

# LIA Plus AI Prompt Engineering Assignment: Nursing College Admission Conversational Flow

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## Introduction:

This report introduces a well-structured conversational flow for an AI-enabled assistant designed to guide a prospective candidate through the B.Sc. Nursing admission process. Developed for the LIA Plus AI Prompt Engineering Assignment, it allows for smooth, informative, and comfortable communication between the users and the program.

The flow tries to:

1. Engage the candidates; straightforward and personable.
2. Handle multi-turn questions smoothly.
3. Provide the user with the latest information regarding the software.
4. Allow the user to be able to effortlessly handle complicated admission information.
5. Since the chatbot speaks Hindi and English, it can be made available to a large population.

## Conversational Flow:

- **Start of Interaction:**

**Assistant:** Would you like to apply for the B.Sc. Nursing program? Please answer with either "Yes," "Haan," "No," or "Nahi."

**Response Handling:**

- Affirmative Responses ("Yes," "Haan," "Tell me more," "Kya hai," "Batao," etc.): Proceed to eligibility check.
- Negative Responses : Assistant says, "Thank you for this time! Should you have any questions about our programs in the future, please do not hesitate to contact us." (Conversation ends.)
- Ambiguous/Other Responses: Assistant says, "Can you please clarify if you are interested in the B.Sc Nursing program? You may say 'Yes,' 'Haan,' 'No,' or 'Nahi.' "

## Step 1: Eligibility Check (Biology in 12th Grade):

- **Assistant:** Quite intriguing. Was Biology offered to you as a subject in the 12th?
- **Response Handling:**
  - **Positive:** Then proceed to the second step (Program Details).
  - **Negative:**

**Assistant:** For admission in B.Sc. Nursing, Biology is required. Unfortunately, Biology in 12th is compulsory for this program.
- **Assistant:** Would you like to learn something more about other programs? Perhaps you have other questions.
- **Response Handling:**
  - Positive responses should be given. Give general college-related information or give a redirection toward other programs.
  - If the user says, "No," or "Nahi," then close with, "Thank you for your interest! Please feel free to contact us if you have questions in the future."
  - For unclear answers, the assistant will continue, "Could you please clarify if you studied Biology in 12th grade? Please say 'Yes' or 'No.'"

## Step 2: Program Details:

- **Assistant:** Wonderful! This is a full-time professional course and shall ensure that you get training for your career in Nursing. Or would you like to know more about the program, such as the curriculum or the duration of the program?
- **Response Handling:**
  - Affirmative response ("Yes," "Haan," "Tell me more."): "The course is of 4 years duration; teaching nursing theory, practical skills, and clinical training," and then moving on to the third step, Fee Structure.
  - Negative Responses : Assistant responds, "Alright, no problem! Would you like to know about the fee structure for the B.Sc Nursing program instead?"
    - If user says "Yes" or equivalent, proceed to Step 3.
    - If user says "No" or "Nahi," end with, "Thank you for your interest! Feel free to reach out if you have more questions later."

### Step 3: Fee Structure:

- **Assistant:** The detailed fee structure for B.Sc. Nursing is as follows:
  - **Tuition Fees:** ₹60,000 INR per annum
  - **Bus Fees:** ₹10,000 INR per annum
  - **Total Fees per annum:** ₹70,000 INR
- Fee schedule is in three instalments:
  - 1st Instalment — ₹30,000 (due at the time of admission)
  - 2nd Instalment — ₹20,000 (due after completion of first semester)
  - 3rd Instalment — ₹20,000 (due after completion of second semester)
- **Assistant:** Would you like to hear about the payment procedures and options or maybe any scholarships offered?
- **Response Handling:**
  - In-case of affirmative responses: proceed with Step 9 (Scholarship Options).
  - In-case of negative responses: Assistant responds with, "Got it! Would you like to learn about our hostel and training facilities?"
  - If the user says "Yes" or equivalent: proceed with Step 4.
  - If the user says "No" or "Nahi": conclude it with a "Thank you for your time! Let us know if you need further assistance."

### Step 4: Hostel and Training Facilities:

- **Assistant:** The college provides for the most excellent hostel facilities:
  - Water and electricity supply is round the clock.
  - CCTV security.
  - Warden support on-site.

Further, the B.Sc Nursing Program includes hospital training in the actual environment; students got to work with real patients to gain practical experience.

- **Assistant:** Would you like to know more about the buildings or any other facility?
- **Response Handling:**
  - Positive Responses Go on to Step 8 (Clinical Training Locations).
  - Negative Responses: Assistant says, "Alright! Would you like to know about the college's location?"
  - If user says, "Yes," or equivalent, go to Step 5.
  - If user responds, "No," or "Nahi," end the conversation with, "Thank you for your interest! Feel free to contact us anytime."

