

LAB 12 (CONDITIONAL STRUCTURE)

By:

UMER FAROOQ (FA22-BCT-036)



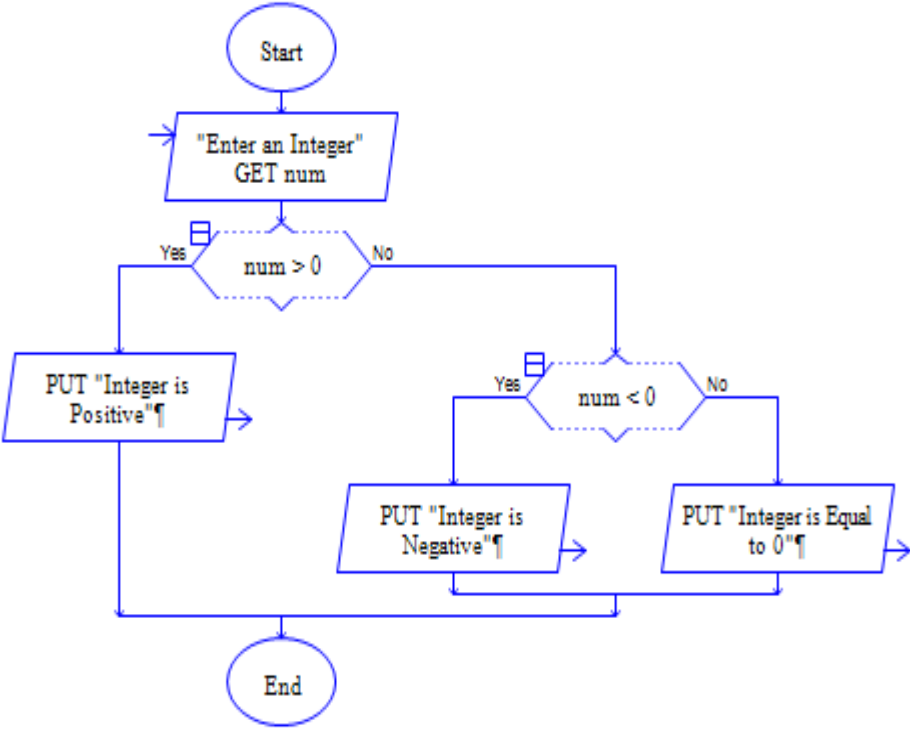
Submitted to: SIR KHURRUM IQBAL

Subject: INTRODUCTION TO COMMUNICATION TECHNOLOGY

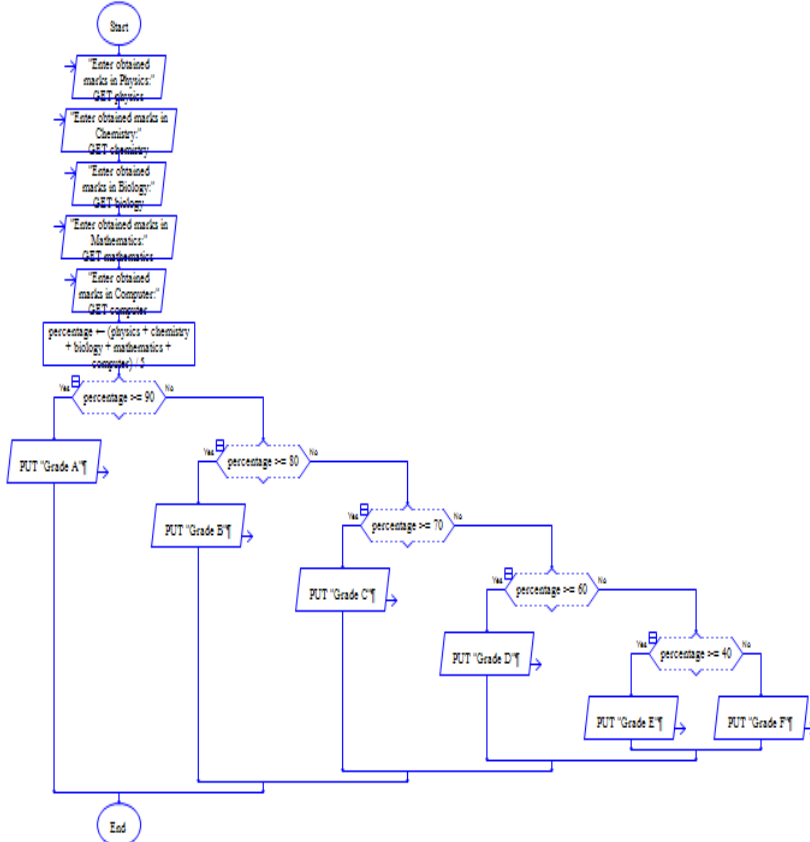
Date: 13/12/2022

**DEPARTMENT OF COMPUTER SCIENCE
COMSATS UNIVERSITY
ISLAMABAD**

Lab task 1 :

