

# CS1010S Programming Methodology

Lecture 1  
Assignment Project Exam Help  
Introduction to CS1010S &  
<https://powcoder.com>  
Python  
Add WeChat powcoder

15 Aug 2018



Assignment Project Exam Help  
**Welcome**  
<https://powcoder.com>

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Assignment Project Exam Help

<https://powcoder.com>

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Happy National Day



*Selamat*  
Assignment Project Exam Help  
*Hari Raya Haji*  
<https://powcoder.com>

Add WeChat powcoder  
Makeup Lecture:  
Mon 20 Aug, 6:30-8:30pm, UT-AUD2

Assignment Project Exam Help

3 things

<https://powcoder.com>

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# WHY

Assignment Project Exam Help

should you  
<https://powcoder.com>  
Add WeChat powcoder  
take CS1010S

**WHAT**

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**to expect in**

<https://powcoder.com>

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**CS1010S**

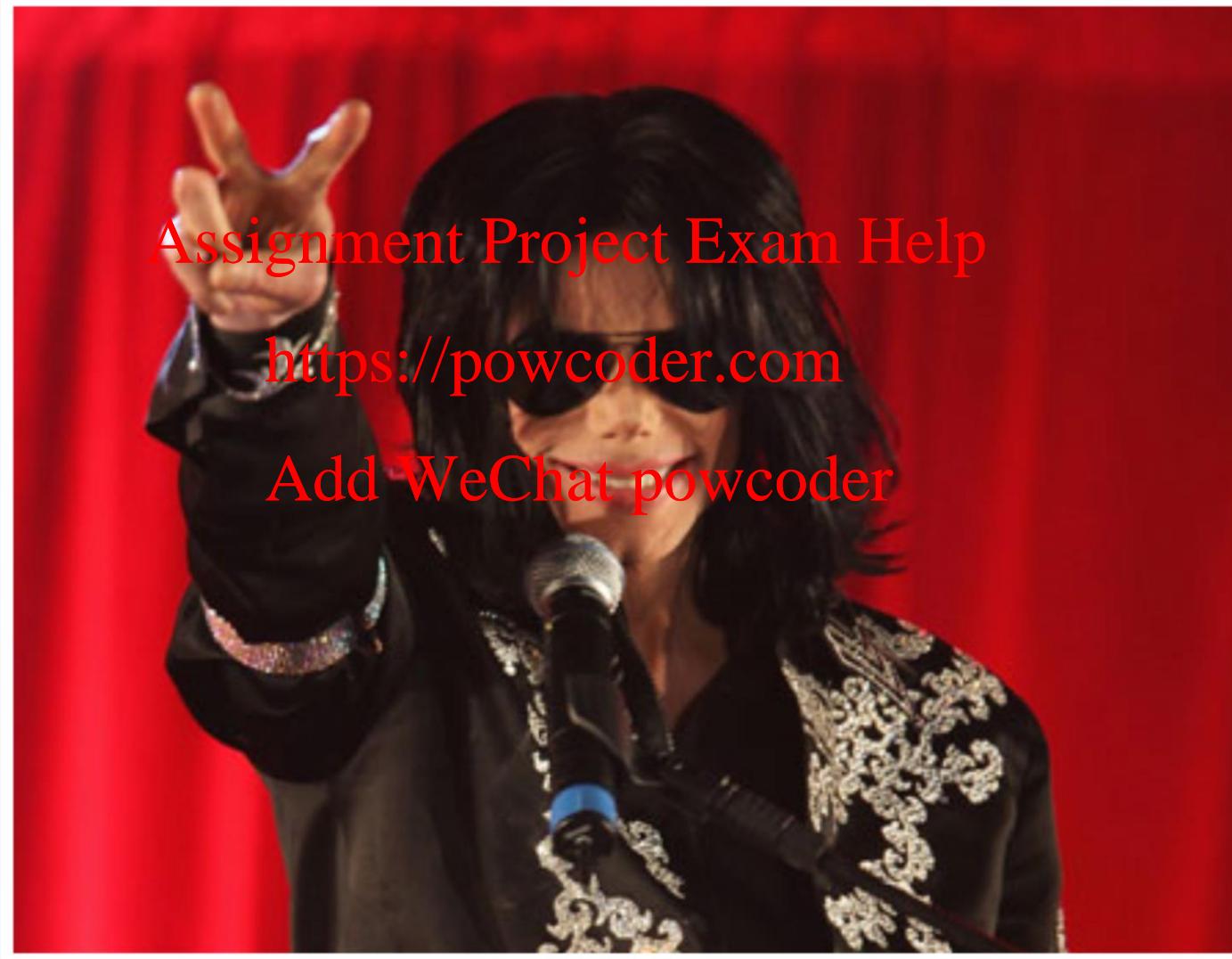
# **HOW**

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# **to learn Python**

<https://powcoder.com>  
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(In 15 mins)