### Step 5: College Location:

- **Assistant:** The Nursing College is in Delhi, a bustling place blessed with connectivity and resources. Do you want to learn about the location and its surroundings?
- **Response Handling:**
  - **Positive Responses** Provide brief details ("The college is situated in a well-connected area of Delhi, with good public transport options and all amenities nearby.") and then proceed to Step 6.
  - **Negative Responses** Assistant says, "Okay! Would you like to know about the college's recognition and accreditation?"
  - If the user agrees ("Yes," etc.), proceed to Step 6
  - if the user says "No" or "Nahi," end with, "Thank you for your time! We're here if you need us."

### Step 6: Recognition and Accreditation:

- **Assistant:** The Nursing College is accepted by the Indian Nursing Council, Delhi, under the Government of India, ensuring quality in education and training. Would you like to hear more about the accreditation or other features of the program?
- **Response Handling:**
  - **Affirmatives** Brief information is given, for example, "The INC recognition ensures our curriculum meets national standards for nursing education," then go to Step 7.
  - **Negatives:** The assistant says, "Got it! Would you want to know about our clinical training locations?"
  - If "Yes," etc., continue to Step 7.
  - If "No," "Nahi," then say, "Thank you for your interest! Please feel free to get back to us later."

## Step 7: Clinical Training Locations:

- **Assistant:** Our students receive clinical training at top facilities, including:

- District Hospital, Backundpur
- Community Health Centres
- Regional Hospital, Charthia
- Ranchi Neurosurgery and Allied Science Hospital, Ranchi, Jharkhand

This training assures varied and widespread experiences. Moving onto scholarship options?

- **Response Handling:**

- If the user gives the positive response: Proceed to Step 9 (Scholarship Options).
- If the user gives the negative response the assistant says, "Alright! Would you like to know about the total seats available or other eligibility criteria?"
- If the user says "Yes" or any cognate terms, proceed to Step 8.
- If the user says "No" or "Nahi," close out with "Thank you for your time! We're here to help anytime."

## Step 8: Total Seats Available:

- **Assistant:** The B.Sc. Nursing program has 60 seats. Would you like to go ahead and the eligibility criteria for admission?

- **Response Handling:**

- **Positive Responses:** Deals with Step 9 (Eligibility for Admission).
- **Negative Responses:** Assistant says, "Okay! Would you like to know about scholarship options?"
- If "Yes," or parallel, goes to Step 10.
- If "No," or "Nahi," then end with a "Thank you for your interest! Feel free to contact us for more details."

## Step 9: Eligibility for Admission:

- **Assistant:** For eligibility for the B.Sc Nursing program, the following criteria should be fulfilled:
  - Studied Biology at the Class 12nd Level
  - Has passed the PNT Exam
  - Age between 17-35 years

Would you like to hear about scholarships that are available to finance your studies?

- **Response Handling:**
  - **Positive Responses:** Go on to Step 10 (Scholarship Options).
  - **Negative Responses:** Assistant would respond, "Thank you for looking into our B.Sc Nursing program! Should you have any more questions or require assistance with the application process, please let us know" (Conversation ends).
  - **Unclear Response:** Assistant would say, "Could you please clarify if you want to know about scholarships? Please say 'Yes' or 'No'."

## Step 10: Scholarship Options:

- **Assistant:** We offer the following scholarship options:
  - Government Post-Matric Scholarship : Rs. 18,000 - Rs. 23,000
  - The Labour Ministry Scholarships: Rs. 40,000 - Rs. 48,000 (Applicant should have a Labour Registration)

Do you want assistance with filling up the form or do you want to know more?

- **Treatment of Responses:**
  - **Affirmative will elicit:** Some brief guidance can be given such as: "You may apply for the scholarships through the college's admission offices or through the online portals." The assistant then may carry on with other topics if need be.
  - **Negative will elicit:** In such a case, the Assistant will respond: "Thank you for exploring our BSc Nursing program! Should you require further assistance or help with the application process, do not hesitate to contact us." (End of Conversation.)

- Does not make any sense: "Could you clarify if you are interested in more details about scholarships or other topics? Please say 'Yes' or 'No'."

## **Evaluation Criteria Addressed:**

- Conversation Design Strategic Flow: It is set in a manner that the whole flow smoothly leads the users throughout the entire admission process with smooth transitions and user-driven interaction.
- Accurate: This would include data on fees, scholarships, and eligibility directly taken from the assignment document.
- Conversational Clarity: A clearly effective communication style is maintained, as well with gauging user understanding at each step.
- User Experience: The flow is interactive, polite to the user input, and gives the freedom to exit or delve further.

