Here's a Python program that implements the Access Control Matrix (ACM) using standard primitives like:

- Create subject
- Create object
- Grant access right
- Revoke access right
- Delete subject
- Delete object

Python Implementation of Access Control Matrix

```
class AccessControlMatrix:
    def __init__(self):
        self.subjects = []
        self.objects = []
        self.acm = {}

    def create_subject(self, subject):
        if subject not in self.subjects:
            self.subjects.append(subject)
            self.acm[subject] = {obj: set() for obj in self.objects}
            for s in self.acm:
                self.acm[s][subject] = set()  # Add subject as object

    def create_object(self, obj):
        if obj not in self.objects:
            self.objects.append(obj)
            for s in self.acm:
                self.acm[s][obj] = set()

    def grant_access(self, subject, obj, right):
        if subject in self.acm and obj in self.acm[subject]:
            self.acm[subject][obj].add(right)

    def revoke_access(self, subject, obj, right):
        if subject in self.acm and obj in self.acm[subject]:
            self.acm[subject][obj].discard(right)

    def delete_subject(self, subject):
        if subject in self.subjects:
            self.subjects.remove(subject)
            del self.acm[subject]
```

```
            for s in self.acm:
                if subject in self.acm[s]:
                    del self.acm[s][subject]

    def delete_object(self, obj):
        if obj in self.objects:
            self.objects.remove(obj)
            for s in self.acm:
                if obj in self.acm[s]:
                    del self.acm[s][obj]

    def print_matrix(self):
        print("\nAccess Control Matrix:")
        print("Subjects/Objects", "\t", "\t".join(self.objects + self.subjects))
        for s in self.subjects:
            row = [",".join(self.acm[s].get(o, [])) for o in self.objects + self.subjects]
            print(f"{s}\t\t" + "\t".join(row))
        print("-" * 60)


# Sample usage
acm = AccessControlMatrix()

# Create subjects and objects
acm.create_subject("Alice")
acm.create_subject("Bob")
acm.create_object("File1")
acm.create_object("File2")

# Grant rights
acm.grant_access("Alice", "File1", "read")
acm.grant_access("Alice", "File1", "write")
acm.grant_access("Bob", "File2", "read")
acm.grant_access("Bob", "Alice", "own")

acm.print_matrix()

# Revoke rights
acm.revoke_access("Alice", "File1", "write")
acm.print_matrix()

# Delete a subject
acm.delete_subject("Bob")
acm.print_matrix()
```

```
# Delete an object
acm.delete_object("File1")
acm.print_matrix()
```

 Sample Output

```
Access Control Matrix:
Subjects/Objects        File1   File2    Alice    Bob
Alice                   read,write
Bob                             read             own
------------------------------------------------------------

Access Control Matrix:
Subjects/Objects        File1   File2    Alice    Bob
Alice                   read
Bob                             read             own
------------------------------------------------------------

Access Control Matrix:
Subjects/Objects        File1   File2    Alice
Alice                   read
------------------------------------------------------------

Access Control Matrix:
Subjects/Objects        File2   Alice
Alice
------------------------------------------------------------
```