**G. H. RAISONI COLLEGE OF ENGG., NAGPUR**

**(An Autonomous Institute)**

**Department of Computer Science & Engg.**



**Date: 03-08-2021**

**Practical Subject: Skill Development-2 [BCSP318]**

**Session: 2021-22**

**Student Details:**

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| **Semester** | 9th |
| **Section** | A |
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**Practical Details: Practical Number-2;**

| Practical Aim | Implementation of Control Structures in Python  if , else  while loop  for loop |
| --- | --- |
| Theory & Syntax | **Programs are rarely linear**  **Most programs do not work by executing a simple sequential set of statements. The code is constructed so that decisions and different paths through the program can be taken based on changes in variable values.**  **To make this possible all programming language have a set of control structures which allow this to happen.**  **In this episode we are going to look at how we can create loops and branches in our Python code. Specifically we will look at three control structures, namely:**  **if..else..**  **while…**  **for …**  **The if statement and variants**  **The simple if statement allows the program to branch based on the evaluation of an expression**  **The basic format of the if statement is:**  **# if ... elif ... else ... endIf**  **a = 5**  **b = 4**  **print("a = ", a, "and b = ", b)**  **if a > b :**  **print(a, " is greater than ", b)**  **elif a == b :**  **print(a, " equals ", b)**  **else :**  **print(a, " is less than ", b)**  **The while loop**  **The while loop is used to repeatedly execute lines of code until some condition becomes False.**  **For the loop to terminate, there has to be something in the code which will potentially change the condition.**  **While Syntax:**  **while(condition):**  **statements**  **Increament operation(optional)**  **while will execute in a loop as long as condition is True.**  **The for loop**  **The for loop, like the while loop repeatedly executes a set of statements. The difference is that in the for loop we know in at the outset how often the statements in the loop will be executed. We don’t have to rely on a variable being changed within the looping statements.**  **The basic format of the for statement is:**  **for variable\_name in some\_sequence :**  **statements** |
| Program | even=[]  odd=[]  size=int( input ("Enter the total amount of numbers to separate by parity and add in lists"))  while(size>0):  n=int(input("Num "+str(size)+"th = "))  if (n%2==0):  even.append(n)  else:  odd.append(n)  size-=1  print("even numbers are :")  for i in even:  print(i)  print("odd numbers are :")  for i in odd:  print(i) |
| Output |  |
| Conclusion | Learned the concept of Control Structures ie if then else , while loop and for loop in Python. |