



Python mini-project

Submitted by:- Aashutosh kumar

Section:-BC 1

Class roll no:- 01

Submitted to:-Gurpreet Kaur mam

1.Basic Calculator:

```
a = int(input("Enter the first number:"))
b = int(input("Enter the second number:"))
operator = input("enter the operator:- + , - , * , / , % , ** : - , // : + ")
match(operator):
    case('+'):
        print("Sum=",a+b)
    case('-'):
        print("difference=",a-b)
    case('*'):
        print("Multiplication=",a*b)
    case('/'):
        print("division=",a/b)
    case('%'):
        print("remainder=",a%b)
    case '**':
        print(a,"raise to the power",b "=",a**b)
    case '//':
        print("floor division",a//b)
```

```
PS C:\Users\ashut\OneDrive\Desktop\python program> cd "c:\Users\ashut\OneDrive\Desktop\python program"
PS C:\Users\ashut\OneDrive\Desktop\python program> python -u "c:\Users\ashut\OneDrive\Desktop\python program\matchcase.py"
Enter the first number:8
Enter the second number:6
enter the operator:- + , - , * , / , % , ** : - , // : +
Sum= 14
PS C:\Users\ashut\OneDrive\Desktop\python program> █
```

2.NUMBER SYSTEM

```
start = int(input("enter the starting point :"))
end = int(input("enter the ending point:"))
update = int(input("enter the updation:"))
choice = input("Enter the choice:- r for printing in reverse order in row:,
c for printing in reverse order in column:,f for printing forward order in
row:,g for printing forward order in column:")
if choice=="r":
    for i in range(end,start-1,-update):
        print(i,end=",")
elif choice=="c":
    for i in range(end,start-1,-update):
        print(i)
elif choice=="f":
    for i in range(start,end+1,update):
        print(i,end=",")
elif choice=="g":
    for i in range(start,end+1,update):
        print(i)
else:
    print("invalid choice")
```

```
python program\forloop.py (main.py)
enter the starting point :2
enter the ending point:8
enter the updation:1
Enter the choice:- r for printing in reverse order in row:, c for printing in reverse order in column:,f for pr
inting forward order in row:,g for printing forward order in column:r
8,7,6,5,4,3,2,
PS C:\Users\ashut\OneDrive\Desktop\python program\forloop.py> |
```

3. Grading system

```
percentage = float(input("enter the percentage of the  
student:"))  
if percentage > 80 :  
    print("very good")  
elif percentage > 60 :  
    print("good")  
elif percentage > 40:  
    print("average")  
else:  
    print("fail")
```

```
enter the percentage of the student:65
```

```
good
```

```
PS C:\Users\ashut\OneDrive\Desktop\python program> |
```

4.Voting system

```
age=int(input("enter the age:"))
if age>18:
    print("you are eligible for voting")
    print("make your choice")
    print("1.BJP\n 2.AAP\n 3.CNG\n 4.RJD")
    choice=int(input("enter your choice"))
    if choice==1:
        print("1.BJP")
    if choice==2:
        print("2.AAP")
    if choice==3:
        print("3.CNG")
    if choice==4:
        print("4.RJD")
else:
    print("you are not eligible")
    print("invalid choice")
```

```
enter the age:25
you are eligible for voting
make your choice
1.BJP
2.AAP
3.CNG
4.RJD
enter your choice4
4.RJD
PS C:\Users\ashut\OneDrive\Desktop\python program>
```

5.Roll dice

```
import random
```

```
result = random.randint(1,6)
```

```
print(result)
```

```
PS C:\Users\ashut\OneDrive\Desktop\python program> cd "c:\Users\ashut\OneDrive\Desktop\python
```

```
PS C:\Users\ashut\OneDrive\Desktop\python program> python -u "c:\Users\ashut\OneDrive\Desktop\11_dice.py"
```

```
4
```

```
PS C:\Users\ashut\OneDrive\Desktop\python program> █
```

6.inventory

```
class Inventory:
```

```
    def __init__(self):  
        self.items = {}
```

```
    def add_item(self, item_name, quantity):
```

```
        if item_name in self.items:  
            self.items[item_name] += quantity
```

```
        else:
```

```
            self.items[item_name] = quantity
```

```
    def remove_item(self, item_name, quantity):
```

```
        if item_name in self.items and self.items[item_name] >= quantity:
```

```
            self.items[item_name] -= quantity
```

```
        elif item_name in self.items:
```

```
            print(f"There are only {self.items[item_name]} {item_name(s)} left in the  
inventory.")
```

```
        else:
```

```
            print(f"{item_name} is not in the inventory.")
```

```
    def view_inventory(self):
```

```
        for item_name, quantity in self.items.items():
```

```
            print(f"{item_name}: {quantity}")
```

```
inventory = Inventory()
```

```
inventory.add_item("apple", 10)
```

```
inventory.add_item("banana", 20)
```

```
inventory.view_inventory()
```

```
inventory.remove_item("apple", 5)
```

```
inventory.view_inventory()
```

```
inventory.remove_item("orange", 3)
```

```
apple: 10
```

```
banana: 20
```

```
apple: 5
```

```
banana: 20
```

```
orange is not in the inventory.
```

```
PS C:\Users\ashut\OneDrive\Desktop\python program> █
```

