```python
import random
class Property:
    def __init__(self, property_id, name, location, price, size,
availability=True):
        self.property_id = property_id
        self.name = name
        self.location = location
        self.price = price
        self.size = size
        self.availability = availability

    def book(self):
        if self.availability:
            self.availability = False
            return f"{self.name} has been successfully booked."
        return f"{self.name} is not available."

    def __str__(self):
        return f"{self.name} - {self.location} - ${self.price} -
{self.size} sqft - {'Available' if self.availability else 'Booked'}"

class HomeRentalSystem:
    def __init__(self):
        self.properties = []

    def add_property(self, property_id, name, location, price, size):
        new_property = Property(property_id, name, location, price, size)
        self.properties.append(new_property)

    def generate_big_data(self, num_entries=1000):
        locations = ["Hyderabad", "Secundrabad", "Kompally",
"Jeedimetla", "Miyapur", "Alwal", "Kukatpally"]
        for i in range(1, num_entries + 1):
            name = f"Property {i}"
            location = random.choice(locations)
            price = random.randint(500, 5000)
            size = random.randint(300, 5000)
            self.add_property(i, name, location, price, size)

    def search_by_location(self, location):
        return [prop for prop in self.properties if prop.location.lower()
== location.lower()]

    def book_property(self, property_id):
        for prop in self.properties:
            if prop.property_id == property_id:
                return prop.book()
        return "Property not found."

    def list_properties(self, properties, limit=10):
        return '\n'.join(str(prop) for prop in properties[:limit])

    def user_select_property(self):
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        locations = ["Hyderabad", "Secundrabad", "Kompally",
"Jeedimetla", "Miyapur", "Alwal", "Kukatpally"]
        print("Available Locations:")
        for i, loc in enumerate(locations, 1):
            print(f"{i}. {loc}")
        loc_choice = int(input("Select a location by entering the
corresponding number: "))
        selected_location = locations[loc_choice - 1]

        available_properties = self.search_by_location(selected_location)
        if not available_properties:
            print("No properties available in this location.")
            return

        print(f"\nAvailable Properties in {selected_location}:")
        print(self.list_properties(available_properties, 10))
        property_id = int(input("Enter the Property ID to book: "))
        confirmation = self.book_property(property_id)
        print(confirmation)

rental_system = HomeRentalSystem()
rental_system.generate_big_data(1000)
print("User selects a property by first choosing a location:")
rental_system.user_select_property()
print("\nAll Properties After Booking:")
print(rental_system.list_properties(rental_system.properties, 80))
```

OUTPUT:

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Available Locations:
1. Hyderabad
2. Secundrabad
3. Kompally
4. Jeedimetla
5. Miyapur
6. Alwal
7. Kukatpally
Select a location by entering the corresponding number: 1

Available Properties in Hyderabad:
Property 10 - Hyderabad - $3611 - 984 sqft - Available
Property 13 - Hyderabad - $2928 - 1823 sqft - Available
Property 14 - Hyderabad - $1890 - 4638 sqft - Available
Property 20 - Hyderabad - $3921 - 1839 sqft - Available
Property 22 - Hyderabad - $4215 - 4617 sqft - Available
Property 28 - Hyderabad - $2782 - 3164 sqft - Available
Property 49 - Hyderabad - $1334 - 3166 sqft - Available
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Property 50 - Hyderabad - $4279 - 457 sqft - Available
Property 52 - Hyderabad - $3022 - 1357 sqft - Available
Property 55 - Hyderabad - $1723 - 2336 sqft - Available
Enter the Property ID to book: 28
Property 28 has been successfully booked.

