–299 characters)
  3. L (≥ 300 characters)

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- **The following order should be used when filling the "*What is covered by the test*" column:**
  1. Input Type / Domain
  2. Sentence / Grammar Focus
  3. Input Length Type
  4. Quality Focus

  - **Allowed values to be included under the above four bullet points in the "*What is covered by the test*" column:**

  1) Input Type / Domain (choose ONE)
  - Daily language usage
  - Greeting / request / response
  - Word combination / phrase pattern
  - Mixed Singlish + English
  - Slang / informal language
  - Typographical error handling
  - Names / places / common English words
  - Punctuation / numbers
  - Formatting (spaces / line breaks / paragraph)
  - Empty/cleared input handling

  2) Sentence / Grammar Focus (choose ONE)
  - Simple sentence
  - Compound sentence
  - Complex sentence
  - Interrogative (question)
  - Imperative (command)
  - Present tense / Past tense / Future tense

- Negation (negative form)
- Pronoun variation (I/you/we/they)
- Plural form

3) Input Length Type (choose ONE)

- S (≤30 characters)
- M (31–299 characters)
- L (≥300 characters)

4) Quality Focus (choose ONE)

- Accuracy validation *(use if the input is clean)*
  - Use **accuracy validation** when:
    - ✓ Input is correct Singlish
    - ✓ Normal spelling and spacing
    - ✓ Expected result is clear
    - ✓ You are verifying correct conversion (PASS)
- Robustness validation *(use if the input is messy/unusual)*
  - Use **robustness validation** when:
    - ✓ Input includes typos, slang, mixed English, long text, formatting issues
    - ✓ You are testing failure behavior or edge behavior (often FAIL)
- Formatting preservation
- Real-time output update behavior *(use for UI-related functional behavior)*
- Error handling / input validation *(use for negative UI)*

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Sample Test Case Template

Note:

- The application is designed for **standard Singlish-to-Sinhala transliteration** and may not correctly handle **chat-style shorthand** or informal abbreviations (e.g., “Thx”, “u”, “gr8”). Therefore, you should **not construct negative functional test cases** using such short forms.
- Additionally, refer to the application’s **Help** page to identify the correct Singlish character combinations used to represent Sinhala letters when defining expected outputs.

TC ID	Test case name	Input length type	Input	Expected output	Actual output	Status	Accuracy justification/ Description of issue type	What is covered by the test
Pos_Fun_0001	Convert a short daily greeting phrase	S	oyaata kohomadha?	ඔයාට කොහොමද?	ඔයාට කොහොමද?	Pass	• The greeting meaning is preserved. • Sinhala spelling and punctuation are correct. • The question mark remains correctly placed.	• Greeting / request / response • Interrogative (question) • S (≤30 characters) • Accuracy validation
Pos_Fun_0002	Long mixed-language input with slang + typo causes incorrect conversion	M	machan mata adha meeting ekee Zoom link eka email ekak vidhihata evanna puLuvandha? Please send it before 3pm. Mama office yanna kalin check karanna oonea. Email ekak evanna amaarunam WhatsApp msg ekak dhaapan. Thx!	මචන් මට අද meeting එකේ Zoom link එක email එකක් විදිහට එවන්න පුළුවන්ද? Please send it before 3pm. මම office යන්න කලින් check කරන්න ඕනේ. Email එකක් එවන්න අමාරුනම් WhatsApp මිස්ග් එකක් දාපන්. ඵx!!	මචන් මට අද meeting එකේ Zoom link එක email එකක් විදිහට එවන්න පුළුවන්ද? Please send it before 3pm. මම office යන්න කලින් check කරන්න ඕනේ. Email එකක් එවන්න අමාරුනම් WhatsApp මිස්ග් එකක් දාපන්. ඵx!!	Pass	• The system correctly converts the Singlish content into Sinhala while preserving the intended meaning. • Most English technical terms (e.g., “Zoom”, “email”, “office”) remain readable and do not negatively affect the conversion. • The only observed limitation is that the informal abbreviation “Thx” is not converted (or remains unchanged), which is acceptable since the application is not intended to support chat-style shorthand.	• Mixed Singlish + English • Compound structure • M (31–299 characters) • Robustness validation

Pos_Fun_0003	Convert a short request phrase	S	mata help ekak karanna puLuvandha?	මට help එකක් කරන්න පුළුවන්ද?	මට help එකක් කරන්න පුළුවන්ද?	Pass	• The request meaning is correctly preserved. • Sinhala spelling and word segmentation are correct. • The question mark remains correctly placed.	• Greeting / request / response • Interrogative (question) • S (≤30 characters) • Accuracy validation
Pos_UI_0001	Sinhala output updates automatically in real-time	S	man gedhara yanavaa	Sinhala output should update automatically while typing and display: මන් ගෙදර යනවා	Sinhala output is updated automatically while typing and display: මන් ගෙදර යනවා	Pass	• Sinhala output appears in real-time conversion. • Output updates correctly as the user types the full sentence. • No UI lag or freezing observed for short input.	• Usability flow (real-time conversion) • Simple sentence • S (≤30 characters) • Real-time output update behavior