** Gargi sharma 12403355 ca-1 machine learning **

1

```
grades = {'Alice': 'A', 'Bob': 'B', 'Charlie': 'A', 'David': 'C',
'Eve': 'B'}
for student, grade in grades.items():
    reversed_grades[grade].append(student)
print(dict(reversed_grades))
```

```
{'A': ['Alice', 'Charlie', 'Alice', 'Charlie', 'Alice', 'Charlie'],
'B': ['Bob', 'Eve', 'Bob', 'Eve', 'Bob', 'Eve'], 'C': ['David',
'David', 'David']}
```

```
grades = {'Alice': 'A', 'Bob': 'B', 'Charlie': 'A', 'David': 'C',
'Eve': 'B'}
reversed_grades = {grade: [student for student in
        grades if grades[student] == grade] for grade in
set(grades.values())}

print(reversed_grades)
```

```
{'C': ['David'], 'B': ['Bob', 'Eve'], 'A': ['Alice', 'Charlie']}
```

2

```
squares = {num: num**2 for num in range(1, 21) if num % 2 == 0}
print(squares)
```

```
{2: 4, 4: 16, 6: 36, 8: 64, 10: 100, 12: 144, 14: 196, 16: 256, 18:
324, 20: 400}
```

3

```
is_palindrome = lambda s: s == s[::-1]
print(is_palindrome("gargi"))
print(is_palindrome("oho"))
```

```
False
True
```

4

```
even_or_odd = lambda num: "Even" if num % 2 == 0 else "Odd"
print(even_or_odd(10))
print(even_or_odd(7))
```

```
Even
Odd
```

5

```
longer_string = lambda s1, s2: s1 if len(s1)>len(s2) else (s2 if
len(s2) > len(s1) else "Equal")
print(longer_string("Gargi", "mahi"))
print(longer_string("c", "java"))
```

```
Gargi
java
```

```
expenses = [1200, 300, 150, 500, 750, 200]
budget = 3000
total_spent = 0
for expense in expenses:
    total_spent += expense

if total_spent > budget:
    print(f"Over budget! You spent ${total_spent}, which is $
{total_spent - budget} over the budget.")
else:
    print(f"Within budget! You spent ${total_spent}, which is ${budget
- total_spent} under the budget.")
```

```
Over budget! You spent $3100, which is $100 over the budget.
```