Development of Business Application Project

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Introduction

This project aims to develop a comprehensive information system for a language learning center. The system is designed to automate and streamline the educational business processes, including class booking, student registration, and tutor applications. By integrating these processes, the system enhances operational efficiency, improves accuracy in scheduling and billing, and ensures a seamless user experience for both students and tutors.

Company Departments and Their Functions

The language learning center operates with several key departments, each performing essential roles to ensure smooth interactions between students and tutors, and efficient processing of applications and bookings. The main departments are:

1. **Customer Department**
   o **Handle Class Requests:** Receive and process requests for classes from students.
   o **Identify and Verify Students:** Confirm the student's registration status to validate their class requests.
   o **Check Tutor Availability:** Determine the availability of tutors to fulfill class requests.
   o **Propose Class Offers:** Create class proposals based on tutor availability and student preferences.
   o **Manage Class Bookings:** Confirm and register class bookings once accepted by students.
2. **Finance Department**
   o **Manage Payments:** Oversee the collection and processing of tuition payments from students.
   o **Confirm Transactions:** Ensure payments are accurately recorded and confirm booking upon payment verification.
   o **Coordinate with Banks:** Handle interactions with banks for payment confirmations and financial transactions.
3. **HR Department**
   o **Process Tutor Applications:** Receive applications from prospective tutors.
   o **Assess Tutor Eligibility:** Evaluate the qualifications and eligibility of tutor applicants.

- o **Update Applicant Tracking System (ATS)**: Record the evaluation results and update the applicant's status in the system.
- o **Create Tutor Profiles:** Set up profiles for approved tutors, allowing them to create classes and schedules.
- o **Inform Tutors:** Communicate application outcomes to tutors and provide instructions for successful applicants to proceed with creating classes.
4. **Admission Department**
   - o **Handle Student Registrations:** Manage the registration process for new students, including receiving applications and verifying eligibility.
   - o **Review Registration Eligibility:** Confirm the eligibility of students before completing their registration process.
   - o **Create Student Profiles:** Set up student profiles upon successful registration.
   - o **Notify Students:** Inform students about their registration status and provide necessary login details to access the system.

Primary and Supporting Processes

Primary Process

- Class Booking
  - Receive class request
  - Verify tutor's availability
  - Propose class offer
  - Process and finalize class booking

Supporting Process

- New student registration
  - Receive registration request
  - Review student information
  - Process and create student profile
- Tutor application
  - Receive application
  - Assess tutor eligibility
  - Process and create tutor profile

Entity relationship diagram

1. **ATS to Tutor**

- **Relationship**: One-to-Many

- **Explanation**: The **ATS** (Applicant Tracking System) tracks and records applications and statuses for multiple tutors. Each entry in the ATS can correspond to several tutors, ensuring accurate tracking of all tutor applications and related details.
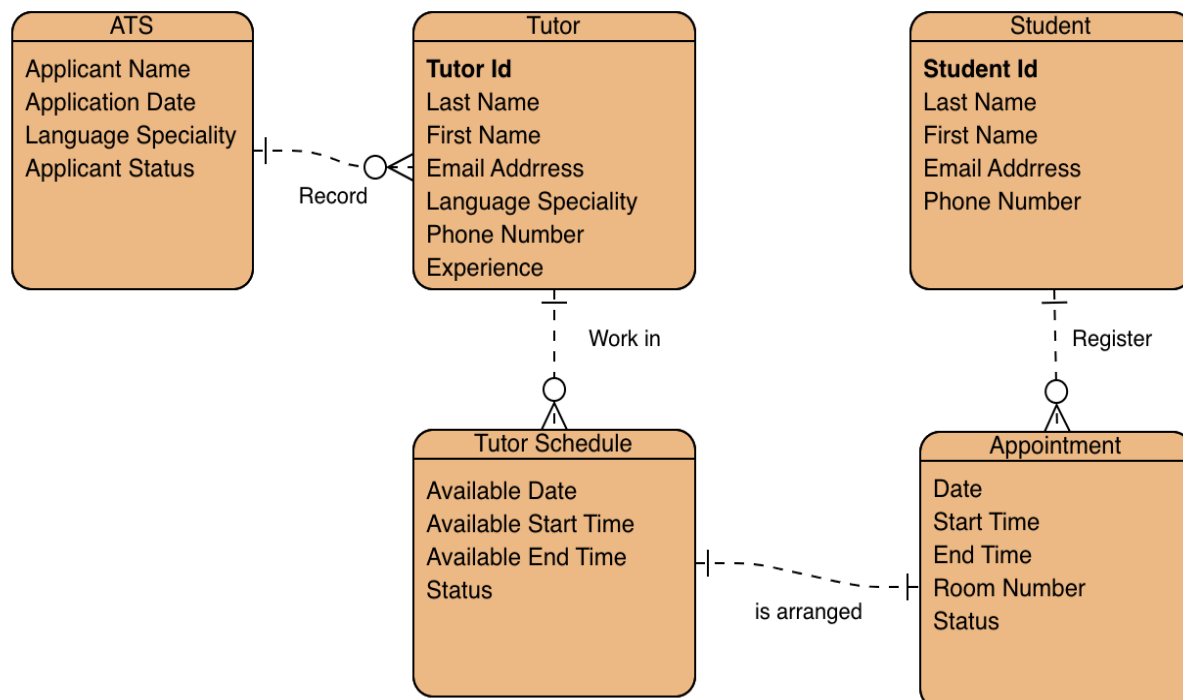
2. **Tutor to Tutor Schedule**

- **Relationship**: One-to-Many
- **Explanation**: A tutor can have multiple schedules, which represent their available time slots or the different classes they teach. Each schedule is uniquely linked to one tutor, reflecting the tutor's specific availability or teaching assignments.

3. **Tutor Schedule to Appointment**

- **Relationship**: One-to-One
- **Explanation**: Each entry in the tutor's schedule corresponds to a single appointment. This means that each available time slot in the tutor's schedule can only be occupied by one appointment, ensuring that no time slot is double-booked. Each appointment reflects the details of the session, including the exact date, start and end times, room number, and status.

4. **Student to Appointment**

- **Relationship**: One-to-Many
- **Explanation**: A student can register for multiple appointments, representing different sessions or classes they have enrolled in. Each appointment is associated with a specific student, detailing the session information unique to that student.

ATS	Tutor	Student
Applicant Name	**Tutor Id**	**Student Id**
Application Date	Last Name	Last Name
Language Speciality	First Name	First Name
Applicant Status	Email Addrress	Email Addrress
	Language Speciality	Phone Number
	Phone Number	
	Experience	

Record

Work in

Register

Tutor Schedule	Appointment
Available Date	Date
Available Start Time	Start Time
Available End Time	End Time
Status	Room Number
	Status

is arranged

BPMN Diagram
1. Class Booking

Swimlanes:

1. **Student:**
   - Represents the student who interacts with the language learning center to request and book classes.
2. **Customer Department:**
   - Manages student identification, checks tutor schedules, proposes class offers, and confirms bookings.
3. **Finance Department:**
   - Oversees financial transactions, including confirming tuition payments.
4. **Tutor:**
   - Represents the tutor whose availability is checked and who conducts the class sessions.
5. **Bank:**
   - Handles the financial transactions related to payment processing and confirmation.

Process Flow:

1. **Class Request Initiation:**
   - The student initiates the process by requesting a class.
2. **Identify Student:**
   - The Customer Department verifies if the student is registered in their system. If the student is not registered, they must complete the registration process.
3. **Check Tutor Schedule:**
   - The Customer Department checks the availability of the tutor for the requested class based on the tutor's schedule.
4. **Propose Class Offer:**
   - If the tutor is available, the Customer Department proposes a class offer to the student.
5. **Review Class Proposal:**
   - The student receives and reviews the class proposal.
6. **Class Proposal Decision:**
   - The student decides to either accept or reject the class offer:
     - **Reject Offer:** If the student rejects the offer, another class proposal may be made.
     - **Accept Offer:** If the student accepts the offer, they proceed to book the class.
7. **Book Class:**
   - The class booking is confirmed by the Customer Department once the student accepts the offer.

