Dhanu’s The Massachusetts Health Connector is a state-based health insurance marketplace in Massachusetts, USA. It was established under the Affordable Care Act (ACA) to provide residents of Massachusetts with a platform to compare and purchase health insurance plans. Here are some key points about the Massachusetts Health Connector:

1. **Purpose**: The Health Connector allows individuals, families, and small businesses in Massachusetts to shop for and enroll in health insurance coverage. It aims to make health insurance more accessible and affordable for residents.
2. **Coverage Options**: Through the Health Connector, individuals can compare various health insurance plans from different insurance carriers. These plans include coverage for essential health benefits as mandated by the ACA.
3. **Subsidies and Financial Assistance**: The Health Connector offers financial assistance to eligible individuals and families to help lower the cost of health insurance premiums. This assistance is based on income and household size, and it helps make coverage more affordable for those who qualify.
4. **Open Enrollment and Special Enrollment Periods**: Like other health insurance marketplaces, the Health Connector has specific open enrollment periods each year when individuals can enroll in or change their health insurance plans. Special enrollment periods are available for those who experience qualifying life events, such as marriage, birth of a child, or loss of other health coverage.
5. **State-Based Exchange**: Massachusetts operates its own health insurance exchange, separate from the federal marketplace (HealthCare.gov). This allows the state to tailor its health insurance offerings to meet the needs of its residents.
6. **Website and Resources**: The Massachusetts Health Connector website provides resources and tools to help individuals understand their health insurance options, calculate subsidy eligibility, and enroll in coverage online.
7. **Health Insurance Mandate**: Massachusetts has its own individual mandate requiring most residents to have health insurance coverage that meets minimum standards. The Health Connector helps residents comply with this requirement by offering qualified health plans.

Overall, the Massachusetts Health Connector plays a crucial role in facilitating access to health insurance for residents of Massachusetts, ensuring that they have options to choose from and financial assistance if needed.

 **Users**

* user\_id (PK)
* username
* email
* password\_hash
* registration\_date

 **Plans**

* plan\_id (PK)
* plan\_name
* plan\_description
* premium\_amount

 **Enrollments**

* enrollment\_id (PK)
* user\_id (FK referencing Users)
* plan\_id (FK referencing Plans)
* enrollment\_date
* start\_date
* end\_date
* enrollment\_status (e.g., active, terminated)

 **Subsidies**

* subsidy\_id (PK)
* user\_id (FK referencing Users)
* subsidy\_amount
* subsidy\_start\_date
* subsidy\_end\_date

 **Payments**

* payment\_id (PK)
* user\_id (FK referencing Users)
* payment\_date
* payment\_amount
* payment\_method

 **Providers**

* provider\_id (PK)
* provider\_name
* provider\_address
* provider\_contact\_info

 **Claims**

* claim\_id (PK)
* user\_id (FK referencing Users)
* provider\_id (FK referencing Providers)
* claim\_date
* claim\_amount
* claim\_status

 **Coverage**

* coverage\_id (PK)
* user\_id (FK referencing Users)
* plan\_id (FK referencing Plans)
* coverage\_type (e.g., individual, family)
* coverage\_start\_date
* coverage\_end\_date

 **Premiums**

* premium\_id (PK)
* plan\_id (FK referencing Plans)
* age\_start
* age\_end
* premium\_amount

 **Contacts**

* contact\_id (PK)
* user\_id (FK referencing Users)
* contact\_type (e.g., primary, emergency)
* contact\_name
* contact\_relationship
* contact\_phone

SELECT u.username, e.enrollment\_id, p.plan\_name, s.subsidy\_amount FROM Users u JOIN Enrollments e ON u.user\_id = e.user\_id JOIN Plans p ON e.plan\_id = p.plan\_id LEFT JOIN Subsidies s ON u.user\_id = s.user\_id WHERE u.username = 'example\_user' AND e.enrollment\_status = 'active';

**Users:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | **user\_id** | **username** | **email** | **registration\_date** | | --- | --- | --- | --- | | 1 | alice123 | alice@example.com | 2023-01-15 | | 2 | bob456 | bob@example.com | 2023-02-20 | | 3 | charlie789 | charlie@example.com | 2023-03-10 | |

**Plans:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | **plan\_id** | **plan\_name** | **plan\_description** | **premium\_amount** | | --- | --- | --- | --- | | 101 | Basic Plan | Basic coverage with limited benefits | 100 | | 102 | Standard Plan | Standard coverage with comprehensive benefits | 150 | | 103 | Premium Plan | Premium coverage with extensive benefits | 200 | |
|  |

