Declarations:-

Declarations provide information about the name and type of data objects needed during program execution.

Two ways of declaration

→ implicit declaration
→ explicit declaration

Implicit Declaration or default declaration:-

They are those declaration which is done by compiler when no explicit declaration or user defined declaration is mentioned.

Eg:-
```
$abc = 'a string';
$abc = 7;
```

In 'Perl' Compiler implicitly understand that

$abc= 'a string' is a string variable

and

$abc= 7; is an integer variable.

Explicit declaration of data object :-

```
Float A,B;
```

It is an example of 'Float A,B;' of C language. In explicit we or user explicitly defined the variable type. In this example it specifies that it is of Float type of variable which has name A & B;

A declaration basically serves to indicate the desired life time of data objects.

Declarations of Operations :-

→ Compiler needs the signature or a prototype of a subprogram or function so it can determine the type of argument is being used and what will be the result type

* Before the calling of subprogram, Translator need to know all these informations.

Eg in C language


```
Float Sub (intx, floaty)
```

It declares Sub to have the signature

Sub : int x float → float

Purpose of Declarations :-

1. Choice of Storage Representation :-

As translator determine the best storage represent-ation of data types that why it needs to know primarily the information of data type and attribute of a data object

2. Storage Management :-

It makes to us to use best Storage Management for dataobject by providing its information. & these information as tells the life time of a dataobject.

For Example :-

In C Language we have many options for declaration for elementary data type

(i) Simple declaration : Like float A,B;

It tells life time is only at the end of execution

*As **lifetime of every data object can be maximum to**

end of execution time*

but Simple declaration tells the Single block of memory will be allocated.

(ii) Run time Declaration :-

C language and many more language provide us the feature of Dynamic Memory Allocation by keywords **malloc** and **calloc**.

So in this special blocks of memory is allocated in memory and their life time is also different.

3.) Polymorphic Operations :-

In most language, Some special Symbol like + to designate any one of the several different operation which depends on type of data or argument is provided.

In this operation has same name like as we discussed + So in this case operation Symbol is said to be **Overloaded** because it does not designate one specific operation.

Ada allows programmer to overload Sub programs.

ML Expands this concept with full polymorphism where function has one name but variety of implementation depending on the types of arguments.

4.) Type checking :-

Declaration is basically for Static type Checking rather than dynamic.