



# Samrat Ashok Technological Institute

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Q-1 What do you understand by software in Computer science and how can you categorize the software?

Ans-1 In Computer science, software refers to a collection of program, data and instruction that enable a computer system to perform specific tasks or functions. It encompasses all the intangible - application, operating, operating system, devices drivers utility and more software is a crucial component that allows users to interact with and utilize the capabilities of hardware.

Software can be categorized into several types based on different criteria:

1) System software → System software provides a platform for running application and managers computer hardware resources. It includes operating system (eg - windows, macOS, Linux), device drivers, firmware and utility programs (eg - disk utilities, system diagnostic tools).

2) Application software - Application software refers to programs designed to perform specific tasks or provide functionality.

to where it includes a wide range of software such as word processors, spreadsheets, graphics editor, web browsers, media players, database management system and more.

Q-2 Write five features of python that make it user friendly?

Ans-2 1) Easy-to-read syntax. python has a simple and readable syntax, making it accessible for beginners and experienced programmers.

2) Clear and Expressive Code :- python emphasises clean and concise code.

3) Extensive standard library - python comes with a vast collection of modules and function for various task.

4) Dynamic typing and Automatic memory management - python automatically determines variable type and handles memory management.

5) Large and Supportive Community - python has a large community to support the different streams and fields because python has





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very fast programming language

Q3: List the various numericals data type in python with example?

Ans = 3 1) Integer (int): it represents whole number, positive or negative without any decimal point.

ex -  $x = 10$

$y = -5$

2) Float: It represents real number with a decimal point

ex -  $a = 3.14$

$b = -0.5$

3) Complex: It represents number in the form of  $a + bj$ , where  $a$  and  $b$  are floats and  $j$  represents the imaginary unit.

ex -  $z = 2 + 3j$

4) Boolean: it represents the truth values True and False, which are used in logical operations.

ex -  $is\_true = True$

$is\_false = False$

5) Decimal : It represent decimal numbers with a fixed precision.

ex - from decimal import Decimal  
d = Decimal ('3.14159')

Q4 - Write the output for the following expression is evaluated using a python interpreter.

1) print (19%6)      2) if 12+5\*9 = 153:

3) print ("ITC" + 101)      4) num = 514  
    print ("true")  
    print (num)  
    else:  
    print ("false")

1) print (18%6)  
    output = 0

2) If 12+5\*9 = 153  
    Output: No output (there is no print statement)

3) print ("ITC" + 101)  
    output Error... type error



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```
4) Num : 5/4
Print ("true")
Print (num)
else
Print ("false")
```

Output : True  
True

Q 5 +) Let num 1 and 2 be true non-empty list write a python program that will

append the last element of num 2 to the end of num 1

2) List is mutable and tuple is immutable. Prove the statement with example.

Ans - 5) i) To append the last element of 'num 2' to the end of 'num 1' in python, we can use the 'append()' method.

ex - num 1.append (num 2 [-1])

ii) List are mutable in python.

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Example to demonstrate mutability of lists:-

```
My-list = [1, 2, 3]
```

```
My-list[0] = 10
```

```
print(My-list)
```

O/P - [10, 2, 3]

tuples are immutable:-

Example to demonstrate immutability of tuples:-

```
My-tuple = (1, 2, 3)
```

```
My-tuple[0] = 10
```

O/P -> Type Error