Assignment submitted by

Name: Mahaprasad Mohanty

Roll num: 24MDT0061

Check for happy number

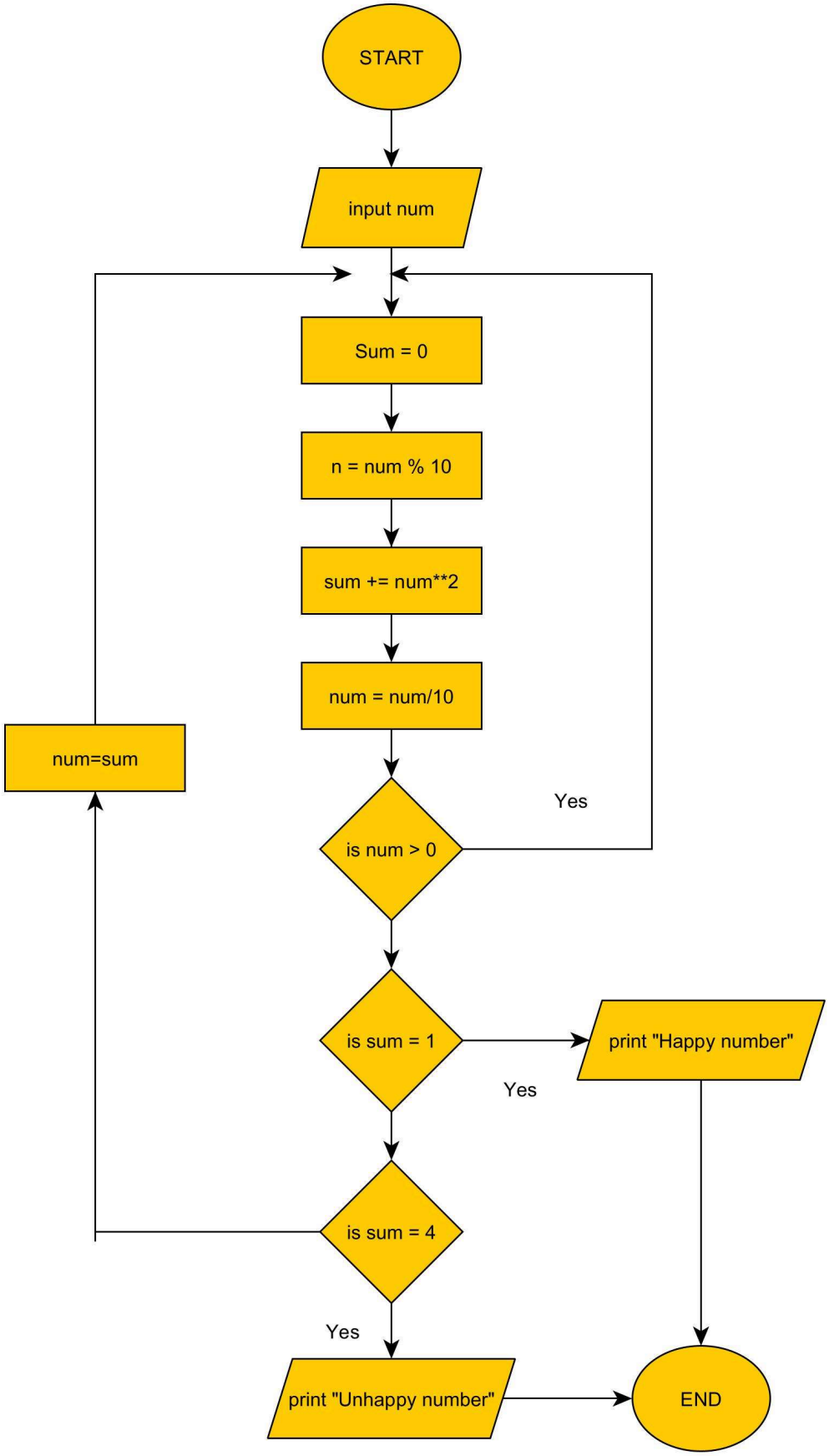
In [ ]:
```
num = int(input("Enter a number"))
num_copy = num

while num != 1 and num != 4:
    current = num
    sum_squares = 0

    while current > 0:
        digit = current % 10
        sum_squares += digit ** 2
        current //= 10

    num = sum_squares

if num == 1:
    print(f"{num_copy} is happy number.")
else:
    print(f"{num_copy} is unhappy number.")
```

```
19 is happy number.
```

In [ ]:
```
### Pseudocode for Happy number

Begin
    input num
    original_num = num
    while num != 1 and num != 4:
        sum_squares = 0
        while num > 0:
            digit = mod(digit, 10)
            sum_squares = sum_squares + (digit*digit)
            num = remainer(num, 10)
        END
        num = sum_squares
    END

    If num == 1:
        print("number is a happy number")
    Else:
        print("number is not a happy number.")
    END
END
```

In [ ]:
```
from IPython.display import Image

Image("happynum.jpg", width=500, height=500)
```

Out[ ]:



print the pattern

In [ ]:
```
user_input = int(input("Enter a number: "))

for i in range(user_input, 0, -1):
    print('*' * i)

for i in range(2, user_input+1):
    print('*' * i)
```

```
******
*****
****
***
**
*
**
***
****
*****
******
```

reversing alphanumeric strings

In [ ]:
```
user_input = str(input("Enter alphanumeric string: "))
result_string = ''
temp_string = ''

for i in user_input:
    if i.isnumeric() == True:
        temp_string += i
    else:
        if temp_string != '':
            result_string += temp_string[::-1]
            temp_string=''
        result_string += i
if temp_string != '':
    result_string += temp_string[::-1]

print(result_string)
```

```
321abcd
```

In [ ]: