INSY 660 Assignment

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Company Overview and Mission Statement : Velo Pakistan

Overview

Large retailers are able to stock a large variety of flavours. Whereas, small retailers are only able to stock a fraction of the total available flavours, and must be far more selective with the flavours they stock. These small retailers still account for a meaningful portion of Velo sales in Pakistan, and thus it is important to ensure that the flavour selections in each small retailer are highly optimised for the demographics in the region. Furthermore, Velo currently struggles to identify flavours that have potential but are currently underperforming. It is important that Velo is able to identify these flavours to target them for further development through consumer trials.

We aim to collect basic demographic and preference data to recommend the right flavour/strength mix for small retailers by region and to surface flavours with untapped potential for targeted trials.

Key Challenges

1. Store level product prioritization:
   Decide which flavours/strengths to stock in each small retailer given local demand and limited capacity.

2. Identify under-realized flavours:
   Identifying flavours that appeal to new customers, but do not meet expectations/underperform with pre-existing users for follow-up trials.

3. Customer base:
   Building a detailed picture of their customer base and modern category consumers, including nicotine usage patterns and switching behaviour.

Our Proposition

We propose a chatbot that will exist as an optional survey on the Velo.com.pk website that collects: age, current nicotine uptake type, gender, region

(North/Central/Southern/SNB), urban vs rural, occupation, prior nicotine-pouch usage, Velo usage, preferred strength (if applicable), and flavour preferences. The Python chat bot collects a structured dictionary containing each of these fields that can be appended for each user input.

The chatbot will address the challenges like so:

1. Store level product prioritization
   Flavour and strength preferences can be aggregated by region and urban/rural to produce a prioritization list for each store.

2. Identify under-realized flavours
   The frequency discrepancy between new user flavour selections and existing Velo user flavour selections can be utilized to flag flavours for trials and further development.

3. Customer base
   The data gathered can be used to group customers and decide what to produce and how to market locally.

Decision Tree Explanation

There are various moral and regulatory considerations we must be aware of due to the addictive nature of the product. We first ask for the persons' age, and remove them from the survey if they are below 18, and then we ask if the person is a nicotine user, and remove them from the survey if they are not. These questions remove underaged persons and non-nicotine users from the website.

After that, we gather relevant demographics data about the user including gender, region, region population density and occupation. Then, we ask users if they have ever used nicotine pouches. If they haven't their strength tolerance is assigned low, and they will skip past the strength question to the flavour preferences.

If the user has used nicotine pouches, we then enquire if they have used Velo brand products before. We gather this information for both marketing purposes, and to differentiate flavour preferences between users who have tried the product and those who haven't. As these people are users of nicotine pouches, we then ask for their typical preference of strength.

