

Review for Final Exam

May 3, 2023

1 Review for Final Exam

- Instructor: Dr. Wei Kang
- Class Location and Time: ENV 336, Mon & Wed 12:30 pm - 1:50 pm

Content:

- Schedule
- Review session

1.1 Schedule

1.1.1 Final Exam

- Schedule
 - Time: May 8, 2023, 12:30 pm - 1:50 pm (80 mins)
 - Location: ENV 336
- Format:
 - closed-book, paper exam (bring a pen/pencil)
 - 25 points toward the final grade
 - 20 questions
 - * 17 multiple choice questions
 - * 1 multiple answer question (more than 1 could apply)
 - * 2 programming questions

1.1.2 Course evaluation

- closes on May 4, 2023 at 11:59pm
- current response rate (the percentage of students who finished the evaluation) is: 30%
- If we can achieve a feedback participation rate of 75% among the class, everyone will receive a 1 point bonus on their final grade

1.1.3 HW10

- Available on Jupyter Hub
- Every student will get full marks irrespective of submission

1.2 Review session

- Review guide.pdf on canvas
- Programming questions

- Additional questions from students

1.2.1 Question 1

Write a Python program to calculate the sum of all the even numbers from 1 to 100.

```
[30]: import numpy as np
```

```
[31]: np.arange(2, 101, 2)
```

```
[31]: array([ 2,  4,  6,  8, 10, 12, 14, 16, 18, 20, 22, 24, 26,
          28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52,
          54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78,
          80, 82, 84, 86, 88, 90, 92, 94, 96, 98, 100])
```

```
[32]: sum(np.arange(2, 101, 2))
```

```
[32]: 2550
```

```
[33]: np.arange(2, 101, 2).sum()
```

```
[33]: 2550
```

```
[20]: list_a = list(range(1, 101))
```

```
[21]: summ = 0
      for i in list_a:
          if i%2 == 0:
              summ = summ + i
      print(summ)
```

```
2550
```

```
[29]: sum(list(range(2, 101, 2)))
```

```
[29]: 2550
```

```
[24]: a = [1,2,35]
      sum(a)
```

```
[24]: 38
```

```
[26]: sum(a) / len(a)
```

```
[26]: 12.666666666666666
```

```
[25]: ave(a)
```

```
-----  
NameError                                Traceback (most recent call last)  
Cell In[25], line 1  
----> 1 ave(a)  
  
NameError: name 'ave' is not defined
```

```
[23]: sum([1,2,35])
```

```
[23]: 38
```

```
[8]: list100 = range(1,101)  
sum_all = 0  
for i in list100:  
    if i%2 == 0:  
        sum_all = i + sum_all  
sum_all
```

```
[8]: 2550
```

```
[11]: list100_even = list(range(1,101, 2))  
sum(list100_even)
```

```
[11]: 2500
```

```
[12]: import numpy as np  
npa100 = np.arange(1,101, 2)  
sum(npa100)
```

```
[12]: 2500
```

```
[13]: npa100.sum()
```

```
[13]: 2500
```

1.2.2 Question 2

Write a Python class called `Square` that has attributes for length. Include methods to calculate the area and perimeter of the square.

```
[14]: class Square():  
        def __init__(self, length):  
            self.length = length  
  
        def area(self):  
            return self.length **2
```

```
def perimeter(self):  
    return self.length * 4
```

```
[15]: s = Square(10)
```

```
[17]: s.area()
```

```
[17]: 100
```

```
[18]: s.perimeter()
```

```
[18]: 40
```

1.2.3 Questions from students?

```
[ ]:
```