8. **Register Appointment:**
    - o The appointment is recorded, and the visit is logged into the system under the booking schedule.
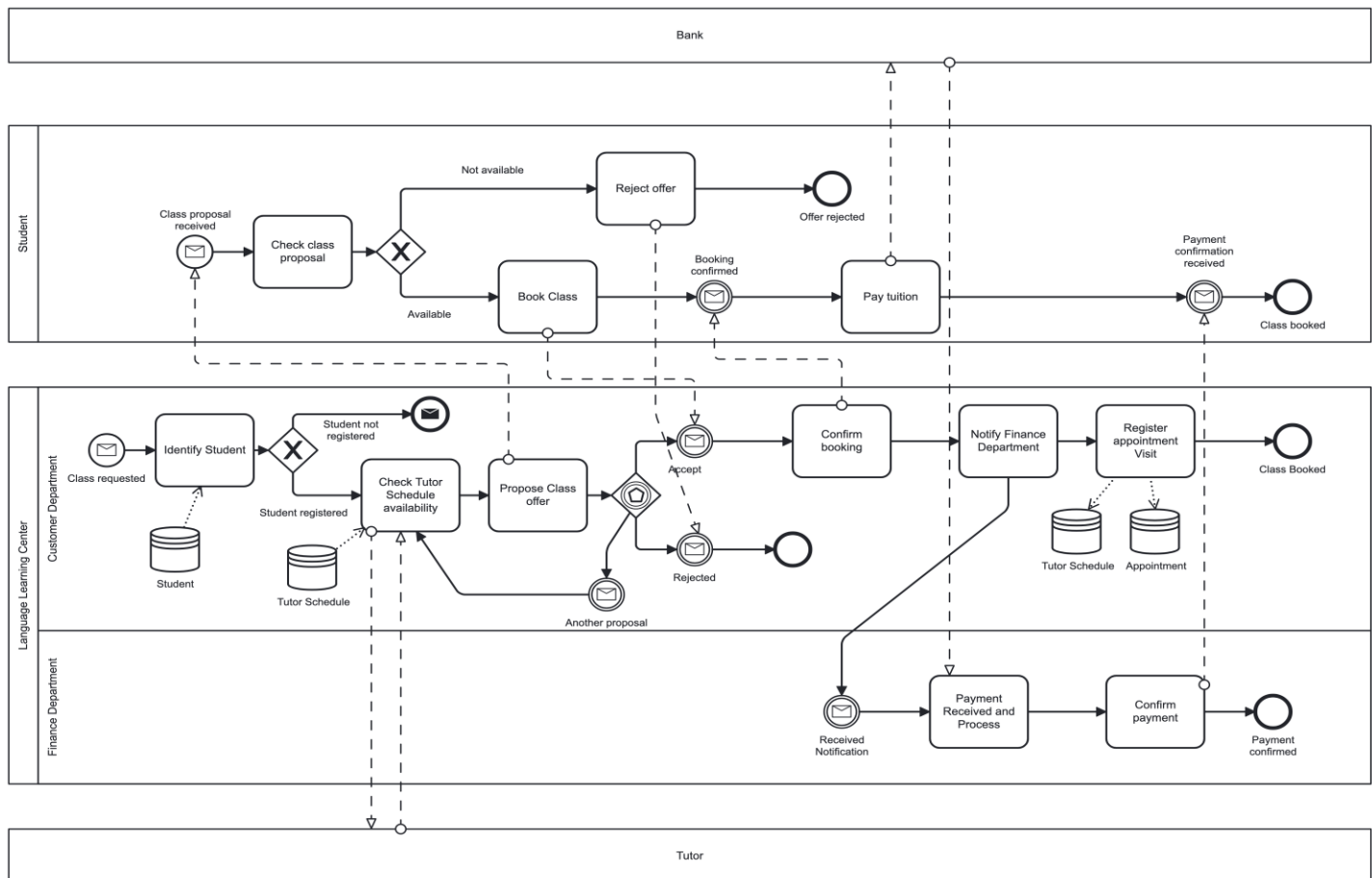9. **Pay Tuition:**
    - o The student pays the tuition fee through the bank.
10. **Confirm Payment:**
    - o The Finance Department confirms the receipt of the payment.
11. **Payment Confirmation:**
    - o After payment confirmation, the class is officially booked, and the student is notified.

