

Presentation Project: Chat System

-

GUI, Game, File System & Process

James Chen & Shanglin Yang



Instructors: Prof. Xianbin Gu & Dr. Wen Yin

Introduction



Have You Ever Experience Situations Like This ...

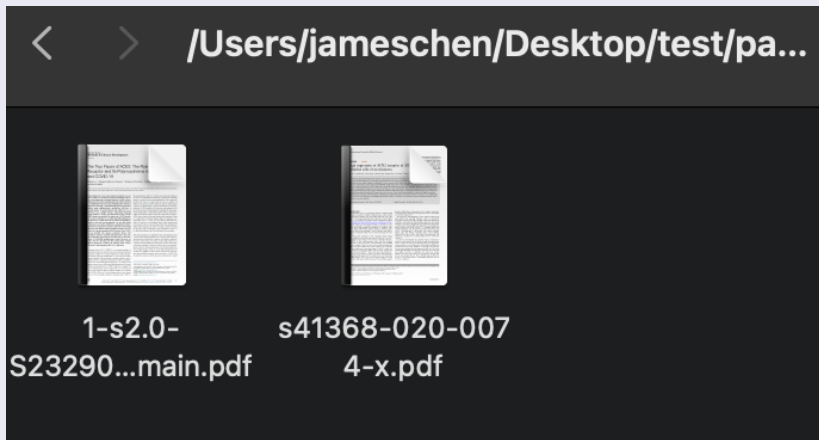
名称 ↓	共享者	上次修改日期
Week 11	Xianbin Gu	2021年11月22日 Xianbin Gu
Week 10	Xianbin Gu	2021年11月12日 Wayne Yin
Week 9	Xianbin Gu	2021年11月2日 Xianbin Gu
Week 8	Xianbin Gu	2021年10月28日 Wayne Yin
Week 5 and Week 6	Xianbin Gu	2021年10月7日 Xianbin Gu
Week 3	Xianbin Gu	2021年9月16日 Wayne Yin
Week 2	Xianbin Gu	2021年9月10日 Wayne Yin
Week 1	Xianbin Gu	2021年9月3日 Wayne Yin

JamesCHEN URC	今天
Final Project.zip 62.1 KB	
杨尚霖eternal	昨天
新建文本文档 (2).txt 1.6 KB	
杨尚霖eternal	昨天
GUI.py 8.5 KB	
杨尚霖eternal	昨天
GUI.py 8.5 KB	
杨尚霖eternal	5天前
Nine_Algorithms_That_Changed_the_Future_The_Ingeni.pdf 7.7 MB	

Introduction



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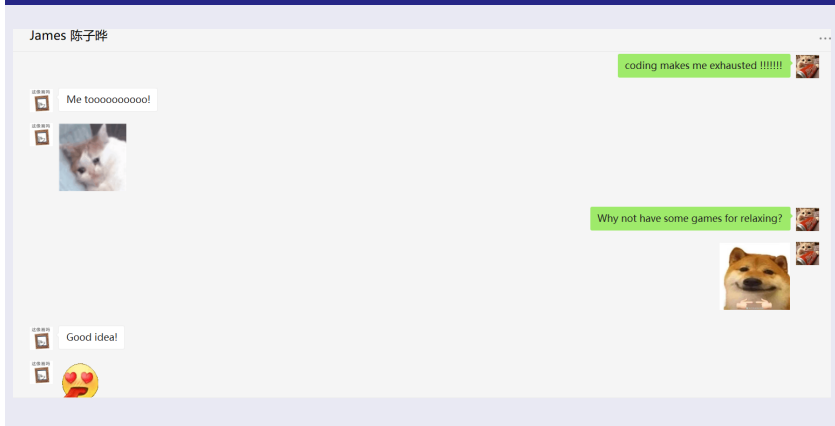


Introduction



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Have You Ever Experience Situations Like This ...



Introduction



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Our Modification to the Chat System

- Graphical User Interface
- Game
- FTP Server: File Upload & Download
- PDF Rename

Sections



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Our Modification to the Chat System

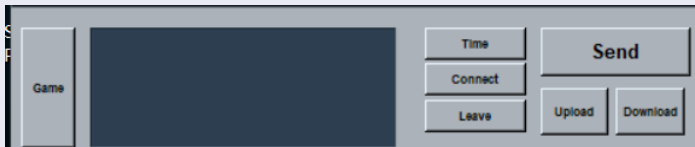
- **Graphical User Interface**
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Graphical User Interface



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Additional Buttons and Location Adjustment