	ALGORITHM	FLOWCHART
<ul style="list-style-type: none"> Enter the number is "number" If the number is bigger than zero "The number is positive" If the number is less than zero "The number is negative" If the number is neither of the both then the number is zero 	 <pre> graph TD Start([Start]) --> Input[/"Enter an Integer" GET num/] Input --> Cond1{num > 0} Cond1 -- Yes --> PutPos[/PUT "Integer is Positive"/] Cond1 -- No --> Cond2{num < 0} Cond2 -- Yes --> PutNeg[/PUT "Integer is Negative"/] Cond2 -- No --> PutZero[/PUT "Integer is Equal to 0"/] PutPos --> End([End]) PutNeg --> End PutZero --> End </pre>	<p>If number = number Then If number > 0 Number is positive Then If number < 0 Number is negative Else Print "Number is zero"</p>

Lab task 2 :

ALGORITHM	FLOWCHART	PSEUDOCODE
<ul style="list-style-type: none"> Enter the obtained marks of the subjects Physics, Chemistry, Math, Computer and bio Then make the percentage by dividing by total number and multiplying by hundred then make if else statement to describe the grade obtained by the student in the exams 	 <pre> graph TD Start([Start]) --> GetPhysics[Enter obtained marks in Physics
GET-physics] GetPhysics --> GetChemistry[Enter obtained marks in Chemistry
GET-chemistry] GetChemistry --> GetBiology[Enter obtained marks in Biology
GET-biology] GetBiology --> GetMathematics[Enter obtained marks in Mathematics
GET-mathematics] GetMathematics --> GetComputer[Enter obtained marks in Computer
GET-computer] GetComputer --> CalculatePercentage[percentage = (physics + chemistry + biology + mathematics + computer) / 5] CalculatePercentage --> Decision90{percentage >= 90} Decision90 -- Yes --> PrintA[PUT "Grade A"] Decision90 -- No --> Decision80{percentage >= 80} Decision80 -- Yes --> PrintB[PUT "Grade B"] Decision80 -- No --> Decision70{percentage >= 70} Decision70 -- Yes --> PrintC[PUT "Grade C"] Decision70 -- No --> Decision60{percentage >= 60} Decision60 -- Yes --> PrintD[PUT "Grade D"] Decision60 -- No --> Decision40{percentage >= 40} Decision40 -- Yes --> PrintE[PUT "Grade E"] Decision40 -- No --> PrintF[PUT "Grade F"] PrintA --> End([End]) PrintB --> End PrintC --> End PrintD --> End PrintE --> End PrintF --> End </pre>	<p>Marks=Input=</p> <p>Obtained Marks of subjects</p> <p>Percentage=marks*100/total marks</p> <p>If percentage >=90 print"The grade is A"</p> <p>If percentage >=80 Print"The grade is B"</p> <p>If percentage >=70 Print"The grade is C"</p> <p>If percentage >=60 Print"The grade is D"</p> <p>If percentage >=40 Print"The grade is E"</p> <p>Else Print"The grade is F"</p>

