

### Assignment 3

#### 1) Program:

```
#reads text from a file and turns text into list of words
def read_file(file_name):
    f = open(file_name, "r")
    word_list = []
    for x in f:
        for word in x.split():
            word_list.append(word)
    return word_list

#creates dictionary from list (key: word, value: quantity)
def word_freq(word_list):
    dictionary = {}
    for x in word_list:
        if(dictionary.get(x) == None):
            dictionary[x] = 1
        else:
            dictionary[x] = dictionary.get(x) + 1
    return dictionary

#accepts list, returns set
def word_no_duplicate(word_list):
    word_set = set()
    for x in word_list:
        word_set.add(x)
    return word_set

#accepts dictionary, return set
def dic_no_duplicate(dictionary):
    word_set = set()
    for k in dictionary:
        word_set.add(k)
    return word_set

#main method
def main():
    while True:
        try:
            file_name = input("Enter the name of the file: ")
```

```

        word_list = read_file(file_name)
except IOError:
    print("Unable to open file.")
else:
    print("Word List")
    print(word_list)
    dictionary = word_freq(word_list)
    print()
    print("Dictionary")
    print(dictionary)
    word_set = word_no_duplicate(word_list)
    print()
    print("word_no_duplicates Set")
    print(word_set)
    word_set = dic_no_duplicate(dictionary)
    print()
    print("dic_no_duplicates Set")
    print(word_set)
    break

#runs main
if __name__ == "__main__":
    main()

```

## 2) Output:

Enter the name of the file: smu.txt

Word List

[ 'A', 'nationally', 'ranked', 'private', 'university', 'located', 'near', 'the', 'heart', 'of', 'Dallas', 'SMU', 'is', 'a', 'distinguished', 'center', 'for', 'global', 'research', 'with', 'a', 'liberal', 'arts', 'tradition.', 'SMU's', 'nearly', '12,000', 'diverse', 'high-achieving', 'students', 'come', 'from', 'all', '50', 'states', 'and', '90', 'countries', 'to', 'take', 'advantage', 'of', 'the', 'University's', 'small', 'classes', 'hands-on', 'research', 'opportunities', 'leadership', 'development', 'community', 'service', 'international', 'study', 'and', 'innovative', 'programs.', 'The', 'University', 'offers', 'a', 'strong', 'foundation', 'in', 'the', 'humanities', 'and', 'sciences', 'and', 'undergraduate', 'graduate', 'and', 'professional', 'degree', 'programs', 'through', 'seven', 'schools.', 'Now', 'in', 'its', 'second', 'century', 'of', 'achievement', 'SMU', 'is', 'increasingly', 'recognized', 'for', 'the', 'ways', 'it', 'supports', 'students', 'faculty', 'and', 'alumni', 'as', 'they', 'become', 'ethical', 'leaders', 'in', 'their', 'professions', 'and', 'communities.', 'The', 'University's', 'entrepreneurial', 'spirit', 'lives', 'in', 'people', 'from', 'every', 'academic', 'discipline', 'who', 'see', 'opportunities', 'to', 'create', 'something', 'new', 'in', 'the', 'world', '—', 'and', 'work', 'hard', 'to', 'bring', 'their', 'innovations', 'to', 'life.', 'SMU's', 'relationship', 'with', 'Dallas', '—', 'the', 'dynamic', 'center', 'of', 'one', 'of', 'the', 'nation's', 'fastest-growing', 'regions', '—', 'offers', 'unique', 'learning',

'research', 'social', 'and', 'career', 'opportunities', 'that', 'provide', 'a', 'launch', 'pad', 'for', 'our', 'students', 'faculty', 'and', 'alumni', 'to', 'make', 'a', 'global', 'impact.', 'On', 'the', 'most', 'beautiful', 'college', 'campus', 'in', 'the', 'country', 'SMU', 'Mustangs', 'are', 'energized', 'by', 'unbridled', 'opportunities', '—', 'from', 'teaching', 'learning', 'and', 'research', 'to', 'creativity', 'performance', 'and', 'athletic', 'endeavor.', 'SMU', 'was', 'founded', 'by', 'what', 'is', 'now', 'The', 'United', 'Methodist', 'Church', 'in', 'partnership', 'with', 'civic', 'leaders.', 'The', 'University', 'is', 'nonsectarian', 'in', 'its', 'teaching', 'and', 'committed', 'to', 'academic', 'freedom', 'and', 'open', 'inquiry.']