Graphical User Interface

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Time Button

Time: 27.11.21,22:24

```
1 import time
2
3 def layout(self,name):
4     self.time = Button(self.labelBottom,
5                         text = "Time",
6                         font = "Helvetica 6 bold",
7                         width = 20,
8                         bg = "#ABB2B9",
9                         command = lambda : self.showtime())
10
11 def showtime(self):
12     self.textCons.config(state = NORMAL),
13     self.textCons.insert(END,'Time: '+time.strftime('%d.%m.%y,%H
14     self.textCons.config(state = DISABLED)
15     self.textCons.see(END)
```


Graphical User Interface



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Connect Button

```
Who you what to connect with?  
Users: -----  
{'shanglin': 0, 'james': 0}  
Groups: -----  
{  
Enter the name and click the connect again!
```

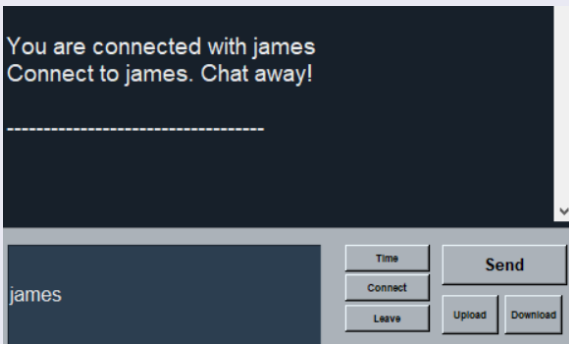
	Time	Send	
	Connect	Upload	Download
	Leave		

Graphical User Interface



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Connect Button



Graphical User Interface



Connect Button

```

1  def layout(self,name):
2      self.connect = Button(self.labelBottom,
3                             text = "Connect",
4                             font = "Helvetica 6 bold",
5                             width = 20,
6                             bg = "#ABB2B9",
7                             command = lambda : self.showconnect())
8  def showconnect(self):
9      if self.entryMsg.get()=='':
10         self.my_msg= 'who'
11     else:
12         target=self.entryMsg.get()
13         self.my_msg= 'c '+target
14     self.entryMsg.delete(0, END)
    
```

Graphical User Interface



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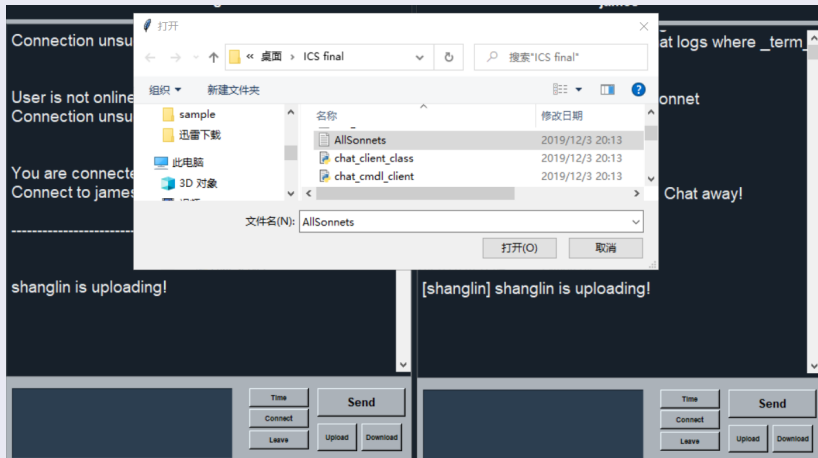
Leave Button

```
1 def layout(self,name):
2     self.leave = Button(self.labelBottom,
3                           text = "Leave",
4                           font = "Helvetica 6 bold",
5                           width = 20,
6                           bg = "#ABB2B9",
7                           command = lambda : self.sendButton('bye')
```

Graphical User Interface



Upload Button





Graphical User Interface

Upload Button

```
1  import os
2  import tkinter as tk
3  from tkinter import filedialog
4
5
6  def file_opener():
7      root = tk.Tk()
8      root.withdraw()
9      file_path = filedialog.askopenfilename()
10     return file_path
```

Sections



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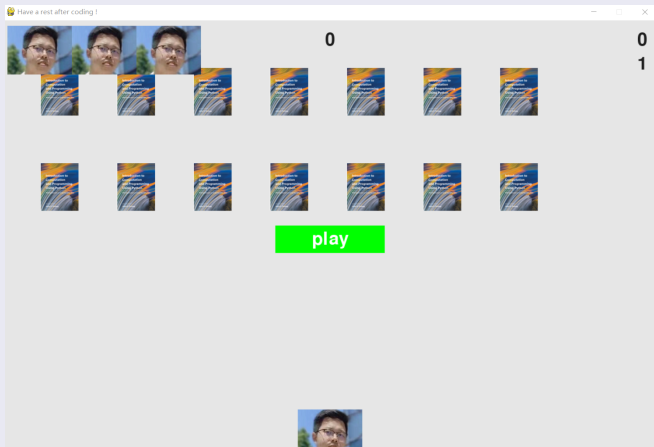
Our Modification to the Chat System

