EXPERIMENT NO - 09

- **Aim** - Program to create a dictionary with keys as First character and value as word starting with that character.

- **Theory** -

An algorithm for the program to create a dictionary with keys as the first character and values as words starting with that character.

1) Start
2) Initialize an empty dictionary 'word_list' to store the mapping of first character to word.
3) Input the string and use a string function to split the input string into individual word.
4) Store this word in a list.
5) Iterate over the words list.
   For each word in a list
       Get the first character of the word.
       Convert the character to lowercase (optional)
       check if the character exist as a key in dictionary
           if it does append the word to the list of values for that key.
           if it doesn't, create a new key - value pair with the character as the key and list containing the word as the value.

4) Print 'word. dict'
5) stop

- Program –

```
Sentence = "The cat sat on the mat and then the
                jumped off the mat"
words = sentence. split()
dictionary = {}

for i in words:
    if i[0] not in dictionary. keys():
        dictionary [i[0]] = []
        dictionary [i[0]].append (i)
    else:
        if i not in dictionary [i[0]]:
            dictionary [i[0]].append (i)

print (dictionary)
```

// Output –

```
{'T': ['The'], 'c': ['cat'], 's': ['sat'], 'o': ['on',
'+': ['the', 'then'], 'm': ['mat'], 'o': ['and'],
'f': ['jumped']}
```

- Explaination –

The code split the input string into words, iterate

over each word extract the first character, and adds the words to the list of values for that character, and adds the w in the dictionary. If the character doesn't exist in a dictionary, it creates a new key-value pair.

- Conclusion —

i) The provided python code successfully create a dictionary where the keys are the first character of words, and the values are list of words, that start with those character.

ii) This code demonstrate basic concept such as loops, conditional statement, dictionaries and string manipulation in python.

iii) It can be useful for tasks that involve organizing word or data based on their initial character.