# But first... The Cast



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<https://powcoder.com>

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Wai Kay



Wai

Home 1



## About

## Overview

Work and Education



Works at National University of Singapore

waikay@nus.edu.sg

April 2

Chat (34)



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<https://powcoder.com>

Dr Zhou Lifeng

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# Adi Yoga

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Assignment Project Exam Help

<https://powcoder.com>

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Oana Barbu

# Prof Ben Leong

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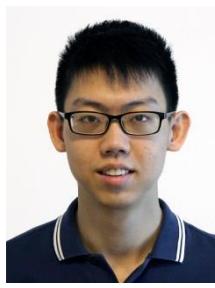
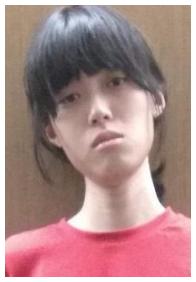


# Tutors

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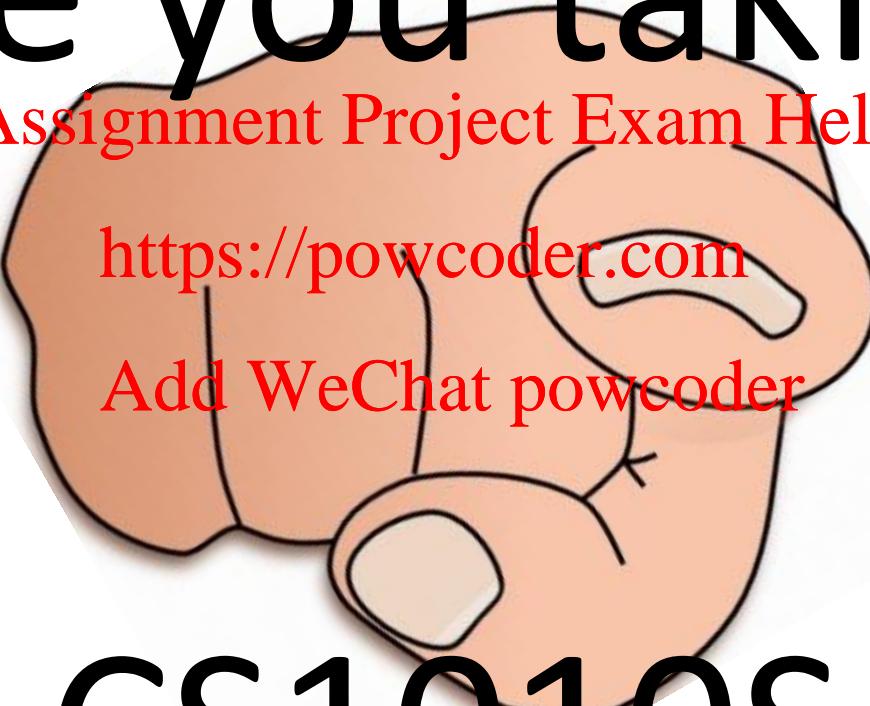
# WHY

Assignment Project Exam Help

should you  
<https://powcoder.com>  
Add WeChat powcoder  
take CS1010S

# WHY are you taking

Assignment Project Exam Help



A hand is shown from the side, wearing a light blue long-sleeved shirt, holding a black smartphone. The phone's screen displays the URL <https://powcoder.com> in white text. The background is a plain white.