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- **Game**
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Game



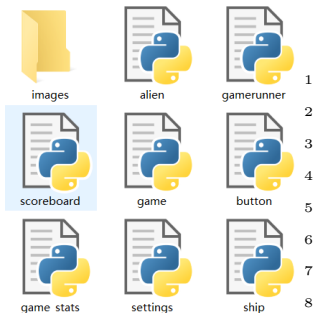
Game demo



Game



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Code overview

```

1 import sys
2 import pygame
3 from settings import Settings
4 from game_stats import GameStats
5 from ship import Ship
6 from bullet import Bullet
7 from alien import Alien
8 from time import sleep
9 from button import Button
10 from scoreboard import Scoreboard
    
```

Game



Intialization

```
1 class ICSGame:
2     def __init__(self):
3         pygame.init()
4         self.screen=pygame.display.set_mode((1200,800))
5         pygame.display.set_caption('Have a rest after coding !')
6         self.settings=Settings()
7         self.screen=pygame.display.set_mode(
8             (self.settings.screen_width,self.settings.screen_height))
9         self.stats = GameStats(self)
10        self.sb=Scoreboard(self)
11        self.ship=Ship(self)
12        self.bullets=pygame.sprite.Group()
13        self.aliens=pygame.sprite.Group()
14        self.create_fleet()
15        self.play_button = Button(self, 'play')
```



Updating the screen

```

1 class ICSGame():
2     def run_game(self):
3         while True:
4             self.check_events()
5             if self.stats.game_active:
6                 self.ship.update()
7                 self.update_bullets()
8                 self.update.aliens()
9             self.update_screen()
    
```

Game

Setting file

```
1 class Settings:
2     def __init__(self):
3         self.screen_width=1200
4         self.screen_height=800
5         self.bg_color=(230,230,230)
6         self.ship_speed=1.5
7         self.ship_limit=3
8         self.bullet_speed=1.0
9         self.bullets_allowed = 10
10        self.alien_speed= 1.0
11        self.fleet_drop_speed = 10
12        self.fleet_direction=-1
13        self.speedup_scale= 1.2
14        self.score_scale=1.5
15        self.initialize_dynamic_settings()
```

Sections



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Our Modification to the Chat System

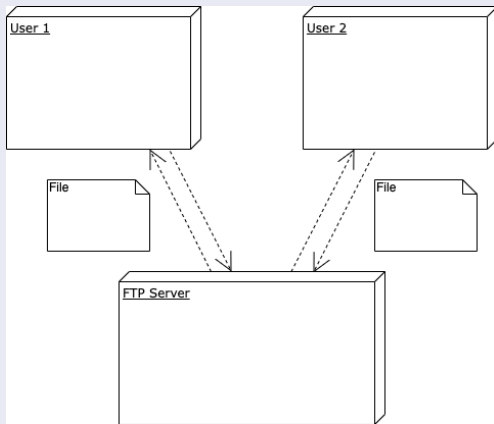
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FTP Server: File Upload & Download



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Structure



FTP Server: File Upload & Download



FTP Server

```

1  from pathlib import Path
2  from pyftplib.authorizers import DummyAuthorizer
3  from pyftplib.handlers import FTPHandler
4  from pyftplib.servers import FTPServer
5  def main():
6      authorizer = DummyAuthorizer()
7      # Now stored in local file folder
8      # "/Users/jameschen/Desktop/" "D:\upload"
9      home_path = Path(__file__).parent / 'files'
10     home_path.mkdir(parents=True, exist_ok=True) # make new fold
11     authorizer.add_user("Admin", "Admin", str(home_path), perm='
12     handler = FTPHandler
13     handler.authorizer = authorizer
14     server = FTPServer(('0.0.0.0', 8888), handler)
15     server.serve_forever()
    
```

FTP Server: File Upload & Download



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Threading (in chat_server)

```
1  from threading import Thread
2  import file_server
3
4  def main():
5      Thread(target=file_server.main).start()
6      server = Server()
7      server.run()
```


FTP Server: File Upload & Download



Upload (in GUI)

```
1  from ftplib import FTP
2  from pathlib import Path
3  def ftpconnect(host='localhost', port=8888, username="Admin", pa
4      ftp = FTP()
5      ftp.connect(host, port)  # Connect the FTP server
6      ftp.login(username, password)  # Log in
7      return ftp
8  def upload(path=None):
9      ftp = ftpconnect()
10     if path is None:
11         path = file_opener.file_opener()
12     with open(path, 'rb') as contents:
13         ftp.storbinary('STOR %s' % os.path.basename(path), conte
14     ftp.quit()
```

