Task 9: Implement Exceptions and Exceptional handling in python.

Aim:

To implement Exceptions and exceptional handling in python.

9.1. 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 that wish to view. Attempts to display the grade at the specified index.
4. If the index is out of range, catches the index Error and Prints, an error message, "Invalid index. Please enter a valid index".

Program:

```
grades = [85, 90, 78, 92, 88]
Print("Grades List:", grades)
try:
    index = int(input("Enter the index of the grade you want to view:"))
    Print(f"The grade at index{index} is:{grades[index]}")
exept IndexError:
    Print("Invalid index.Please enter a valid index.")
exept ValueError:
  Print("Invalid input. please enter a ~~valid~~ numerical index.")
```

9.2. Algorithm:

1. Start.
2. Prompts the user to enter two numbers: a numerator and a denominator
3. Attempts to divide 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:

```
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:

```
def divide_numbers():
    try:
        numerator= float(input("Enter the numerator:"))
        denominator= float(input("Enter the denominator:"))
        result= numerator/denominator
        Print(f"Result:{result}")
    except ZeroDivisionError:
        Print("Error: Division by zero is not allowed.")
    except valueError:
        Print("Error: please enter valid numbers.")
divide_numbers()
```

Q3. Algorithm:

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

Program:

```
#define Python user-defined exceptions
Class InvalidAgeException(Exception):
    "Raised when the Input value is less than 18"
    Pass
#You need to guess this number
number= 18
try:
    input_num= int(input("Enter a number:"))
    if input_num<number:
```

Output:

```
Enter the numerator: 10
Enter the denominator: 0
ERROR!
Error: Division by zero is not allowed.
```

✓

Output:

```
Enter a number: 15
Exception Occured : Invalid Age
```

```
        raise InvalidAgeException
    else:
        Print("Eligible to vote:")
except InvalidAgeException:
    Print("Exception Occured: Invalid Age")
```

VELTECH	
EX No.	9
PERFORMANCE (5)	5
RESULT AND ANALYSIS (5)	5
VIVA VOCE (5)	5
RECORD (5)	5
TOTAL (20)	20
SIGN WITH DATE	8/7/9.

Result:

Thus the Program for implement Exceptions and Exceptional handling is executed and verify successfully.