2. **New student registration**

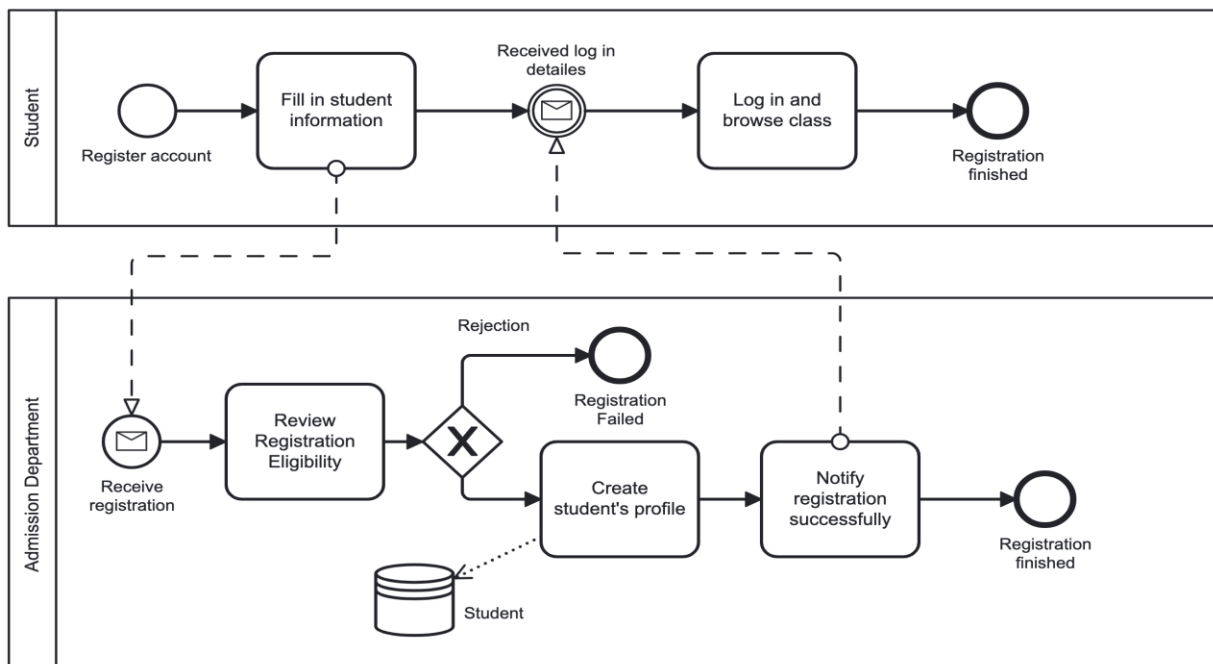**Swimlanes:**

1. **Student:**
    - o Represents the student registering for the account and interacting with the system to log in and access class information.
2. **Admission Department:**
    - o Handles the reception and verification of student registration information and the creation of student profiles.

Process Flow:

1. **Register Account:**
   - The process begins when a student initiates account registration.
2. **Fill in Student Information:**
   - The student completes the registration form by providing their personal information.
3. **Receive Registration:**
   - The Admission Department receives the completed registration details for verification.
4. **Review Registration Eligibility:**
   - The Admission Department checks if the student meets the registration criteria.
   - **Rejection:** If the student's information does not meet the criteria, the registration fails.
   - **Acceptance:** If the student is eligible, the department proceeds to create the student's profile.
5. **Create Student's Profile:**
   - A student profile is created and stored in the system.
6. **Notify Registration Successfully:**
   - The student is notified that the registration has been successful.
7. **Received Log In Details:**
   - The student receives login details via email for accessing their account.
8. **Log In and Browse Class:**
   - The student logs into their account and browses available classes.
9. **Registration Finished:**
   - The registration process is completed, allowing the student to interact with the system for further activities.

3. New Tutor Application

Swimlanes:

1. **Tutor:**
   - Represents the tutor applying to join the system, providing required information, and eventually creating classes and schedules.
2. **HR Department:**
   - Manages the tutor application process, including eligibility assessment, application tracking, and profile creation.

Process Flow:

1. **Start Application:**
   - The process begins when a tutor initiates their application to join the system.
2. **Fill in Sign-Up Information:**
   - The tutor fills out the sign-up form with the necessary personal and professional details.
3. **Application Request:**
   - The HR Department receives the tutor's application for review.
4. **Assess Tutor Eligibility:**
   - The HR Department evaluates the application to determine if the tutor meets the eligibility criteria.
   - **Rejection:** If the tutor does not meet the criteria, the application is rejected, and the tutor is informed of the failure.
   - **Approval:** If the tutor meets the criteria, the department proceeds with the application process.
5. **Update Applicant Tracking System (ATS):**
   - The tutor's application status is updated in the Applicant Tracking System (ATS).
6. **Create Tutor's Profile:**
   - A profile for the tutor is created and stored in the system.
7. **Inform Application Successful:**
   - The tutor is notified that their application has been successful and they have been accepted.
8. **Receive Job Offer:**
   - The tutor receives a job offer via email, including details for setting up classes.
9. **Log in and Create Class and Schedule:**
   - The tutor logs into their account and sets up their classes and schedules.
10. **Application Finished:**
    - The application process is completed, and the tutor can now interact with the system to manage their classes.

Tutor

Start application

Fill in sign up information

Receive job offer

Log in and create class and schedule

Application finished

HR Department

Application request

Assess tutor eligibility

Rejection → Application Failed

Approval

Update Applicant Tracking System

ATS

Create tutor's profile

Tutor

Inform application successful

Application finished