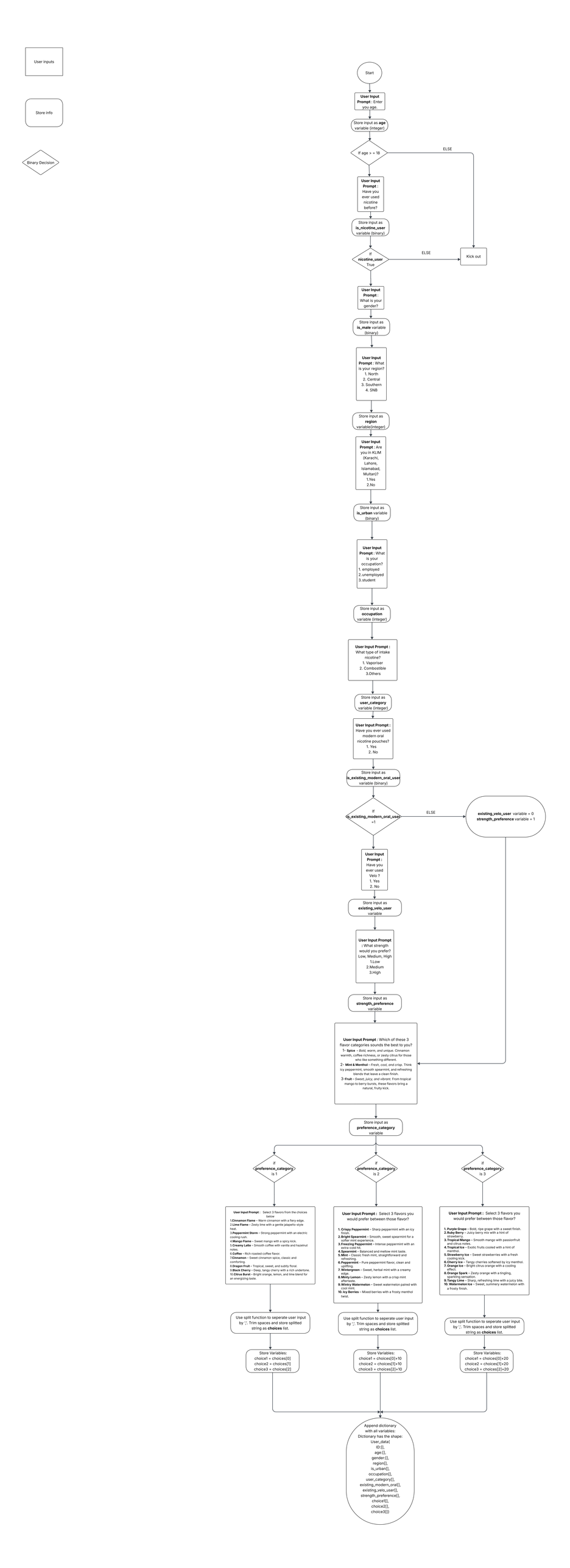
Finally, we ask both nicotine pouch users and non-nicotine pouch users to choose between 3 flavor categories. We then display a selection of our flavours that match their tastes as to not overwhelm them with the total flavour selection. We ask them to choose three of the most attractive flavours within their chosen category.

Limitations :

1. Level of detail:
   Due to the complexity of the task, we are assuming that separating Pakistan into 4 regions, and then again into either urban or rural is sufficient to capture accurate flavour preference data for the entirety of the stores in each of these segments. However, it is likely that in reality, flavour preferences will vary on a microscopic scale, from neighbourhood to neighbourhood within each of these segments. Thus, our data will not capture these changes between neighbourhoods

2. Sample size:
   Furthermore, we must ensure that the number of responses is significant enough for any pattern noticed to be at all meaningful. Make sure a minimum amount of responses per region are recorded before making business decisions based on the information.

3. Response bias (self selection bias)
   As the survey itself exists only on the Velo website, it is likely that most users will be pre-existing velocity users. The survey could potentially be shared across various promotion channels to avoid this.