## **Notes on Design Choices:**

- Clarity and Structure-The theme of this flow is organized into steps, subsequently following in logic of arriving from initial interest to detail information.
- User-Friendly Tone: The assistant will keep a professional yet approachable tone, using simple language for user-friendliness.
- Response Handling: Positive, negative, and ambiguous responses were handled according to set rules, including polite exits or requesting clarifications.
- Conciseness and Clarity: Information was presented in a succinct manner to not overwhelm the user but instead present options for being more thorough.
- Error Handling: Ambiguous responses require clarification.
- Cultural Sensitivity: Will accommodate bilingualism from English to Hindi, as displayed in the document's examples.
- Completeness: Systematically covers all the topics required.

## Sample code for the whole Conversational Flow:

### B.Sc Nursing Admission Assistant Chatbot (English / हिंदी)

User: Hey  
Bot: Language set to English. Are you interested in B.Sc Nursing admission?

User: Yes  
Bot: Did you have Biology in 12th grade?

User: Yes, I do.  
Bot: Great! Would you like to know more about the B.Sc Nursing program?

User: Yes, I do.  
Bot: Fee Details:  
- Tuition: ₹60,000  
- Bus: ₹10,000  
- Total: ₹70,000 (Installments: ₹30k, ₹20k, ₹20k)

Want to know about hostel & facilities?

```
# Step 0: Set Language
if language is None:
    language = "hi" if "hindi" in user_input.lower() else "en"
    reply = t(
        "Language set to English. Are you interested in B.Sc Nursing admission?",
        "भाषा हिंदी सेट की गई है। क्या आप B.Sc नर्सिंग में प्रवेश लेना चाहते हैं?"
    )
    return log(user_input, reply)

# Step 1: Admission interest
if len(chat_history) == 2:
    if is_negative(user_input):
        return log(user_input, t("No problem. Reach out anytime!", "कोई बात नहीं! भविष्य में संपर्क करें।"))
    return log(user_input, t("Did you have Biology in 12th grade?", "क्या आपने 12वीं में बायोलॉजी लिया था?"))

# Step 2: Check eligibility
if len(chat_history) == 4:
    if is_negative(user_input) or re.search(r"\b(physics|maths|commerce|arts|other)\b", user_input.lower()):
        reply = t(
            "Sorry, Biology in 12th is required. Want info about other programs?",
            "माफ़ कीजिए, 12वीं में बायोलॉजी जरूरी है। क्या आप अन्य कोर्स जानना चाहेंगे?"
        )
        return log(user_input, reply)
    return log(user_input, t("Great! Would you like to know more about the B.Sc Nursing program?",
        "क्या आप B.Sc नर्सिंग प्रोग्राम के बारे में जानना चाहेंगे?"))

# Steps: Program Details
steps = [
    (t("It's a 4-year course with practical hospital training.", "यह 4-वर्षीय कोर्स है जिसमें अस्पताल प्रशिक्षण शामिल है।"),
    t("Would you like to know about the fee structure?", "क्या आप फीस की जानकारी चाहते हैं?")),
    (t("Fee Details:<br>- Tuition: ₹60,000<br>- Bus: ₹10,000<br>- Total: ₹70,000 (Installments: ₹30k, ₹20k, ₹20k)",
    "फीस विवरण:<br>- ट्यूशन: ₹60,000<br>- बस: ₹10,000<br>- कुल: ₹70,000 (किस्त: ₹30k, ₹20k, ₹20k)"),
    t("Want to know about hostel & facilities?", "क्या आप होस्टल और सुविधाएं जानना चाहेंगे?")),

```

Want to know training hospital names?

User: Yes, I do.  
Bot: Training at:  
- Backundpur Hospital  
- Chartha Regional  
- Ranchi Neurosurgery  
- CHCs

Want to know about scholarships?

User: Yes, I do.  
Bot: Scholarships:  
- Govt Post-Matric: ₹18k-₹23k  
- Labour Ministry: ₹40k-₹48k

Want to know about total seats?



```

step = (len(chat_history) - 4) // 2
if step < len(steps):
    if is_positive(user_input):
        content, next_q = steps[step]
        return log(user_input, f"{content}<br><br>{next_q}")
    return log(user_input, t("Okay. Let me know if you need anything else.",
                             "ठीक है। कुछ और चाहिए तो बताएं।"))
return log(user_input, t("Conversation completed.", "बातचीत समाप्त हुई!"))

# Helper: Log and format history
def log(user_msg, bot_msg):
    chat_history.append((user_msg))
    chat_history.append((bot_msg))
    return "<br><br>".join([
        f"<b>User:</b> {u}<br><b>Bot:</b> {b}" for u, b in zip(chat_history[::2], chat_history[1::2])
    ])

```

Want to review eligibility again?

User: Yes, I do.

Bot: Eligibility:

- Biology in 12th
- PNT Exam
- Age: 17-35

Want to apply or know next steps?

User: Hello

Bot: Okay. Let me know if you need anything else.

## Flow Chart:

