COLLEGE CODE: 3108

COLLEGE NAME: Jeppiaar Engineering College

DEPARTMENT: Information Technology

STUDENT NM-ID: AUT 310823IT 066

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DATE:

Completed the project named as

NATURAL DISASTER

SUBMITTED BY,

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Phase 4: Natural Disaster Management System

Objective:

The focus of Phase 4 is to enhance the awareness and management systems for various natural disasters through research, preparedness planning, and community awareness. The aim is to minimize damage, loss of life, and improve response time in disaster-prone areas.

1. Earthquake Preparedness

Overview:

Wildfires spread rapidly through dry vegetation, threatening ecosystems and human settlements.

Preparedness Measures:

- Building Codes: Implement earthquake-resistant construction standards.
- Early Warning Systems: Detect seismic activity and alert populations.
- Public Education: Conduct regular drills and awareness programs.

Outcome:

Quicker response times and reduced damage from wildfires in forest-prone zones.

2. Flood Risk Management

Key Strategies:

- Urban Drainage: Build effective drainage systems

- Flood Forecasting: Use weather models for prediction and alerts.

- Community Relocation: Evacuate and provide safe shelters during threats.

3. Cyclone Management

Key Enhancements:

- Early Detection: Use satellites and drones for real-time monitoring.

- Controlled Burning: Reduce dry fuel accumulation.

- Community Awareness: Educate on fire prevention and evacuation.

4. Drought Preparedness

5. Wildfire Management

Key Challenges of phase 4

1. Timely Warnings:

- Challenge: Delivering alerts to remote or disconnected areas.

- Solution: Use radio, SMS, and community radios.

2. Infrastructure Readiness:

- Challenge: Retrofitting old buildings.

- Solution: Government funding and updated building codes.

3. Community Engagement:

- Challenge: Public awareness and training.

- Solution: School programs and local workshops

Outcomes of Phase 4

1. Stronger community-based disaster response systems.

2. Improved technology for early warning and monitoring.

3. Integration of climate data for better planning.

4. Greater public awareness on disaster risk reduction.

Next Steps for Finalization

The final phase will involve deployment of awareness materials in schools and communities, testing of mobile alert applications, and feedback collection to refine disaster preparedness systems.

Coding:

```
Import time
Import random
Def get_weather_data():
    Return {
        “temperature”: random.randint(20, 45),
        “rainfall”: random.randint(0, 300),
        “wind_speed”: random.randint(10, 200)
    }
FLOOD_RAINFALL_THRESHOLD = 200
CYCLONE_WIND_SPEED_THRESHOLD = 120
HEATWAVE_TEMPERATURE_THRESHOLD = 42
Def check_disaster_conditions(data):
    Alerts = []
    If data[“rainfall”] > FLOOD_RAINFALL_THRESHOLD:
        Alerts.append(“Flood Alert: Heavy rainfall detected!”)
    If data[“wind_speed”] > CYCLONE_WIND_SPEED_THRESHOLD:
        Alerts.append(“Cyclone Alert: High wind speed detected!”)
    If data[“temperature”] > HEATWAVE_TEMPERATURE_THRESHOLD:
        Alerts.append(“Heatwave Alert: Extreme temperature detected!”)
    Return alerts
Def monitor_disasters():
```

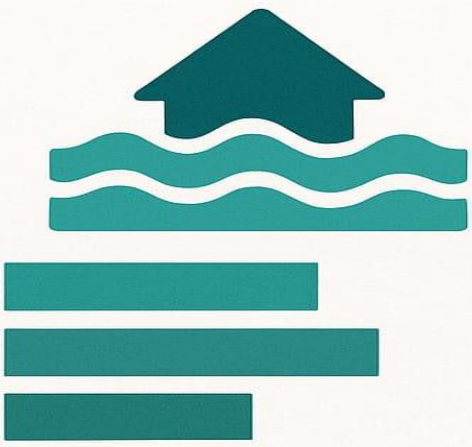
```
    Print("Starting Disaster Monitoring System...\n")
    For I in range(5):  # Simulate 5 data checks
        Weather_data = get_weather_data()
        Print(f"Weather Data: {weather_data}")
        Alerts = check_disaster_conditions(weather_data)
        If alerts:
            For alert in alerts:
                Print(">>>", alert)
        Else:
            Print("No alerts. All conditions are normal.")
        Print("-" * 40)
        Time.sleep(2)  # Pause for readability

If __name__ == "__main__":
    Monitor_disasters()
```

NATURAL DISASTER
PERFORMANCE METRICS

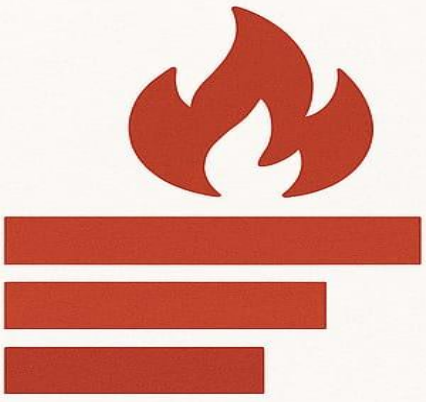
EARTHQUAKES

FLOODS



HURRICANES

WILDFIRES



NATURAL DISASTER

PERFORMANCE METRICS

Response Time

5,2 hrs

Recovery Rate

87%

Evacuation Cost

$1,3M