User inputs
Store info
Binary Decision
Start
User Input Prompt : Enter you age.
Store input as age variable (integer)
If age > = 18
ELSE
User Input Prompt : Have you ever used niccotine before?
Store input as is_nicotine_user variable (binary)
If nicotine_user True
ELSE
Kick out
User Input Prompt : What is your gender?
Store input as is_male variable (binary)
User Input Prompt : What is your region? 1. North 2. Central 3. Southern 4. SNB
Store input as region variable(integer)
User Input Prompt : Are you in KLIM (Karachi, Lahore, Islamabad, Multan)? 1.Yes 2.No
Store input as is_urban variable (binary)
User Input Prompt : What is your occupation? 1. employed 2. unemployed 3. student
Store input as occupation variable (integer)
User Input Prompt : What type of intake nicotine? 1. Vaporiser 2. Combostible 3.Others
Store input as user_category variable (integer)
User Input Prompt : Have you ever used modern oral nicotine pouches? 1. Yes 2. No
Store input as is_existing_modern_oral_user variable (binary)
If is_existing_modern_oral_user =1
ELSE
existing_velo_user variable = 0
strength_preference variable = 1
User Input Prompt : Have you ever used Velo ? 1. Yes 2. No
Store input as existing_velo_user variable
User Input Prompt : What strength would you prefer? Low, Medium, High 1.Low 2.Medium 3.High
Store input as strength_preference variable
User Input Prompt : Which of these 3 flavor categories sounds the best to you?
1- Spice – Bold, warm, and unique. Cinnamon warmth, coffee richness, or zesty citrus for those who like something different.
2- Mint & Menthol – Fresh, cool, and crisp. Think icy peppermint, smooth spearmint, and refreshing blends that leave a clean finish.
3-Fruit – Sweet, juicy, and vibrant. From tropical mango to berry bursts, these flavors bring a natural, fruity kick.
Store input as preference_category variable
If preference_category is 1
If preference_category is 2
If preference_category is 3
User Input Prompt : Select 3 flavors from the choices below
1.Cinnamon Flame – Warm cinnamon with a fiery edge.
2.Lime Flame – Zesty lime with a gentle jalapeño-style heat.
3.Peppermint Storm – Strong peppermint with an electric cooling rush.
4.Mango Flame – Sweet mango with a spicy kick.
5.Creamy Latte – Smooth coffee with vanilla and hazelnut notes.
6.Coffee – Rich roasted coffee flavor.
7.Cinnamon – Sweet cinnamon spice, classic and comforting.
8.Dragon Fruit – Tropical, sweet, and subtly floral.
9.Black Cherry – Deep, tangy cherry with a rich undertone.
10.Citrus Burst – Bright orange, lemon, and lime blend for an energizing taste.
User Input Prompt : Select 3 flavors you would prefer between those flavor?
1. Crispy Peppermint – Sharp peppermint with an icy finish.
2. Bright Spearmint – Smooth, sweet spearmint for a softer mint experience.
3. Freezing Peppermint – Intense peppermint with an extra cooling effect.
4. Spearmint – Balanced and mellow mint taste.
5. Mint – Classic fresh mint, straightforward and refreshing.
6. Peppermint – Pure peppermint flavor, clean and uplifting.
7. Wintergreen – Sweet, herbal mint with a creamy undertone.
8. Minty Lemon – Zesty lemon with a crisp mint aftertaste.
9. Wintry Watermelon – Sweet watermelon paired with cool mint.
10. Icy Berries – Mixed berries with a frosty menthol twist.
User Input Prompt : Select 3 flavors you would prefer between those flavor?
1. Purple Grape – Bold, ripe grape with a sweet finish.
2. Ruby Berry – Juicy berry mix with a hint of strawberry.
3. Tropical Mango – Smooth mango with passionfruit and citrus notes.
4. Tropical Ice – Exotic fruits cooled with a hint of menthol.
5. Strawberry Ice – Sweet strawberries with a fresh cooling kick.
6. Cherry Ice – Tangy cherries softened by icy menthol.
7. Orange Ice – Bright citrus orange with a cooling effect.
8. Orange Spark – Zesty orange with a tingling, sparkling sensation.
9. Tangy Lime – Sharp, refreshing lime with a juicy bite.
10. Watermelon Ice – Sweet, summery watermelon with a frosty finish.
Use split function to seperate user input by ',', Trim spaces and store splitted string as choices list.
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Store Variables: choice1 = choices[0] choice2 = choices[1] choice3 = choices[2]
Store Variables: choice1 = choices[0]+10 choice2 = choices[1]+10 choice3 = choices[2]+10
Store Variables: choice1 = choices[0]+20 choice2 = choices[1]+20 choice3 = choices[2]+20
Append dictionary with all variables: Dictionary has the shape: User_data{ ID:[], age:[], gender:[], region[], is_urban[], occupation[], user_category[], existing_modern_oral[], existing_velo_user[], strength_preference[], choice1[], choice2[], choice3[]}