## Dictionary

{'A': 1, 'nationally': 1, 'ranked': 1, 'private': 1, 'university': 1, 'located': 1, 'near': 1, 'the': 9, 'heart': 1, 'of': 5, 'Dallas': 1, 'SMU': 4, 'is': 4, 'a': 5, 'distinguished': 1, 'center': 2, 'for': 3, 'global': 2, 'research': 3, 'with': 3, 'liberal': 1, 'arts': 1, 'tradition.': 1, 'SMU's': 2, 'nearly': 1, '12,000': 1, 'diverse': 1, 'high-achieving': 1, 'students': 1, 'come': 1, 'from': 3, 'all': 1, '50': 1, 'states': 1, 'and': 14, '90': 1, 'countries': 1, 'to': 7, 'take': 1, 'advantage': 1, 'University's': 2, 'small': 1, 'classes.': 1, 'hands-on': 1, 'opportunities': 1, 'leadership': 1, 'development': 1, 'community': 1, 'service.': 1, 'international': 1, 'study': 1, 'innovative': 1, 'programs.': 1, 'The': 4, 'University': 2, 'offers': 2, 'strong': 1, 'foundation': 1, 'in': 8, 'humanities': 1, 'sciences': 1, 'undergraduate': 1, 'graduate': 1, 'professional': 1, 'degree': 1, 'programs': 1, 'through': 1, 'seven': 1, 'schools.': 1, 'Now': 1, 'its': 2, 'second': 1, 'century': 1, 'achievement.': 1, 'increasingly': 1, 'recognized': 1, 'ways': 1, 'it': 1, 'supports': 1, 'students': 2, 'faculty': 2, 'alumni': 2, 'as': 1, 'they': 1, 'become': 1, 'ethical': 1, 'leaders': 1, 'their': 2, 'professions': 1, 'communities.': 1, 'entrepreneurial': 1, 'spirit': 1, 'lives': 1, 'people': 1, 'every': 1, 'academic': 2, 'discipline': 1, 'who': 1, 'see': 1, 'opportunities': 3, 'create': 1, 'something': 1, 'new': 1, 'world': 1, '—': 4, 'work': 1, 'hard': 1, 'bring': 1, 'innovations': 1, 'life.': 1, 'relationship': 1, 'Dallas': 1, 'dynamic': 1, 'one': 1, 'nation's': 1, 'fastest-growing': 1, 'regions': 1, 'unique': 1, 'learning.': 1, 'research.': 1, 'social': 1, 'career': 1, 'that': 1, 'provide': 1, 'launch': 1, 'pad': 1, 'our': 1, 'make': 1, 'impact.': 1, 'On': 1, 'most': 1, 'beautiful': 1, 'college': 1, 'campus': 1, 'country.': 1, 'Mustangs': 1, 'are': 1, 'energized': 1, 'by': 2, 'unbridled': 1, 'teaching.': 1, 'learning': 1, 'creativity.': 1, 'performance': 1, 'athletic': 1, 'endeavor.': 1, 'was': 1, 'founded': 1, 'what': 1, 'now': 1, 'United': 1, 'Methodist': 1, 'Church': 1, 'partnership': 1, 'civic': 1, 'leaders.': 1, 'nonsectarian': 1, 'teaching': 1, 'committed': 1, 'freedom': 1, 'open': 1, 'inquiry.': 1}