FTP Server: File Upload & Download



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Download (in GUI)

```

1  def download(path=str(Path(__file__).parent / 'user_files' / 'us
2      """all files on server are stored in path folder"""
3      path = Path(path)
4      path.mkdir(parents=True, exist_ok=True)
5      ftp = ftpconnect()
6      for filename in ftp.nlst():
7          with open(path / filename, "wb") as f:
8              ftp.retrbinary('RETR %s' % filename, f.write)
9      ftp.quit()
10 class GUI:
11     def download_for_current_user():
12         current_path = str(Path(__file__).parent / 'user_fil
13         download(current_path)
14         pdf_processor.main(current_path)
15         self.textCons.config(state = NORMAL),
16         self.textCons.insert(END, self.user_name+ ' is downloa
17         self.textCons.config(state = DISABLED)

```

Sections



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PDF Rename



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PDF Rename: Library & Path

```

1  import os
2  from PyPDF2 import PdfFileWriter, PdfFileReader
3  from shutil import copy2
4  from pathlib import Path
5
6  def main(path):
7      '''
8      src_dir = Path(__file__).parent/"papers_oldDir"
9      des_dir = Path(__file__).parent/'papers_newDir'
10     '''
11     src_dir = path
12     des_dir = src_dir + "/"+'papers_newDir'"
    
```

PDF Rename



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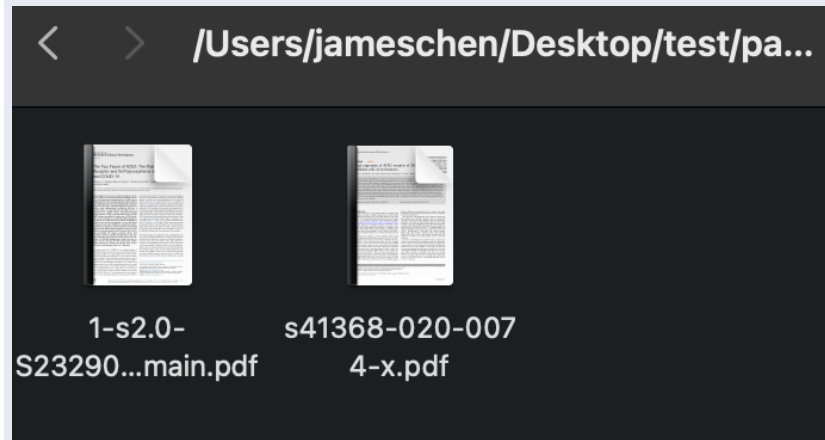
PDF Rename: File Process

```
1  if not os.path.exists(des_dir):
2      os.makedirs(des_dir)
3
4  if os.path.exists(src_dir):
5      dirs = os.listdir(src_dir)
6      for dirc in dirs:
7          if dirc[-3:] == "pdf":
8              pdf_reader = PdfFileReader(open(os.path.join(src_dir, dirc), "rb"))
9              paper_title = pdf_reader.getDocumentInfo().title
10             paper_title = str(paper_title)
```

PDF Rename



PDF Rename: Demo – Before



PDF Rename



PDF Rename: Demo – After

< > /Users/jameschen/Desktop/test/pa...



High expression of ACE2 receptor of 2019-nCoV pneumonia
of ACE2...cosa.pdf

The Two Faces of ACE2: Potential Receptor and Pathogenesis of SARS-CoV-2
ACE2/ T...D-19.pdf

Possible Improvements



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Possible Improvements

- Authority Management
- Secure Messaging

Acknowledgments



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References



Bibliography

- ① 61MKSI, "Python builds an ftp server in one second to help you share files on the LAN" *Zhihu*. [Online]. Available: <https://zhuanlan.zhihu.com/p/84228436>.
- ② ChangTingWai, "Python- upload a single file to FTP" *Zhihu*. [Online]. Available: <https://zhuanlan.zhihu.com/p/415360923>.
- ③ royal, "Use python to read pdf titles and categorize them" *CSDN*. [Online]. Available: https://blog.csdn.net/weixin_41090039/article/details/82421312.
- ④ Shawpan, "Python one sentence using the file dialog to get the file path" *CSDN*. [Online]. Available: <https://blog.csdn.net/shawpan/article/details/78759199>.
- ⑤ T. Gaddis, *Starting out with python*. Harlow, United Kingdom: Pearson, 2022.