Advanced Programming Practice

University Practical Examination

Name: Rahul Greel   RegNo: RA19110200010094

① Aim:
To use symbolic program for the following expressions.

(a) $\int\int a^2 \, da$ (b) $e^x + y^2$

(c) $\frac{1}{10} + \frac{1}{5}$ (d) $\frac{d}{dx}(\sin x)$

CODE:-

```
a = Symbols('a')
g = a**2
j = Integrate(g, a)
a1 = Rational('1/10)
b1 = Rational (1/5)
print (a1+b1)
x = symbols ('x')
g = sin(x)
j = diff (g, a)
printf (str(j))
```

Output
    a** 3/8
    2x + y**2
    1080863910568919/360287970138365
    cos (x)

Result: The code was successfully implemented.

Files 📄 📁 ⋮

🐍 **main.py** ⋮

Packager files

🔧 pyproject.toml

🔧 poetry.lock

main.py

```python
1   from sympy import*
2   import random
3   import functools
4   import operator
5   print("QUESTION 3")
6   print("*****")
7   print("\n")
8   a=symbols('a')
9   g=a**2
10  j=integrate(g,a)
11  print("Before integration a**2")
12  print("After integration "+str(j))
13  print("\n")
14  print("2x+y**2")
15  print("\n")
16  a1=Rational(1/10)
17  b1=Rational(1/5)
18  print(a1+b1)
19  print("\n")
20  x=symbols('x')
21  g=sin(x)
22  j=diff(g,a)
23  print("Before differentiation sin(x)")
24  print("After differentiation "+str(j))
25  print("\n")
```

Console | Shell

```
QUESTION 3
*****


Before integration a**2
After integration a**3/3


2x+y**2


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Before differentiation sin(x)
After differentiation 0


>
```