All Properties After Booking:
Property 1 - Kompally - $3649 - 1590 sqft - Available
Property 2 - Alwal - $3929 - 806 sqft - Available
Property 3 - Jeedimetla - $4198 - 2792 sqft - Available
Property 4 - Kukatpally - $1854 - 4930 sqft - Available
Property 5 - Kompally - $2692 - 1983 sqft - Available
Property 6 - Secundrabad - $1654 - 2869 sqft - Available
Property 7 - Kompally - $1587 - 2774 sqft - Available
Property 8 - Secundrabad - $2613 - 2038 sqft - Available
Property 9 - Jeedimetla - $4292 - 1224 sqft - Available
Property 10 - Hyderabad - $3611 - 984 sqft - Available
Property 11 - Kukatpally - $2568 - 4194 sqft - Available
Property 12 - Secundrabad - $4895 - 818 sqft - Available
Property 13 - Hyderabad - $2928 - 1823 sqft - Available
Property 14 - Hyderabad - $1890 - 4638 sqft - Available
Property 15 - Secundrabad - $3989 - 3854 sqft - Available
Property 16 - Kompally - $2494 - 3919 sqft - Available
Property 17 - Jeedimetla - $4734 - 1354 sqft - Available
Property 18 - Secundrabad - $2985 - 3376 sqft - Available
Property 19 - Jeedimetla - $2469 - 2010 sqft - Available
Property 20 - Hyderabad - $3921 - 1839 sqft - Available
Property 21 - Jeedimetla - $3756 - 4950 sqft - Available
Property 22 - Hyderabad - $4215 - 4617 sqft - Available
Property 23 - Kukatpally - $4054 - 4759 sqft - Available
Property 24 - Alwal - $1856 - 628 sqft - Available
Property 25 - Miyapur - $3000 - 2319 sqft - Available
Property 26 - Kukatpally - $2021 - 1681 sqft - Available
Property 27 - Kukatpally - $1494 - 3626 sqft - Available
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Property 28 - Hyderabad - $2782 - 3164 sqft - Booked
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Property 29 - Secundrabad - $917 - 1429 sqft - Available
Property 30 - Jeedimetla - $3303 - 930 sqft - Available
Property 31 - Alwal - $4342 - 4289 sqft - Available
Property 32 - Alwal - $4357 - 304 sqft - Available
Property 33 - Kukatpally - $3373 - 660 sqft - Available
Property 34 - Alwal - $1956 - 1192 sqft - Available
Property 35 - Miyapur - $554 - 1849 sqft - Available
Property 36 - Secundrabad - $3282 - 2595 sqft - Available
Property 37 - Kukatpally - $3232 - 2902 sqft - Available
Property 38 - Kukatpally - $953 - 3999 sqft - Available
Property 39 - Jeedimetla - $1622 - 2951 sqft - Available
Property 40 - Kukatpally - $1750 - 1386 sqft - Available
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Property 41 - Kukatpally - $886 - 4796 sqft - Available
Property 42 - Alwal - $1888 - 3781 sqft - Available
Property 43 - Jeedimetla - $1729 - 3078 sqft - Available
Property 44 - Kukatpally - $589 - 3427 sqft - Available
Property 45 - Secundrabad - $2074 - 4811 sqft - Available
Property 46 - Secundrabad - $3720 - 4205 sqft - Available
Property 47 - Kompally - $4549 - 3208 sqft - Available
Property 48 - Secundrabad - $1948 - 4443 sqft - Available
Property 49 - Hyderabad - $1334 - 3166 sqft - Available
Property 50 - Hyderabad - $4279 - 457 sqft - Available
Property 51 - Miyapur - $724 - 2712 sqft - Available
Property 52 - Hyderabad - $3022 - 1357 sqft - Available
Property 53 - Alwal - $2541 - 2366 sqft - Available
Property 54 - Kukatpally - $2464 - 1547 sqft - Available
Property 55 - Hyderabad - $1723 - 2336 sqft - Available
Property 56 - Miyapur - $852 - 2471 sqft - Available
Property 57 - Secundrabad - $2552 - 3458 sqft - Available
Property 58 - Alwal - $3993 - 3461 sqft - Available
Property 59 - Jeedimetla - $3634 - 685 sqft - Available
Property 60 - Jeedimetla - $1248 - 3761 sqft - Available
Property 61 - Alwal - $2399 - 3785 sqft - Available
Property 62 - Jeedimetla - $1662 - 4570 sqft - Available
Property 63 - Miyapur - $3742 - 4131 sqft - Available
Property 64 - Secundrabad - $1475 - 1085 sqft - Available
Property 65 - Jeedimetla - $4280 - 1082 sqft - Available
Property 66 - Kukatpally - $4823 - 1335 sqft - Available
Property 67 - Kompally - $704 - 4842 sqft - Available
Property 68 - Hyderabad - $4409 - 3033 sqft - Available
Property 69 - Jeedimetla - $2067 - 2151 sqft - Available
Property 70 - Alwal - $2576 - 2031 sqft - Available
Property 71 - Hyderabad - $2264 - 491 sqft - Available
Property 72 - Kukatpally - $2950 - 2970 sqft - Available
Property 73 - Miyapur - $4184 - 4701 sqft - Available
Property 74 - Secundrabad - $4482 - 1907 sqft - Available
Property 75 - Kukatpally - $3289 - 3289 sqft - Available
Property 76 - Jeedimetla - $3482 - 4498 sqft - Available
Property 77 - Secundrabad - $3709 - 1077 sqft - Available
Property 78 - Miyapur - $3820 - 4563 sqft - Available
Property 79 - Jeedimetla - $4894 - 2532 sqft - Available
Property 80 - Kukatpally - $4343 - 383 sqft - Available
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