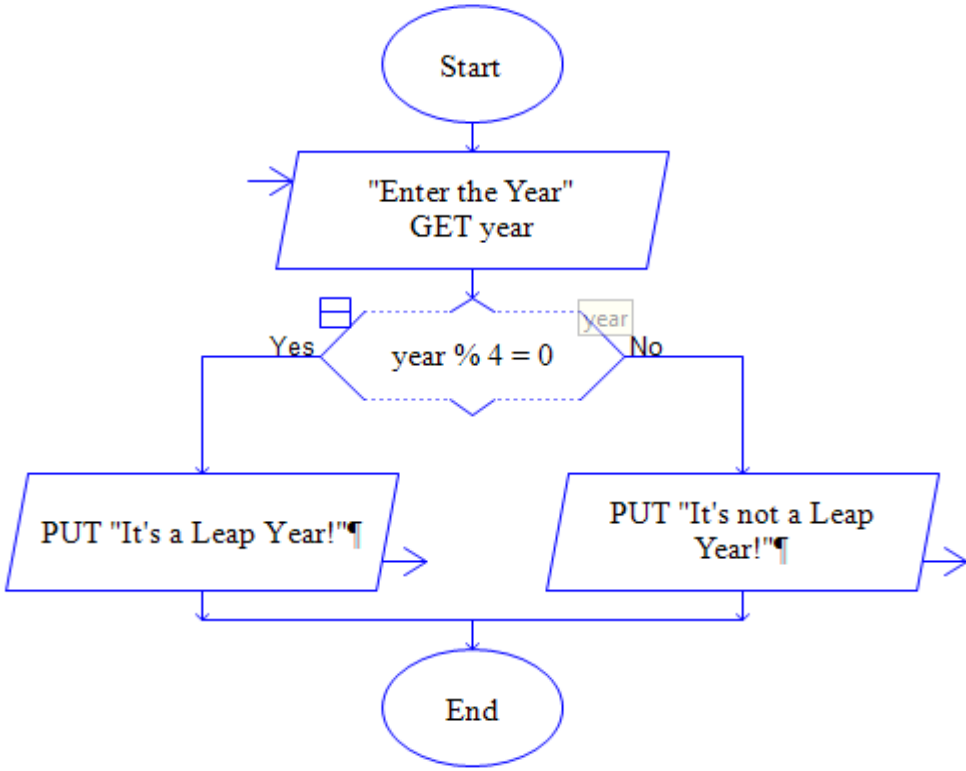
Lab task 3 :

ALGORITHM	FLOWCHART	PSEUDOCODE
<ul style="list-style-type: none"> Enter the sides of the triangle If The side 1 is equal to side 2 , side 2 is equal to side 3 and side 1 is equal to side 3 then “it is equilateral triangle” If The side 1 is equal to side 2 or side 2 is equal to side 3 or side 1 is equal to side 3 then “it is a isosceles triangle” Else The triangle is scalene 	<pre> graph TD Start([Start]) --> Input1[/"Enter Length of Side 1 of the Triangle" GET s1/] Input1 --> Input2[/"Enter Length of Side 2 of the Triangle" GET s2/] Input2 --> Input3[/"Enter Length of Side 3 of the Triangle" GET s3/] Input3 --> Decision1{s1 = s2 && s2 = s3 && s3 = s1} Decision1 -- Yes --> Output1[PUT "Triangle is Equilateral"] Decision1 -- No --> Decision2{s1 = s2 s2 = s3 s3 = s1} Decision2 -- Yes --> Output2[PUT "Triangle is Isosceles"] Decision2 -- No --> Output3[PUT "Triangle is Scalene"] Output1 --> End([End]) Output2 --> End Output3 --> End </pre>	<p>Side1=side1 of the triangle Side2=side2 of the triangle Side3=side3 of the triangle</p> <p>If side1=side2=side3: print“Triangle is equilateral”</p> <p>Elif side1=side2 or side2=side3 or side3=side1: print“Triangle is isosceles”</p> <p>Else print“Triangle is scalene”</p>

Lab task 4 :

ALGORITHM	FLOWCHART	PSEUDOCODE
<ul style="list-style-type: none"> Email= abc@gamil.com Password=abcd Input the email address and the password. If The email and input email is equal and password is also equal to the input password "you have logged in" If both email are correct but password are incorrect "The password is incorrect" If both the passwords are correct but email is incorrect "The email is incorrect" Else both the password and email is incorrect 	<pre> graph TD Start([Start]) --> InitEmail[Email ← "abc@gmail.com"] InitEmail --> InitPwd[Pwd ← "abc"] InitPwd --> GetEmail[/Enter your Email GET emailInp/] GetEmail --> GetPwd[/Enter your Password GET pwd/] GetPwd --> Dec1{email = emailInp && pwd = pwdInp} Dec1 -- Yes --> PutLogin[PUT "User is logged in"] PutLogin --> End([End]) Dec1 -- No --> Dec2{email = emailInp} Dec2 -- Yes --> PutPwdErr[PUT "The Entered Password is incorrect"] PutPwdErr --> End Dec2 -- No --> Dec3{pwd = pwdInp} Dec3 -- Yes --> PutEmailErr[PUT "The Entered Email is incorrect"] PutEmailErr --> End Dec3 -- No --> PutBothErr[PUT "Incorrect Email and Password"] PutBothErr --> End </pre>	<pre> Email=" email" Password=" password" Email1=input= Email address Password1=input= Password If email=email1 and password=password1: print"You have logged in" Elif email=email1 and password!=password1: print"The password is incorrect" Elif email !=email1 and password=password: print"The email is incorrect" Else : print"Email and password both are incorrect" </pre>