**Enrollments:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | **enrollment\_id** | **user\_id** | **plan\_id** | **enrollment\_date** | **start\_date** | **end\_date** | **enrollment\_status** | | --- | --- | --- | --- | --- | --- | --- | | 201 | 1 | 101 | 2023-01-20 | 2023-02-01 | 2023-12-31 | active | | 202 | 2 | 102 | 2023-02-25 | 2023-03-01 | 2023-11-30 | active | | 203 | 3 | 103 | 2023-03-15 | 2023-04-01 | 2023-10-31 | terminated | |

**Subsidies:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | **subsidy\_id** | **user\_id** | **subsidy\_amount** | **subsidy\_start\_date** | **subsidy\_end\_date** | | --- | --- | --- | --- | --- | | 301 | 1 | 50 | 2023-02-01 | 2023-12-31 | | 302 | 2 | 75 | 2023-03-01 | 2023-11-30 | |

**Users:**

|  |  |  |  |
| --- | --- | --- | --- |
| user\_id | username | email | registration\_date |
| 1 | alice123 | alice@example.com | 2023-01-15 |
| 2 | bob456 | bob@example.com | 2023-02-20 |
| 3 | charlie789 | charlie@example.com | 2023-03-10 |

**Plans:**

|  |  |  |  |
| --- | --- | --- | --- |
| plan\_id | plan\_name | plan\_description | premium\_amount |
| 101 | Basic Plan | Basic coverage with limited benefits | 100 |
| 102 | Standard Plan | Standard coverage with comprehensive benefits | 150 |
| 103 | Premium Plan | Premium coverage with extensive benefits | 200 |

**Enrollments:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| enrollment\_id | user\_id | plan\_id | enrollment\_date | start\_date | end\_date | enrollment\_status |
| 201 | 1 | 101 | 2023-01-20 | 2023-02-01 | 2023-12-31 | active |
| 202 | 2 | 102 | 2023-02-25 | 2023-03-01 | 2023-11-30 | active |
| 203 | 3 | 103 | 2023-03-15 | 2023-04-01 | 2023-10-31 | terminated |

**Subsidies:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| subsidy\_id | user\_id | subsidy\_amount | subsidy\_start\_date | subsidy\_end\_date |
| 301 | 1 | 50 | 2023-02-01 | 2023-12-31 |
| 302 | 2 | 75 | 2023-03-01 | 2023-11-30 |

**Payments:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| payment\_id | user\_id | payment\_date | payment\_amount | payment\_method |
| 401 | 1 | 2023-02-05 | 100 | credit card |
| 402 | 2 | 2023-03-05 | 150 | bank transfer |

SELECT u.username, e.enrollment\_id, p.plan\_name, s.subsidy\_amount FROM Users u JOIN Enrollments e ON u.user\_id = e.user\_id JOIN Plans p ON e.plan\_id = p.plan\_id LEFT JOIN Subsidies s ON u.user\_id = s.user\_id WHERE u.username = 'alice123' AND e.enrollment\_status = 'active';

OUTPUT

| **username** | **enrollment\_id** | **plan\_name** | **subsidy\_amount** |
| --- | --- | --- | --- |

|  |  |  |  |
| --- | --- | --- | --- |
| alice123 | 201 | Basic Plan | 50 |

SELECT u.username, SUM(p.payment\_amount) AS total\_payments FROM Users u JOIN Payments p ON u.user\_id = p.user\_id GROUP BY u.username;

OUTPUT

| **username** | **total\_payments** |
| --- | --- |

|  |  |
| --- | --- |
| alice123 | 100 |

|  |  |
| --- | --- |
| bob456 | 150 |

SELECT u.username, p.plan\_name, c.coverage\_type, c.coverage\_start\_date, c.coverage\_end\_date FROM Users u JOIN Coverage c ON u.user\_id = c.user\_id JOIN Plans p ON c.plan\_id = p.plan\_id;

OUTPUT

| **username** | **plan\_name** | **coverage\_type** | **coverage\_start\_date** | **coverage\_end\_date** |
| --- | --- | --- | --- | --- |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| alice123 | Basic Plan | individual | 2023-02-01 | 2023-12-31 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| bob456 | Standard Plan | individual | 2023-03-01 | 2023-11-30 |

QUESTIONS:

* 1. Retrieve all usernames and their corresponding enrollment details:  
     SELECT u.username, e.enrollment\_id, p.plan\_name, e.start\_date, e.end\_date FROM Users u JOIN Enrollments e ON u.user\_id = e.user\_id JOIN Plans p ON e.plan\_id = p.plan\_id;
  2. 2. List all active enrollments with their subsidy amounts:

SELECT u.username, e.enrollment\_id, p.plan\_name, s.subsidy\_amount FROM Users u JOIN Enrollments e ON u.user\_id = e.user\_id JOIN Plans p ON e.plan\_id = p.plan\_id LEFT JOIN Subsidies s ON u.user\_id = s.user\_id WHERE e.enrollment\_status = 'active';

