



Atma Ram Sanatan Dharma College

Class Assignment

Practical File

Question 5

SUBMITTED BY

Name : Ankit Sarawag
Course : Bsc.(Hons) Computer Science
Roll no : 22/28006
Semester : 2
Subject : Discrete Mathematical Structures
Teacher : Dr. Shalini Gupta(Faculty Of
Computer Science)

5) Write a program to evaluate a polynomial function.(for example store $f(x) = 4x^2 + 2x + 9$ in an array and for a given value of x , say $x=5$, compute the value of $f(x)$).

CODE

```
Go Run Terminal Help • 5.py - question 1 - Visual Studio Code
Welcome 1.py 5.py
question5 > 5.py > ...
1
2 # write a program to evaluate a polynomial function
3 def evaluatePolynomial(coefficients,value): #function for calculating the polynomial function value
4     result=0
5     power=len(coefficients)-1
6     for i in coefficients: #traversing the coefficients
7         result+=i*(value**power)
8         power-=1
9     return result #returning the value of the polynomial function
10
11
12 def main(): #main function
13     degree=int(input("enter the degree of your polynomial function:")) #degree of the polynomial
14     coefficients=[] #list storing the coefficients
15     for i in range(degree,-1,-1):
16         if i!=0:
17             n=int(input("enter the coefficient of x^{0:1d}:".format(i))) #taking value of the coefficients from the user
18         else:
19             n=int(input("enter the value of the constant term:"))
20         coefficients.append(n)
21
22     #value for which to calculate the polynomial function
23     n=int(input("enter the value for which you want to evaluate the value of the polynomial function:"))
24     polynomialValue=evaluatePolynomial(coefficients,n)
25     print("the value of f(n)=",polynomialValue)
26     main()
```

Output

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
PS C:\Users\ankit\Desktop\DMS\question 1> python -u "c:\Users\ankit\Desktop\DMS\question 1\question5\5.py"
enter the degree of your polynomial function:3
enter the coefficient of x^3:2
enter the coefficient of x^2:1
enter the coefficient of x^1:2
enter the value of the constant term:1
enter the value for which you want to evaluate the value of the polynomial function:2
the value of f(n)= 25
PS C:\Users\ankit\Desktop\DMS\question 1>
```