7. Rock Paper Scissor

```
import random
```

```
def get_user_choice():
    choice = input("Enter your choice (rock, paper, scissors): ").lower()
    if choice in ["rock", "paper", "scissors"]:
        return choice
    else:
        print("Invalid input. Please try again.")
        return get_user_choice()

def get_computer_choice():
    choices = ["rock", "paper", "scissors"]
    return random.choice(choices)

def determine_winner(user_choice, computer_choice):
    if user_choice == computer_choice:
        return "tie"
    elif (user_choice == "rock" and computer_choice == "scissors") or \
        (user_choice == "paper" and computer_choice == "rock") or \
        (user_choice == "scissors" and computer_choice == "paper"):
        return "user"
    else:
        return "computer"

def main():
    print("Welcome to Rock, Paper, Scissors!")
    user_choice = get_user_choice()
    computer_choice = get_computer_choice()
    winner = determine_winner(user_choice, computer_choice)
    if winner == "tie":
        print(f"It's a tie! Both you and the computer chose {user_choice}.")
    elif winner == "user":
        print(f"You win! You chose {user_choice} and the computer chose {computer_choice}.")
    else:
        print(f"You lose! You chose {user_choice} and the computer chose {computer_choice}.")

if __name__ == "__main__":
    main()
```

Output:

```
Welcome to Rock, Paper, Scissors!
Enter your choice (rock, paper, scissors): rock
You lose! You chose rock and the computer chose paper.
PS C:\Users\ashut\OneDrive\Desktop\python program> cd "c:\Users\ashut\OneDrive\Desktop\python program"
PS C:\Users\ashut\OneDrive\Desktop\python program> python -u "c:\Users\ashut\OneDrive\Desktop\python program\ck_paper_scissor.py"
Welcome to Rock, Paper, Scissors!
Enter your choice (rock, paper, scissors): paper
You lose! You chose paper and the computer chose scissors.
PS C:\Users\ashut\OneDrive\Desktop\python program> |
```


8.Number guessing game

```
import random
secret_number = random.randint(1, 100)
attempts = 0
max_attempts = 5

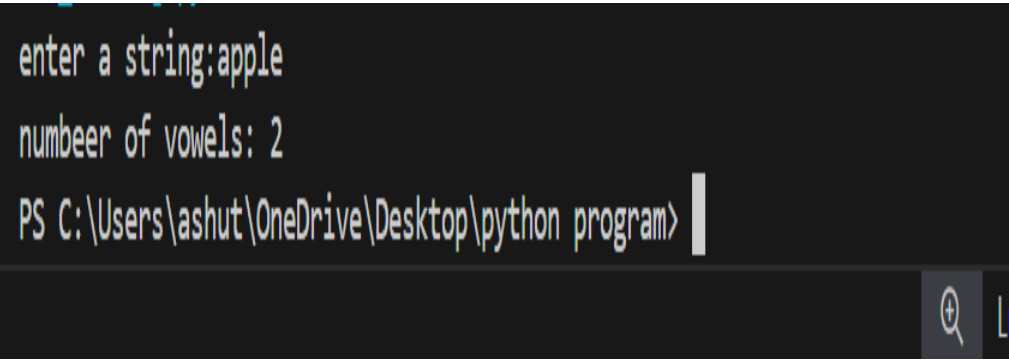
print("Welcome to the Number Guessing Game!")
print("I have chosen a number between 1 and 100. Can you
guess it?")
while attempts < max_attempts:
    guess = int(input("Enter your guess: "))
    attempts += 1
    if guess == secret_number:
        print(f"Congratulations! You guessed the number
{secret_number} correctly in {attempts} attempts!")
        break
    elif guess < secret_number:
        print("Too low! Try again.")
    else:
        print("Too high! Try again.")
if attempts == max_attempts:
    print(f"Sorry, you've run out of attempts! The correct
number was {secret_number}.")
```

Output:

```
> cd "c:\Users\ashut\OneDrive\Desktop\python program"
PS C:\Users\ashut\OneDrive\Desktop\python program> python -u "c:\Users\ashut\OneDrive\Desktop\python program\_guessing_game.py"
Welcome to the Number Guessing Game!
I have chosen a number between 1 and 100. Can you guess it?
Enter your guess: 56
Too high! Try again.
Enter your guess: 5
Too low! Try again.
Enter your guess: 
```

9.Vowel counting

```
s=input("enter a string:")
count=0
s=s.lower()
a=s.strip()
for i in a:
    if i in "aeiou":
        count+=1
print("number of vowels:",count)
```



```
enter a string:apple
```

```
number of vowels: 2
```

```
PS C:\Users\ashut\OneDrive\Desktop\python program>
```