Q1 Write a program that takes an integer input from the user and checks whether the number is odd or even.

```
num = int(input("Give a number : "))
if(num % 2 == 0):
 print(f"{num} is even")
else:
 print(f"{num} is odd")
```

Q2 Write a program that takes three numbers as input and prints the largest of the three.

```
a = int(input("Give a number : "))

b = int(input("Give a number : "))

c = int(input("Give a number : "))



if(a > b and a > c):

 print(f"{a} is biggest")

elif(b > a and b > c):

 print(f"{b} is biggest")

else:

 print(f"{c} is biggest")
```

Q3 Write a program to check if a given year is a leap year. A leap year is divisible by 4 but not by 100 unless it is also divisible by 400.

```
y = int(input("Enter any year: "))

if (y % 4 == 0):

   if (y % 100 == 0):

       if (y % 400 == 0):

           print(f"{y} is a leap year")

       else:

           print(f"{y} is not a leap year")

   else:
```

```
      print(f"{y} is a leap year")

else:

   print(f"{y} is not a leap year")
```

Q4 Write a program that takes a percentage (integer) as input and prints the corresponding grade based on the following criteria:
>= 90: Grade A
>= 80: Grade B
>= 70: Grade C
>= 60: Grade D
< 60: Grade F

```
p = int(input("Enter your percentage : "))
if(p >= 90):
 print("Grade A")
elif(p >= 80):
 print("Grade B")
elif(p >= 70):
 print("Grade C")
elif(p >= 60):
 print("Grade D")
else:
 print("Grade F")
```

Q5 Write a program that checks if a given letter is a vowel (a, e, i, o, u) or a consonant.

```
ch = input("Enter any character : ")

if(ch == 'a' or ch == 'e' or ch == 'i' or ch == 'o' or ch == 'u'):

 print(f"{ch} is vowel")

else:

 print(f"{ch} is consonant")
```

Q6 Write a basic calculator program that takes two numbers and an operator (+, -, *, /) as input and performs the specified operation. Print the result based on the operation.

```
a = int(input("Enter a number : "))

b = int(input("Enter another number: "))
```

```
op = input("Enter the operation you want to perform + - * / : ")

if(op == '+'):

 print(f"{a} + {b} = {a+b}")

elif(op == '-'):

 print(f"{a} - {b} = {a-b}")

elif(op == '*'):

 print(f"{a} * {b} = {a*b}")

else:

 print(f"{a} / {b} = {a/b}")
```

Q7 Write a program that takes a number as input and checks whether it is positive, negative, or zero.

```
a = int(input("Enter any number: "))

if(a == 0):

 print(f"{a} is zero")

elif(a > 0):

 print(f"{a} is positive")

else:

 print(f"{a} is negative")
```

Q8 Write a program that checks if a username and password entered by the user match the pre-set values username = "admin" and password = "1234". If both match, print "Login Successful", otherwise print "Login Failed".

```
username = "admin"

password = 1234

u = input("Enter your username: ")

p = int(input("Enter your password: "))
```

```
if(username == u and p == password):

 print("Login Successful")

else:

 print("Login Failed")
```

Q9 Write a program that takes three sides of a triangle as input and checks if those sides form a valid triangle. A triangle is valid if the sum of any two sides is greater than the third side. Check conditions like a + b > c, b + c > a, and a + c > b.

```
a = int(input("Enter 1st side of triangle: "))

b = int(input("Enter 2nd side of triangle: "))

c = int(input("Enter 3rd side of triangle: "))

if(a < b+c or b < a+c or c < a+b):

 print("Yes its a Triangle")

else:

 print("It's not a Triangle")
```

Q10 Write a program that calculates the Body Mass Index (BMI) based on user input for weight (in kilograms) and height (in meters). Then categorize the BMI into:

Underweight (BMI < 18.5)
Normal weight (18.5 <= BMI < 24.9)
Overweight (25 <= BMI < 29.9)
Obesity (BMI >= 30)

Use the formula: BMI = weight / (height ** 2)

```
w = int(input("Enter your weight in KG's: "))

h = int(input("Enter your height in meters: "))

bmi = w / h**2

if(bmi >= 30):

 print("obesity")

elif(bmi >= 25):
```

```
 print("Overweight")

elif(bmi >= 18.5):

 print("Normal weight")

else:

 print("Underweight")
```

Q11 Write a program that calculates the discount for a product based on its price:

If price is greater than 1000, discount is 10%
If price is between 500 and 1000, discount is 5%
Otherwise, no discount
Print the final price after applying the discount.

```
p = int(input("Enter price of your product: "))
if(p > 1000):
 print(f"Your final price after 10% discount🎉 is = {0.9 * p}")
elif(p >= 500):
 print(f"Your final price after 5% discount🎉 is = {.95 * p}")
```

Q12 Write a program that takes the name of a month as input and prints the number of days in that month. Consider leap years for February.

```
m = input("Enter any month: ").lower()

if(m == "january" or m == "march" or m == "may" or m == "july" or m == "august" or m ==
"october" or m == "december"):

 print(f"{m} has 31 days")

elif(m == "april" or m == "june" or m == "september" or m == "november"):

 print(f"{m} has 30 days")

else:

 print(f"{m} has 28 days")
```

Q13 Write a program that simulates a simple ATM. The user should be able to:

Check balance
Deposit money
Withdraw money (ensure the balance doesn't go negative) Use an if-else structure to handle the user's

choices.

```
balance = 10000

while True:
   print("1. Check Balance")
   print("2. Deposit Money")
   print("3. Withdraw Money")
   print("4. Exit")

   choice = input("Enter your choice (1-4): ")

   if choice == '1':
       print(f"Your current balance is: Rs.{balance}")

   elif choice == '2':
       amount = float(input("Enter amount to deposit: Rs."))
       if amount > 0:
           balance += amount
           print(f"Rs.{amount} deposited successfully. New balance: Rs.{balance}")
       else:
           print("Please enter a valid amount.")

   elif choice == '3':
       amount = float(input("Enter amount to withdraw: Rs."))
       if amount > 0:
           if amount <= balance:
               balance -= amount
               print(f"Rs.{amount} withdrawn successfully. Remaining balance: Rs.{balance}")
           else:
               print("Insufficient funds.")
       else:
           print("Please enter a valid amount.")

   elif choice == '4':
       print("Goodbye!")
       break

   else:
       print("Invalid choice. Please select from 1 to 4.")
```

Q14 Write a program that categorizes a given age into different groups:

Infant (0-1 year)

Toddler (2-4 years)
Child (5-12 years)
Teenager (13-19 years)
Adult (20-59 years)
Senior (60 years and above)

```
a = int(input("Enter an age: "))
if(a >= 60):
 print("Senior")
elif(a >= 20):
 print("Adult")
elif(a >= 13):
 print("Teenager")
elif(a >= 5):
 print("Child")
elif(a >= 2):
 print("Toddler")
else:
 print("Infant")
```

Q15 Write a program that takes an integer (1-7) as input and prints the corresponding day of the week (1 for Monday, 2 for Tuesday, etc.).

```
d = int(input("Enter a day number from 1 to 7: "))

if(d == 1):

 print("Monday")

elif(d == 2):

 print("Tuesday")

elif(d == 3):

 print("Wednesday")

elif(d == 4):

 print("Thursday")

elif(d == 5):

 print("Friday")

elif(d == 6):
```

```
 print("Saturday")

else:

 print("Sunday")
```