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# CS1010S

# WHY are you taking CS1010S?

1. Because I love programming.
2. Because I want to learn  
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programming.  
<https://powcoder.com>
3. Because I am interested in  
computing.
4. Bo bian, core requirement.

# Some Statistics

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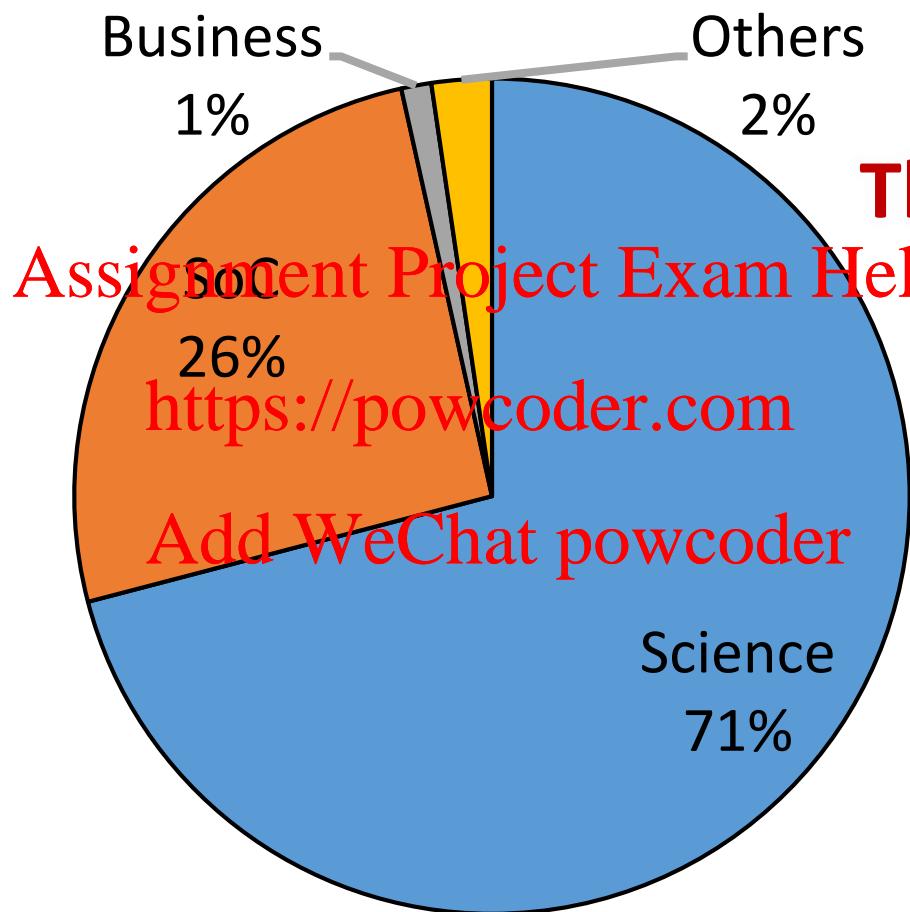
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# CORS

| Round                | Quota   | Bidders | Winning Bid |
|----------------------|---------|---------|-------------|
| Round 1A (Returning) | 90/100  | 8/12    | 1/1         |
| Round 1C (Returning) | 81/88   | 90/89   | 156/1       |
| Round 1C (New)       | 108/112 | 177/159 | 338/496     |
| Round 2A             | 0/0     | -       | -           |
| Round 2B             | 0/0     | -       | Class full  |
| Round 3              | 0/0     | -       | -           |

