



ADVANCED PROGRAMMING LAB

LAB FILE

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GROUP 1

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S. No.	Date	Description
1 .	28.07.2020	Basic Arithmetic , Swap , Simple Interest , Print and Cat, Area of circle, triangle area , reverse of digits .

LAB - 1

Ques 1 . All the basic arithmetic operation .

```
a <- 20  
b <- 10  
print(a+b)  
print(a-b)  
print(a*b)  
print(a/b)
```

|

```
> a <- 20  
> b <- 10  
> print(a+b)  
[1] 30  
> print(a-b)  
[1] 10  
> print(a*b)  
[1] 200  
> print(a/b)  
[1] 2  
>
```

Ques 2 . Use of Print and Cat .

```
> print("gautam vijay")  
[1] "gautam vijay"  
> cat("gautam vijay")  
gautam vijay  
>
```

Ques 3. Performing square , cube and modulus operation on a number.

```
> 2 ** 10  
[1] 1024  
> 10 %% 3  
[1] 1  
> 3 ** 2  
[1] 9  
> 3 ** 3  
[1] 27  
> |
```

Ques 4. Swap 2 numbers using two method .

```
1 a <- 23
2 b <- 32
3
4 c <- a
5 a <- b
6 b <- c
7
8 cat(a,b)
9
10 a <- a + b
11 b <- a - b |
12 a <- a - b
13
14 cat(a,b)
```

11:12 (Top Level) ↕

Console	Terminal ×	Jobs ×
~/		
<pre>> a <- 23 > b <- 32 > > c <- a > a <- b > b <- c > > cat(a,b) 32 23> > a <- a + b > b <- a - b > a <- a - b > > cat(a,b) 23 32 > </pre>		

Ques 5 . Display simple interest with required variables.

