

Task 9:- Implement Exceptions and Exceptional handling.

Aim:- To implement Exceptions 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 wish to view.
4. Attempts to display the grade at the specified index.
5. If the index is out of range, catches the IndexError and prints an error message, "Invalid index please enter a valid index."

Program:-

```
# Initialize the list of grades
```

```
grades = [85, 90, 78, 92, 88]
```

```
# Display the grades list
```

```
print("Grades list:", grades)
```

```
# Prompt the user to enter the index of the
```

```
grade they want to view.
```

```
try:
```

```
    index = int(input("Enter the index of the grade they  
want to view:"))
```

```
# Attempt to display the grade at the specified index
```

```
    print(f"The grade at index {index} is : {grades[index]}")
```

```
except IndexError:
```

```
# Handle the case where the index is out of range
```

```
    print("Invalid index. Please enter a valid index!")
```

Output :-

Grades

Entered the index of the words prob
text book

view: 10

view: 10
Invalid index. Please enter a valid index.

Invalid index. Please enter an integer between 0 and 9.
:(4x9) 8992 in 99b

fixit noot98

(cont'd) 1997P 9ab

(front 2) 4996P

(Rainbow) 1998P

except ValueError:

Handle the case where the input is not an integer point ("Invalid input. Please enter a numerical index!")

~~Problem 9.2 :- You are developing a Python calculator program that performs basic arithmetic operations. One of key functionalities is to divide two numbers. If the denominator is zero, the program should 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 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!"

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(f"Result : {result}")

except ValueError:

Handle division by zero error

print("Division by zero is not allowed!")

Output

Enter the numerator: 10
Enter the denominator: 0
ERROR!
Exception: Division by zero is not allowed;
E8000: Division by zero is not allowed;

except ValueError:

Handle invalid input that is not a number

print("Error: Please enter valid numbers!")

Call the function to execute the division operation
divide_numbers()

Problem 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 an age below 18 is entered.

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 condition is met.
5. Handle the exception with a 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:

raise InvalidAgeException

else:

Output is for 29 March 2019 till 09:00 AM
(11:269dmon 810 69499 920919:60663")

Number of visitors till 09:00 AM is 110

Output :-

Entered a number: 15

0269dmon - 36%

Entered a number: invalid Age

Exception occurred: Invalid Age

Age of visitors till 09:00 AM is 36%

Number of visitors till 09:00 AM is 36%

Age of visitors till 09:00 AM is 36%

Number of visitors till 09:00 AM is 36%

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Number of visitors till 09:00 AM is 36%

Age of visitors till 09:00 AM is 36%

Point ("Eligible to vote")

except invalid age exception:

Point ("Exception occurred: invalid age")

VEL TECH	
EX No.	9
PERFORMANCE (5)	5
RESULT AND ANALYSIS (5)	5
VIVA VOCE (5)	5
RECORD (5)	5
TOTAL (20)	20
SIGN WITH DATE	15/10

Result:- Thus the program for implement Exceptions and Exceptional handling is executed and verified successfully.