Quota taken up by preallocation

# % by Faculty

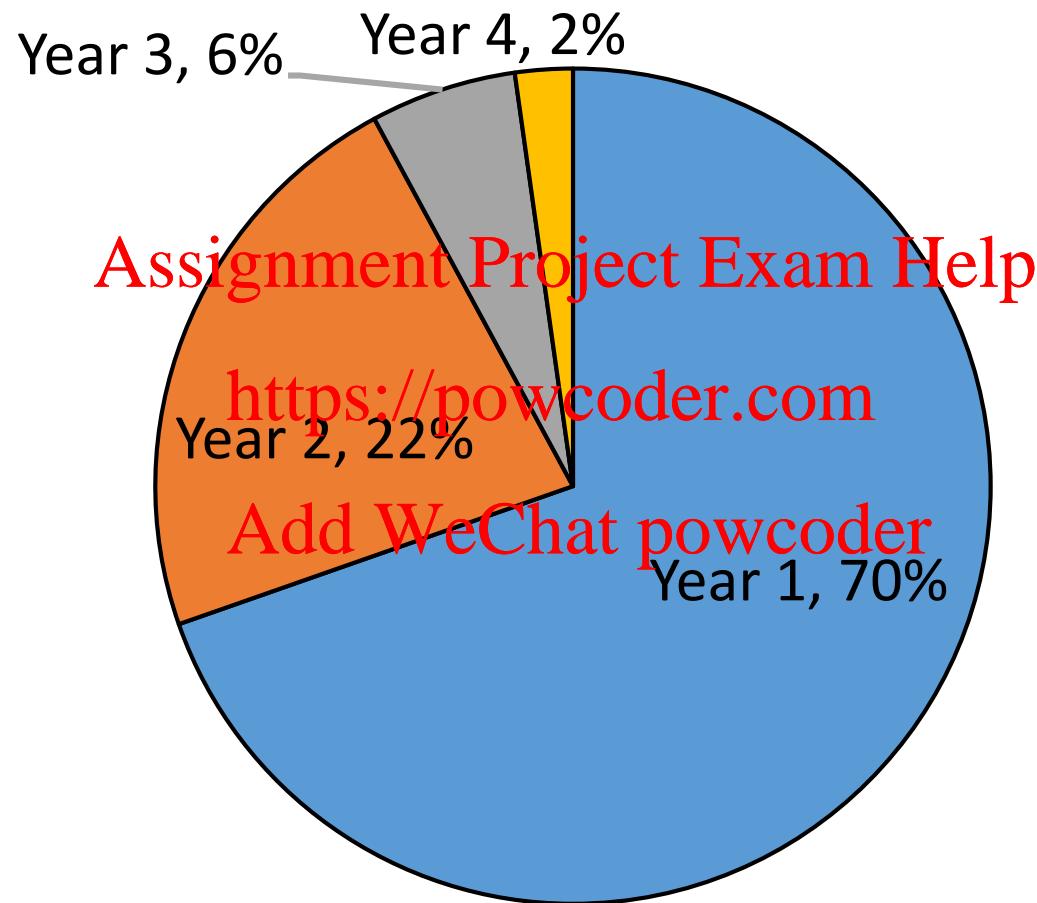


**Warning!**  
There will be  
Help Math!

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Science  
71%

# By Seniority



WHY you  
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CS1010S

1. Because  
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**computers are**  
<https://powcoder.com>  
Add WeChat powcoder  
**useful**

1. Because  
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computers are

https://powcoder.com  
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but they are dumb

They will precisely  
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execute every  
<https://powcoder.com>  
instruction given,  
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even bad ones



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# Personal Computer

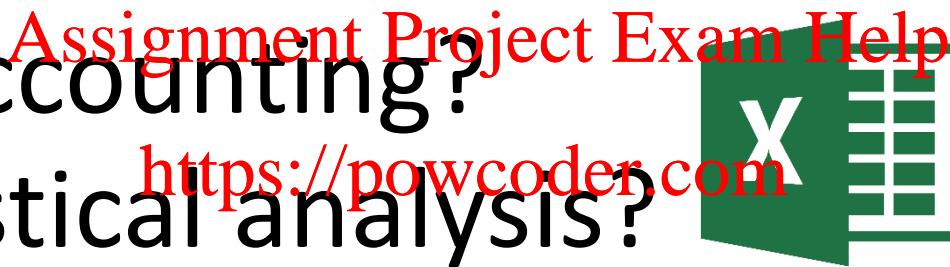


# What will you use to

- Write a report?