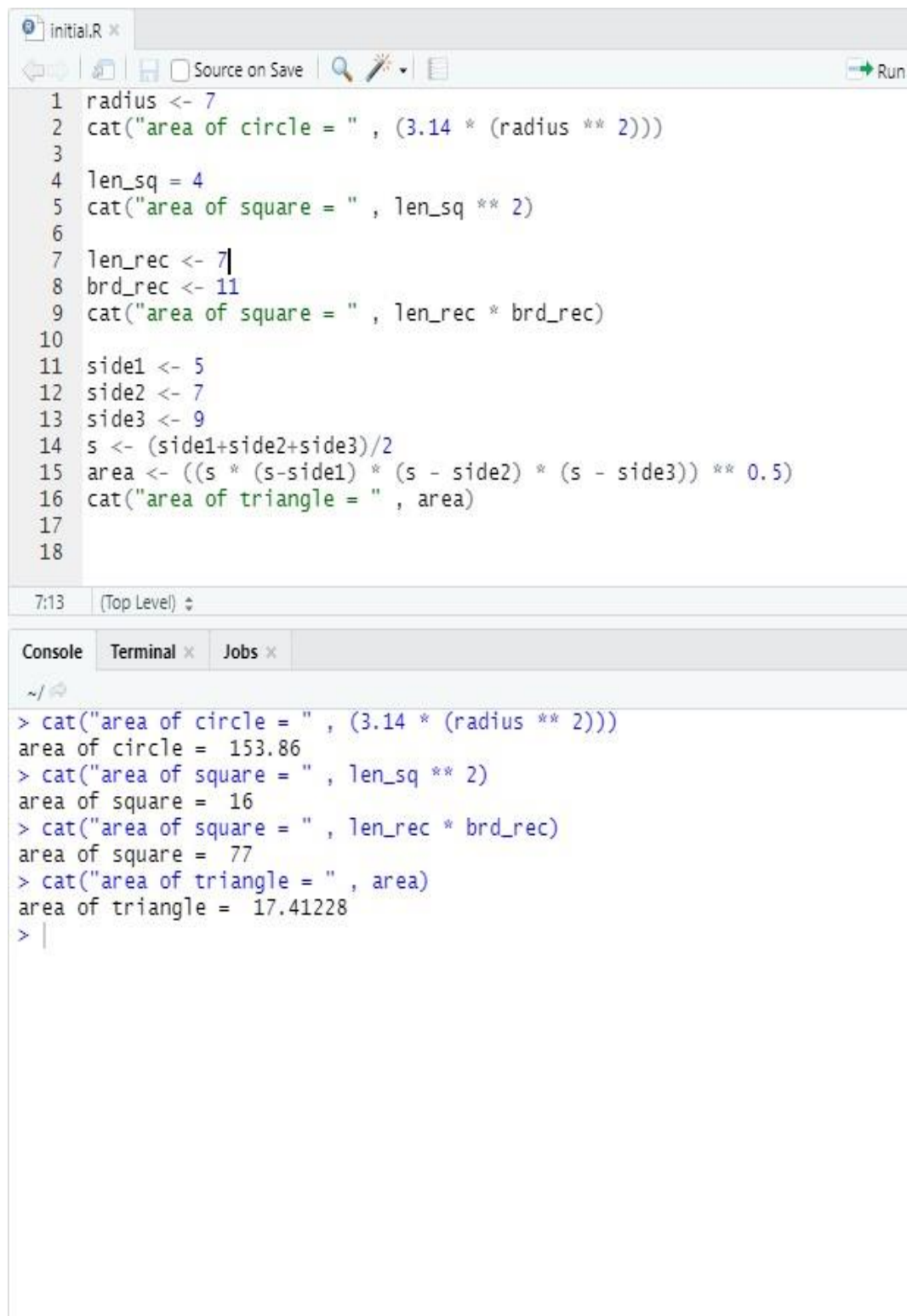


The screenshot shows an RStudio interface with a script editor and a console. The script editor contains four lines of R code: `1 principle <- 340`, `2 rate <- 13`, `3 time <- 7`, and `4 print((principle*rate*time)/100)`. The console shows the execution of these commands, resulting in the output `[1] 309.4`.

```
1 principle <- 340
2 rate <- 13
3 time <- 7
4 print((principle*rate*time)/100)
```

```
> principle <- 340
> rate <- 13
> time <- 7
> print((principle*rate*time)/100)
[1] 309.4
> |
```

Ques 6. Display area of triangle , rectangle , square and circle with required variables .



```
1 radius <- 7
2 cat("area of circle = " , (3.14 * (radius ** 2)))
3
4 len_sq = 4
5 cat("area of square = " , len_sq ** 2)
6
7 len_rec <- 7
8 brd_rec <- 11
9 cat("area of square = " , len_rec * brd_rec)
10
11 side1 <- 5
12 side2 <- 7
13 side3 <- 9
14 s <- (side1+side2+side3)/2
15 area <- ((s * (s-side1) * (s - side2) * (s - side3)) ** 0.5)
16 cat("area of triangle = " , area)
17
18
```

7:13 (Top Level) ↕

Console Terminal × Jobs ×

~/

```
> cat("area of circle = " , (3.14 * (radius ** 2)))
area of circle = 153.86
> cat("area of square = " , len_sq ** 2)
area of square = 16
> cat("area of square = " , len_rec * brd_rec)
area of square = 77
> cat("area of triangle = " , area)
area of triangle = 17.41228
> |
```

Ques 7. Display the reverse of a five digit number . (no conditional or loop statements)

```
28 number <- 12345
29 pow <- 1
30 reverse <- 0
31 pow <- pow *10
32 reverse <- reverse * 10 + (number %% pow) %/% (pow / 10)
33 pow <- pow *10
34 reverse <- reverse * 10 + (number %% pow) %/% (pow / 10)
35 pow <- pow *10
36 reverse <- reverse * 10 + (number %% pow) %/% (pow / 10)
37 pow <- pow *10
38 reverse <- reverse * 10 + (number %% pow) %/% (pow / 10)
39 pow <- pow *10
40 reverse <- reverse * 10 + (number %% pow) %/% (pow / 10)
41 print(reverse)
```

39:15 (Top Level) ⚡

Console

Terminal x

Jobs x

~/

```
> number <- 12345
> pow <- 1
> reverse <- 0
> pow <- pow *10
> reverse <- reverse * 10 + (number %% pow) %/% (pow / 10)
> pow <- pow *10
> reverse <- reverse * 10 + (number %% pow) %/% (pow / 10)
> pow <- pow *10
> reverse <- reverse * 10 + (number %% pow) %/% (pow / 10)
> pow <- pow *10
> reverse <- reverse * 10 + (number %% pow) %/% (pow / 10)
> pow <- pow *10
> reverse <- reverse * 10 + (number %% pow) %/% (pow / 10)
> print(reverse)
[1] 54321
> |
```