* 1. Calculate the total number of enrollments by plan type:

SELECT p.plan\_name, COUNT(e.enrollment\_id) AS total\_enrollments FROM Plans p LEFT JOIN Enrollments e ON p.plan\_id = e.plan\_id GROUP BY p.plan\_name;

* 1. Find users who have subsidies and their subsidy amounts:

SELECT u.username, s.subsidy\_amount FROM Users u JOIN Subsidies s ON u.user\_id = s.user\_id;

* 1. Retrieve the total amount paid by each user:

SELECT u.username, SUM(p.payment\_amount) AS total\_paid FROM Users u JOIN Payments p ON u.user\_id = p.user\_id GROUP BY u.username;

* 1. List users who have made payments using a specific payment method:

SELECT u.username, p.payment\_amount, p.payment\_method FROM Users u JOIN Payments p ON u.user\_id = p.user\_id WHERE p.payment\_method = 'credit card';

* 1. Calculate the average premium amount across all plans:

SELECT AVG(premium\_amount) AS average\_premium FROM Plans;

* 1. Find the user with the highest total payment amount:

SELECT u.username, SUM(p.payment\_amount) AS total\_paid FROM Users u JOIN Payments p ON u.user\_id = p.user\_id GROUP BY u.username ORDER BY total\_paid DESC LIMIT 1;

* 1. Retrieve the earliest enrollment date for each user:

SELECT u.username, MIN(e.enrollment\_date) AS first\_enrollment\_date FROM Users u JOIN Enrollments e ON u.user\_id = e.user\_id GROUP BY u.username;

* 1. List users who have coverage information:

SELECT u.username, p.plan\_name, c.coverage\_type, c.coverage\_start\_date, c.coverage\_end\_date FROM Users u JOIN Coverage c ON u.user\_id = c.user\_id JOIN Plans p ON c.plan\_id = p.plan\_id;

* 1. Count the number of active enrollments for each user:

SELECT u.username, COUNT(e.enrollment\_id) AS active\_enrollments FROM Users u JOIN Enrollments e ON u.user\_id = e.user\_id WHERE e.enrollment\_status = 'active' GROUP BY u.username;

* 1. Calculate the total subsidy amount provided:

SELECT SUM(subsidy\_amount) AS total\_subsidy\_amount FROM Subsidies;

* 1. Find the plan with the highest number of enrollments:

SELECT p.plan\_name, COUNT(e.enrollment\_id) AS total\_enrollments FROM Plans p LEFT JOIN Enrollments e ON p.plan\_id = e.plan\_id GROUP BY p.plan\_name ORDER BY total\_enrollments DESC LIMIT 1;

* 1. Retrieve users who do not have any subsidy:

SELECT u.username FROM Users u LEFT JOIN Subsidies s ON u.user\_id = s.user\_id WHERE s.subsidy\_id IS NULL;

* 1. List users whose coverage end dates are within a specific

SELECT u.username, p.plan\_name, c.coverage\_start\_date, c.coverage\_end\_date FROM Users u JOIN Coverage c ON u.user\_id = c.user\_id JOIN Plans p ON c.plan\_id = p.plan\_id WHERE c.coverage\_end\_date BETWEEN '2023-10-01' AND '2023-12-31';

* 1. Calculate the total number of users:  
     SELECT COUNT(user\_id) AS total\_users FROM Users;
  2. Find the user who has the longest coverage duration:  
       
     SELECT u.username, DATEDIFF(c.coverage\_end\_date, c.coverage\_start\_date) AS coverage\_duration\_days FROM Users u JOIN Coverage c ON u.user\_id = c.user\_id ORDER BY coverage\_duration\_days DESC
  3. Retrieve users and their corresponding plan details ordered by enrollment date:  
     SELECT u.username, e.enrollment\_date, p.plan\_name, p.premium\_amount FROM Users u JOIN Enrollments e ON u.user\_id = e.user\_id JOIN Plans p ON e.plan\_id = p.plan\_id ORDER BY e.enrollment\_date;
  4. List users who have enrolled in more than one plan:  
     SELECT u.username, COUNT(DISTINCT e.plan\_id) AS unique\_plans\_enrolled FROM Users u JOIN Enrollments e ON u.user\_id = e.user\_id GROUP BY u.username HAVING unique\_plans\_enrolled > 1;
  5. Calculate the total amount paid per month (assuming a monthly premium):  
       
     SELECT MONTH(payment\_date) AS payment\_month, SUM(payment\_amount) AS total\_paid\_per\_month FROM Payments GROUP BY MONTH(payment\_date);