- Do accounting?
- Statistical analysis?



- Find prime numbers?
- Solve a puzzle?

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# When is Cheryl's Birthday?

Cheryl's birthday is one of 10 possible dates.

May 15      May 16      May 19

June 17      June 18

July 14      July 16

August 14      August 15      August 17

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Cheryl tells the month to Albert and the day to Bernard.

Albert says, "I don't know the birthday, but I know Bernard doesn't know either."

Bernard then says, "I didn't know at first, but now I do know."

Albert then says, "Now I also know Cheryl's birthday."

When is Cheryl's birthday?

# 2048

SCORE  
6380

BEST  
7176

Join the numbers and get to the **2048** tile!

New Game

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<https://powcoder.com>

8 16 64 128

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2

128

512

2

2

4

32

64

# What will you use to

- Write a report?



- Do accounting? Assignment Project Exam Help
- Statistical analysis? <https://powcoder.com>



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- Find prime numbers?
- Solve a puzzle?
- Scrape data from a website?

Historical PSI Readings

www.nea.gov.sg/anti-pollution-radiation-protection/air-pollution-control/psi/historical-psi-readings

National

Singapore Government

A1    Year    Month    Day    Time    North    South    East    West    Central

|    | Year | Month | Day | Time | North | South | East | West | Central |
|----|------|-------|-----|------|-------|-------|------|------|---------|
| 1  | 2013 | 1     | 1   | 800  | 21    | 16    | 16   | 18   | 16      |
| 2  | 2013 | 1     | 1   | 1200 | 19    | 14    | 14   | 16   | 14      |
| 3  | 2013 | 1     | 1   | 1600 | 18    | 24    | 17   | 18   | 18      |
| 4  | 2013 | 1     | 2   | 800  | 21    | 30    | 22   | 26   | 23      |
| 5  | 2013 | 1     | 2   | 1200 | 21    | 29    | 22   | 25   | 22      |
| 6  | 2013 | 1     | 2   | 1600 | 21    | 19    | 16   | 17   | 13      |
| 7  | 2013 | 1     | 3   | 800  | 24    | 20    | 22   | 19   | 20      |
| 8  | 2013 | 1     | 3   | 1200 | 25    | 21    | 23   | 19   | 22      |
| 9  | 2013 | 1     | 3   | 1600 | 24    | 21    | 22   | 19   | 20      |
| 10 | 2013 | 1     | 3   | 800  | 24    | 21    | 22   | 19   | 20      |
| 11 | 2013 | 1     | 4   | 800  | 23    | 21    | 21   | 18   | 15      |
| 12 | 2013 | 1     | 4   | 1200 | 22    | 19    | 20   | 14   | 14      |
| 13 | 2013 | 1     | 4   | 1600 | 21    | 21    | 18   | 18   | 14      |
| 14 | 2013 | 1     | 5   | 800  | 21    | 23    | 19   | 21   | 17      |
| 15 | 2013 | 1     | 5   | 1200 | 21    | 22    | 21   | 19   | 18      |
| 16 | 2013 | 1     | 5   | 1600 | 22    | 21    | 23   | 17   | 19      |
| 17 | 2013 | 1     | 6   | 800  | 26    | 25    | 30   | 20   | 24      |
| 18 | 2013 | 1     | 6   | 1200 | 28    | 26    | 30   | 23   | 25      |

psi-2013

READY

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# What will you use to

- Write a report?



- Do accounting? Assignment Project Exam Help
- Statistical analysis? <https://powcoder.com>



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- Find prime numbers?
- Solve a puzzle?
- Scrape data from a website?



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Do cool stuff  
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“ You wouldn't believe what I have to do for my first task (at work)... Write some Python programme to automate some data processing.  
**Assignment Project Exam Help**  
Hahahaha.

