COMPILER CONSTRUCTION

LANGUAGE SPECIFICATION

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TABLE OF CONTENTS

INTRODUCTION :

Our language is a python based language. Below, we will be discussing the structure, syntax and data structures of our language. Our language is a python based language. Below, we will be discussing the structure, syntax and data structures of our language.

DATA TYPES :

1- **int**   2- **string**
3- **char**   4- **float**
5- **bool**

KEYWORDS :

1- **return**   2- **true**
3- **false**   4- **print**
5- **none**   6- **def**
7- **break**   8- **continue**
9- **global**   10- **import**
11- **from**   12- **in**
13- **while**   14- **for**
15- **with**   15- **class**
16- **if**   17- **else**
18- **elif**   19- **as**
20- **try**   21- **except**
22- **raise**   23- **finally**

CONDITIONAL STATEMENTS :

Our language contains if statements. The keyword
used are **if , elif and else.**

LOOPS :

Our language also consists of loops. Following are the
types of loops;

1- **for loop**

Keyword used in for loop are **for , in.**

2- **while loop**

Keyword used in this loop is **while.**

DATA STRUCTURES :

Our language also consists of different kind of
data structures;

1- **List** (1D , 2D or Multi-D)

It can contain any kind of data type. It is denoted with [ ].

2- **Dictionaries**

It has a key and value pair. It is denoted with { }.

OBJECT ORIENTED PROGRAMMING :

Our language support all the object oriented concepts.
Following are some major OOP concepts;

1- Inheritance
2- Polymorphism
3- Abstraction
4- Encapsulation

Exception Handling :
In our language, keyword used for exception handling
are **try , except , raise and finally.**

OPERATORS :
There are many kind of operators in our language.

Arithematic Operator :
It consists of operators like **- , + , * , / , % .**

Relational Operator :
It consists of operators like **> , < , <= , >= , == , != .**

Increment / Decrement Operator :
It consists of operators like **++ , -- .**

Logical Operator :

It consists of keyword like **and , or , not ,** etc.

Assignment Operator :

It consists of keyword like **= , += , -= , *= , /= , %=.**

PUNCTUATORS :

In our language, there is **no use of semi-colon (;)** .
However, there is an additional concept of **indentation**.
The dot (.) is used for calling methods using objects.
{} is used in dictionary while [] is used in lists.

CASE SENSITIVITY :

Our language is **not** case sensitive.

VARIABLE NAMING :

In our language, you can name according to some
rules. You can name variable what ever you want
but your variable **cannot start with any digit and
special characters except underscore (_)**.

!x------------------------x------------------------x!