Task:-9.1 Date:-24/9/25

Implement exceptions and exceptional handling in Python.

Aim:- You are developing a python program that process a list of students grades the program is designed to allow the user to select a grade by specifying an index number. However, you need to ensure that the program handles cases where the user inputs an index that is out of range i.e, index that does not exist in the list.

Aim:- To implement exception and exceptional handling in python

Algorithm

1. Start the program
2. Initializes a list of grades (e.g; [85, 90, 78, 92, 88])
3. Prompts the user to enter the index of the grade they with to view.
4. Attempts to displays the grade at the specified index.
5. If the index is out of range. catches the index error and prints an error message "invalid index. Please enter a valid index."

output:

Grades List: [85, 90, 78, 92, 88]

Enter the index of the grade you want to view: 10

Invalid index. Please enter a valid index.

Program

```
# initialize the list of grades.
    grade = [85, 90, 78, 92, 88]
# display the grades list.
    print ("Grades list:", grades)
# Prompt the use to entee the index of the
        grade they want to view.
try:
    index = int (input ("Entee the index of the
    grade you want to view:"))
    # Attempt to display the grade at the
        grade you want to view:"))
                specified index.
    Print (f"The grade at index {index} is:
                {grades [index]}")

except Index error:
    # Handle the case where the index
                is out of range
    print ("Invalid index. Please the
                entee a valid index:")
except value error:
```

Handle the case where the input is not an integer.

print ("Invalid input: please enter a numerical index.")

Result:- Thus the python program is implement the exceptions and exceptional handling successfully executed.

Task 9:2.

You are developing a python Calculation Program that performs basic arithmetic operations one of the key functionalities divide two numbers entered by the user. However, dividing by zero is not allowed and would cause the program to crash if not handled properly.

Algorithm

1. Start the program
2. Prompts the user to enter two numbers: a numerator and a denominator:
3. Attempts to divides the numerator by the denominator.
4. If the denominator is zero, Catches the ZeroDivisionError and displays an error message: "Error: Division by zero is not allowed

output

Enter the numerator :10

Enter the denominator :0

Error!

Error : Division by zero not allowed

Program

```
# function to perform division
def divide_numbers():
try:
    # prompt the user to enter the numerator.
    numerator = float(input("Enter the
                numerator :"))
    # prompt the user to enter the
                denominator:
    denominator = float(input("Enter the
                denominator :"))
    # Attempt to perform division
    result = numerator / denominator
    Print ("Result : {result}")
    Except Zero Division by zero error.
    Print ("Error : Division by zero is not.
                allowed.")
    Except value Error:
    # Handle invalid input that is not
        a number
```

print ("Error : please enter valid numbers.")

call the function to execute the division operation.!

divide_numbers.

Result: Thus the python programs numerator and denominator are successfully executed.

Task 9.3

You are building a Python application to determine if a person is eligible to vote based on their age. According to the rules, only individuals who are 18 years or older are allowed to vote. To enforce this rule, you decide to create a custom exception called InvalidAgeException, which will be raised whenever an age below 18 is entered.

Algorithm:

1) Define the CustomException
2. Prompt the user for input
3. Check if the age is below 18
4. Raise an exception if the condition is met.
5. Handle the exception with a custom error message.

output:-

Enter a number :5

Exception occured : Invalid age

Program

```
# define Python user - defined exception
class InvalidAge exception (Exception):
    "Raised when the input value is
        less than 18"
pass
# You aced to guess this number
number = 18
try:
    Input num = int(input("Enter a number:"))
    if input_num < number:
        raise InvalidAge exception
    else:
        print("Eligible to vote")
except InvalidAge Exception:
    print("Exception occured : Invalid
        Age")
```

EX NO.	5
PERFORMANCE (5)	5
RESULT AND ANALYSIS (3)	3
VIVA VOCE (3)	3
RECORD (4)	4
TOTAL (15)	15
SIGN WITH DATE	

Result: Thus, the program for implement exception and Exceptional handling is executed and verified successfully