<https://powcoder.com>  
Who would have thought!

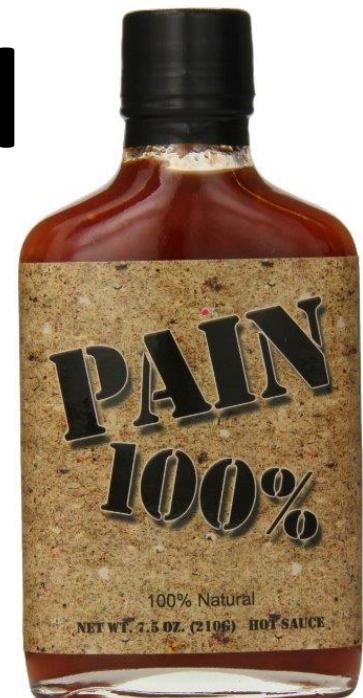
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Mill Jianprasert  
NUS B.B.A  
Management Associate, Garena

**Help simplify**  
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**your work**  
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# Why should you take CS1010S

2. Because pain is  
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good for you  
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**WHAT**

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**to expect in**

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**CS1010S**

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**Work**  
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A lot of  
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work.  
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A lot of  
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hard work.  
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A lot of  
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**hard work.**

<https://powcoder.com>  
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**and some fun :)**

# Lectures

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Here!

# Recitations

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## Start next week

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# Tutorials

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<https://powcoder.com>

# Start in week 3

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# Tutorial Balloting Allocation

Do NOT use CORS

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Fill in preferences in Survey

<https://powcoder.com>

Make sure no clashes!

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Recitation will continue to be  
balloted on CORS

# Weekly Schedule

|     | Classes  | Assignments |          |
|-----|--|-------------|----------|
| Mon |  |             |          |
| Tue | Assignment Project Exam Help                                       |             |          |
| Wed | Lecture<br><a href="https://powcoder.com">https://powcoder.com</a> | Lecture     |          |
| Thu |  | Training    |          |
| Fri | Recitation<br>Add WeChat powcoder                                  |             |          |
| Sat |  |             | Tutorial |
| Sun |  |             | Training |
| Mon |  |             |          |
| Tue | Tutorial   |             |          |

# Important Dates

Wed 3 Oct: Midterm Test (6:30-8 pm)

Fri 19 Oct: Makeup Midterm (6:30 pm)

Assignment Project Exam Help

Sat 17 Nov: ~~Practical Exam~~ (~~12-6 pm~~)

Fri 23 Nov: ~~Add WeChat powcoder~~ practical Exam (2 pm)

Please check and highlight any schedule clashes early

# Google Calendar



<https://calendar.google.com/calendar/ical/0eqa645n5o9cc8t1idjlludss%40group.calendar.google.com/public/basic.ics>

# No textbook

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<https://powcoder.com>

## Save money

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## The Art of Stealth Studying: How To Earn a 4.0 With Only 1.0 Hours of Work

[Tips: Studying](#)

[StudyHacks](#)

October 2nd, 2009, 11:0pm

## Assignment Project Exam Help

Welcome new readers. Study Hacks is a blog dedicated to productivity hacks for students. If you like this article, you might also like these posts on how as an MIT grad student I never work past 5 PM, the difference between work and pseudo-work, and the key to becoming both impressive and relaxed. If you prefer more technical advice, consider my article on using a Monotypic e-mail inbox, this survey of effective student time management techniques, this story of a student who got a 4.0 with 0.0 notes, and these instructions for building a paper research database.

### The Secret Art of Stealth Studying

Most students don't mind studying if the work gets done in focused chunks, spread out over a reasonable amount of time. For some, however, reasonable efficiency is not enough. They want more. They want to push academic productivity to its absolute limit. *They want nothing less than to eliminate studying all together!*



I can't get you all the way to this goal. But I do know a technique that can get you close.