Lab task 5 :

ALGORITHM	FLOWCHART	PSEUDOCODE
<ul style="list-style-type: none"> • Enter the year • If the modulus of the year by 4 is equal to zero then "It is a leap year" • Else It is not a leap year 	 <pre> graph TD Start([Start]) --> Input[/"Enter the Year" GET year/] Input --> Decision{year % 4 = 0} Decision -- Yes --> Output1[/PUT "It's a Leap Year!"\] Decision -- No --> Output2[/PUT "It's not a Leap Year!"\] Output1 --> End([End]) Output2 --> End </pre> <p>The flowchart starts with an oval labeled 'Start'. An arrow points down to a parallelogram labeled '"Enter the Year" GET year'. From there, an arrow points down to a decision diamond labeled 'year % 4 = 0'. A dashed line labeled 'year' enters the diamond from the top. Two arrows exit the diamond: one labeled 'Yes' pointing left to a parallelogram labeled 'PUT "It's a Leap Year!"', and one labeled 'No' pointing right to a parallelogram labeled 'PUT "It's not a Leap Year!"'. Both output parallelograms have arrows pointing down to a final oval labeled 'End'.</p>	<p>Year=input(Enter the year)</p> <p>If $\text{year} \% 4 = 0$:</p> <p>print "It is a leap year"</p> <p>Else :</p> <p>print "It is not the leap year"</p>

Python codes:

➤ Lab task 1:

```
1  num=eval(input("Enter the number:\n"))
2  if num > 0:
3      print("The input number is even")
4  elif num < 0:
5      print("The input number is odd")
6  else:
7      print("The input number is zero")
```

➤ Lab task 2:

```
1  phy=eval(input("Enter the obtained marks of phy:\n"))
2  chem=eval(input("Enter the obtained marks of chem:\n"))
3  math=eval(input("Enter the obtained marks of math:\n"))
4  bio=eval(input("Enter the obtained marks of bio:\n"))
5  computer=eval(input("Enter the obtained marks of computer:\n"))
6  total_marks=500
7  total=phy+chem+math+bio+computer
8  per=(total*100)/total_marks
9  if per>=90:
10     print("You have sussessfully obtained A grade")
11 elif per>=80:
12     print("You have sussessfully obtained B grade")
13 elif per>=70:
14     print("You have sussessfully obtained C grade")
15 elif per>=60:
16     print("You have sussessfully obtained D grade")
17 elif per>=40:
18     print("You have sussessfully obtained E grade")
19 else:
20     print("You have sussessfully obtained F grade")
```


➤ Lab task 3:

```
1 side1=eval(input("Enter the first side of the triangle:\n"))
2 side2=eval(input("Enter the second side of the triangle:\n"))
3 side3=eval(input("Enter the third side of the triangle:\n"))
4 if side1 == side2 == side3:
5     print("The triangle is eqilateral triangle")
6 elif side1 == side2 or side2 == side3 or side3 == side1:
7     print("The triangle is isosceles triangle")
8 else:
9     print("The triangle is scalene triangle")
10
```

➤ Lab task 4:

```
1  email="abc@gmail.com"
2  password="abcd"
3  email1=input("Enter the email address:\n")
4  password1=input("Enter the password:\n")
5  if email == email1 and password == password1:
6      print("You are logged in")
7  elif email == email1 and password != password1:
8      print("The password is incorrect")
9  elif email != email1 and password == password1:
10     print("The email s incorrect")
11  else :
12     print("Email and password both are incorrect")
13
```

➤ Lab task 5:

```
1  year=int(input("Enter the year:\n"))
2  if year%4 == 0:
3      print("It is a leap year")
4  else:
5      print("it is not a leap year")
```