Phase 5: Apex Programming (Developer)

1. Apex Classes & Objects:

(ResidentConnect): A class to calculate total flats in a society.

```
public class SocietyHelper {
    public static Integer getTotalFlats(Id accountId) {
        List<Flat__c> flats = [SELECT Id FROM Flat__c WHERE
Account__c = :accountId];
        return flats.size();
    }
}
```

steps: Setup → Apex Classes → New → Paste code → Save.

2. Apex Triggers:

```
trigger UpdateResidentCount on Contact (after insert, after delete) {
    Set<Id> accIds = new Set<Id>();
    if(Trigger.isInsert){
        for(Contact c : Trigger.new){
            accIds.add(c.AccountId);
        }
    }
    if(Trigger.isDelete){
        for(Contact c : Trigger.old){
            accIds.add(c.AccountId);
        }
    }
    List<Account> accList = [SELECT Id, Total_Residents__c,
                             (SELECT Id FROM Contacts) FROM Account
                             WHERE Id IN :accIds];
    for(Account a : accList){
        a.Total_Residents__c = a.Contacts.size();
    }
    update accList;
}
```

3. Trigger Design Pattern:

```
trigger ResidentTrigger on Contact (after insert, after delete) {
    ResidentTriggerHandler.updateResidentCount(Trigger.new, Trigger.old,
Trigger.isInsert, Trigger.isDelete);
}

public class ResidentTriggerHandler {
    public static void updateResidentCount(List<Contact> newList,
List<Contact> oldList, Boolean isInsert, Boolean isDelete){
        // logic here
    }
}
```

4. SOQL & SOSL:

```
List<Case> cases = [SELECT Id, Status FROM Case WHERE Status = 'Emergency'];

List<List<SObject>> results = [FIND 'John' IN ALL FIELDS RETURNING Contact(Name,
Email)];
```

5. Collections (List, Set, Map):

List: Ordered collection → `List<String> names = new List<String>();`

Set: Unique values → `Set<String> emails = new Set<String>();`

Map: Key-value pair → `Map<Id, Contact> contactMap = new Map<Id, Contact>([SELECT Id, Name FROM Contact]);`

6. Control Statements:

```
for(Contact c : [SELECT Name, Email FROM Contact]){
    if(c.Email == null){
        System.debug('Resident has no email');
    }
}
```

7.Batch Apex (for large data):

global class RecalculateResidentsBatch implements

```
Database.Batchable<SObject> {
```

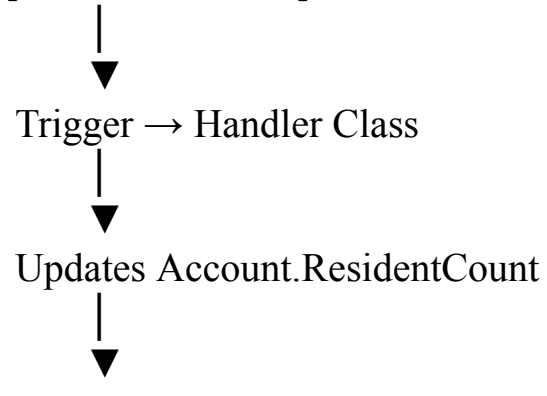
```
    global Database.QueryLocator start(Database.BatchableContext bc){
        return Database.getQueryLocator('SELECT Id FROM Account');
    }
    global void execute(Database.BatchableContext bc, List<Account>
accList){
        for(Account a : accList){
            a.Total_Residents__c = [SELECT COUNT() FROM Contact
WHERE AccountId = :a.Id];
        }
        update accList;
    }
    global void finish(Database.BatchableContext bc){}
}
```

8. Queueable Apex (asynchronous, lightweight):

```
public class EmergencyNotifier implements Queueable {
    public void execute(QueueableContext context){
        // Send custom notifications
    }
}
```

9. Scheduled Apex (run at specific time):

```
global class EventReminderScheduler implements Schedulable {
    global void execute(SchedulableContext sc){
        // Send event reminders
    }
}
```



Notifications / Reports / Updates