```python
# 1. Store odd and even numbers in a dictionary
def separate_numbers(lst):
    result = {'odd': [], 'even': []}
    for num in lst:
        if num % 2 == 0:
            result['even'].append(num)
        else:
            result['odd'].append(num)
    return result
print(separate_numbers([2, 9, 7, 8]))
```

```
{'odd': [9, 7], 'even': [2, 8]}
```

```python
# 2. Check if a string is a palindrome using recursion
def is_palindrome(s):
    if len(s) <= 1:
        return True
    if s[0] != s[-1]:
        return False
    return is_palindrome(s[1:-1])
print(is_palindrome("madam"))
```

```
True
```

```python
# 3. Return a random movie from a specific genre
import random
def get_movie(genre):
    mydict = {
        'Action': ['A', 'B', 'C'],
        'Anime': ['D', 'E', 'F'],
        'Horror': ['G', 'H', 'I']
    }
    return random.choice(mydict[genre])
print(get_movie('Anime'))
```

```
E
```

```python
# 4. Find the coupon with the highest cashback value
def best_coupon(lst):
    return max(lst, key=lambda x: int(x[-3:]))
coupons = ['christmas200', 'holiday120', 'Sunday100']
print(best_coupon(coupons))
```

```
christmas200
```

```python
# 5. Select first 3 students with a valid Gmail address
def select_students(emails):
    valid_students = []
    for email in emails:
        if email.endswith("@gmail.com"):
            valid_students.append(email)
        if len(valid_students) == 3:
            break
    return valid_students
```

```
data = ["sree@gmail.com", "user1@yahoo.com", "anu@gmail.com", "ram@gmail.com",
print(select_students(data))
```

```
['sree@gmail.com', 'anu@gmail.com', 'ram@gmail.com']
```

```
# 6. Return the product of all numbers in a list
def multiply_list(lst):
    res = 1
    for x in lst:
        res *= x
    return res
print(multiply_list([1, 2, 3, 4]))
```

```
24
```

```
# 7. Check if product is in 6-month warranty until March 25
def check_warranty(purchase_month, purchase_year):
    # Target date: March (3) 2026 (current year)
    # Using simple month difference logic
    current_m, current_y = 3, 2026
    total_months = (current_y * 12 + current_m) - (purchase_year * 12 + purcha
    if total_months <= 6:
        return "In Warranty"
    else:
        return "Expired"
print(check_warranty(10, 2025))
```

```
In Warranty
```

```
# 8. Print permutations of 'a', 'b', 'c' as a list
from itertools import permutations
def list_perms():
    res = [''.join(p) for p in permutations(['a', 'b', 'c'])]
    print(res)
list_perms()
```

```
['abc', 'acb', 'bac', 'bca', 'cab', 'cba']
```

```
# 9. Avoid product if it has both wheat and milk
def avoid_product(ingredients):
    if "wheat" in ingredients and "milk" in ingredients:
        return "Avoid this product"
    else:
        return "Safe to use"
print(avoid_product(["wheat", "sugar", "milk"]))
```

```
Avoid this product
```

```
# 10. Calculate simple interest
def simple_interest(p, t, r):
    # Formula: (Principal * Time * Rate) / 100
```

```
    return (p * t * r) / 100
print(simple_interest(1000, 2, 5))
```

```
100.0
```