## word\_no\_duplicates Set

{'arts', 'programs.', 'people', 'all', 'seven', 'students', 'energized', 'humanities', 'private', 'take', 'campus', 'heart', 'was', 'that', 'century', 'with', 'advantage', 'new', 'University', 'a', 'endeavor.', 'hard', 'create', 'by', 'unbridled', 'bring', 'civic', 'leaders', 'strong', 'achievement', 'work', 'professions', 'research', 'relationship', 'nationally', 'partnership', 'freedom', 'regions', 'teaching', 'tradition.', 'alumni', 'leaders.', 'learning', 'global', 'center', 'lives', 'pad', 'one', 'research', 'career', 'nearly', 'University's', 'increasingly', 'Mustangs', '90', 'graduate', 'is', 'liberal', 'foundation', 'faculty', 'provide', 'through', 'teaching', 'fastest-growing', 'open', 'diverse', 'spirit', 'it', 'SMU', 'what', 'service', 'second', 'opportunities', 'offers', 'degree', 'beautiful', 'something', 'as', 'ways', 'sciences', 'classes', 'hands-on', 'recognized', 'Church', 'On', 'dynamic', 'academic', 'come', 'for', '—', 'athletic', 'committed', 'supports', 'become', 'undergraduate', 'in', 'social', 'leadership', 'development', '50', 'creativity', 'performance',

'make', 'United', 'university', 'our', 'to', 'launch', 'impact.', 'world', 'ethical', 'founded', 'study', 'countries', 'discipline', 'learning,', 'innovations', 'community', 'opportunities', 'high-achieving', 'every', 'international', 'they', 'see', 'nonsectarian', 'communities.', 'SMU's', 'the', '12,000', 'ranked', 'small', 'now', 'who', 'Methodist', 'professional', 'Dallas,', 'of', 'schools.', 'students', 'programs', 'Dallas', 'inquiry.', 'states', 'its', 'nation's', 'entrepreneurial', 'unique', 'college', 'life.', 'innovative', 'country', 'distinguished', 'located', 'A', 'from', 'The', 'Now', 'near', 'and', 'most', 'their', 'are'}

dic\_no\_duplicates Set

{'arts', 'programs.', 'people', 'all', 'seven', 'students', 'energized', 'humanities', 'private', 'take', 'campus', 'heart', 'was', 'that', 'century', 'with', 'advantage', 'new', 'University', 'a', 'endeavor.', 'hard', 'create', 'by', 'unbridled', 'bring', 'civic', 'leaders', 'strong', 'achievement,', 'work', 'professions', 'research', 'relationship', 'nationally', 'partnership', 'freedom', 'regions', 'teaching,', 'tradition.', 'alumni', 'leaders.', 'learning', 'global', 'center', 'lives', 'pad', 'one', 'research,', 'career', 'nearly', 'University's', 'increasingly', 'Mustangs', '90', 'graduate', 'is', 'liberal', 'foundation', 'faculty', 'provide', 'through', 'teaching', 'fastest-growing', 'open', 'diverse,', 'spirit', 'it', 'SMU', 'what', 'service,', 'second', 'opportunities,', 'offers', 'degree', 'beautiful', 'something', 'as', 'ways', 'sciences', 'classes,', 'hands-on', 'recognized', 'Church,', 'On', 'dynamic', 'academic', 'come', 'for', '-', 'athletic', 'committed', 'supports', 'become', 'undergraduate,', 'in', 'social', 'leadership', 'development,', '50', 'creativity,', 'performance', 'make', 'United', 'university', 'our', 'to', 'launch', 'impact.', 'world', 'ethical', 'founded', 'study', 'countries', 'discipline', 'learning,', 'innovations', 'community', 'opportunities', 'high-achieving', 'every', 'international', 'they', 'see', 'nonsectarian', 'communities.', 'SMU's', 'the', '12,000', 'ranked', 'small', 'now', 'who', 'Methodist', 'professional', 'Dallas,', 'of', 'schools.', 'students', 'programs', 'Dallas', 'inquiry.', 'states', 'its', 'nation's', 'entrepreneurial', 'unique', 'college', 'life.', 'innovative', 'country', 'distinguished', 'located', 'A', 'from', 'The', 'Now', 'near', 'and', 'most', 'their', 'are'}

### 3) Test cases:

```
Enter the name of the file: wrongfile.txt
Unable to open file.
Enter the name of the file: 1234
Unable to open file.
Enter the name of the file: &&a
Unable to open file.
Enter the name of the file: smu.txt
Word List
['A'. 'nationallv'. 'ranked'. 'private'. 'universi
```