I'm a 31-year-old computer science graduate interested in why some people are successful, enjoyable, meaningful, while so many others do not. I'm a geek, I'm not satisfied with simple slogans (e.g., "follow your passions"), conventional wisdom (e.g., success requires stress). Instead, I'm deeper, looking to decode the patterns of success, in all their nuanced glory.

[Subscribe to the Study Hacks feed](#)

### Sponsor



The trick:  
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Consistency  
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# The problem:

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consistent is

HARD

“gaming can make a  
better world

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- Jane McGonigal

17 Mar 2010

<https://powcoder.com>

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## Missions



Leong Wai Kay

- Announcements
- Missions
- Trainings
- Submissions
- Comments
- Achievements
- Leaderboard
- Students
- Lesson Plan
- Workbin
- Forums
- Administration

# Assignment Project Exam Help

<https://powcoder.com>

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| Title                                   | Maximum Experience Points | Start At              | End At                   | Attempt                 | Submissions                 |
|---|---------------------------|-----------------------|--------------------------|-------------------------|-----------------------------|
| Mission 0: Setting Up Python            | 300                       | August 10, 2016 06:00 | August 14, 2016 23:59    | <a href="#">Attempt</a> | <a href="#">Submissions</a> |
| Mission 1: Rune Reading                 | 400                       | August 17, 2016 06:00 | August 24, 2016 23:59    | <a href="#">Attempt</a> | <a href="#">Submissions</a> |
| Side Quest 1.1: Runic Paintings         | 200                       | August 17, 2016 06:00 | August 24, 2016 23:59    | <a href="#">Attempt</a> | <a href="#">Submissions</a> |
| Mission 2: Cyclic Runes                 | 600                       | August 24, 2016 06:00 | August 30, 2016 23:59    | <a href="#">Attempt</a> | <a href="#">Submissions</a> |
| Side Quest 2.1: Book of Advanced Spells | 300                       | August 24, 2016 06:00 | August 31, 2016 23:59    | <a href="#">Attempt</a> | <a href="#">Submissions</a> |
| Contest 2.2: Beautiful Runes            | 400                       | August 24, 2016 06:00 | September 01, 2016 23:59 | <a href="#">Attempt</a> |                             |

<https://coursemology.org>

# 7 Problem Sets

## 16 Main Missions

+ Side quests & Contests

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<https://powcoder.com>

+ 24/7 Grading

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+ Unlock Achievements

+ Badges

+ Leaderboard



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**MISSION**

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**COMPLETE  
SIDEQUESTS**



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WIN CONTESTS

**COMPLETE  
SIDEQUESTS**



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**COMPLETE**

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WIN CONTESTS

ATTEND

TUTORIALS

**COMPLETE**

SIDEQUESTS



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**COMPLETE**

<https://powcoder.com>

**MISSION**

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**COMPLETE  
SIDEQUESTS**

WIN CONTESTS

ATTEND  
TUTORIALS

POST ON  
FORUM  
(Reflections)

**ENOUGH XP?**

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**LEVEL UP!**

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# Exams

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Finish by Friday

# Forums

<https://powcoder.com>

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## Side-quests

## Contests

## Lectures

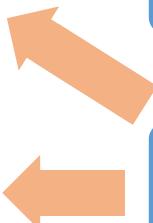
## Trainings

Assignment Project Exam Help  
Finish by Friday

## Recitations

Tutorials  
+ Trainings

## Missions



# Assessment Overview

|  |     |
|--|-----|
| Coursemology   | 25% |
| Tutorial Participation   | 5%  |
| Mid-term Exam<br><small>Assignment Project Exam Help</small><br><small>Wed, 3 Oct, 6:30 – 8:00pm</small> | 15% |
| Practical Exam<br><small>Add WeChat powcoder</small><br><small>Sat, 17 Nov, 12:00 – 6:00pm</small>       | 15% |
| Final Exam<br><small>Tue, 27 Nov, 9:00 – 11:00am</small>   | 40% |

# The Theory of Aiming

Assignment Project Exam Help

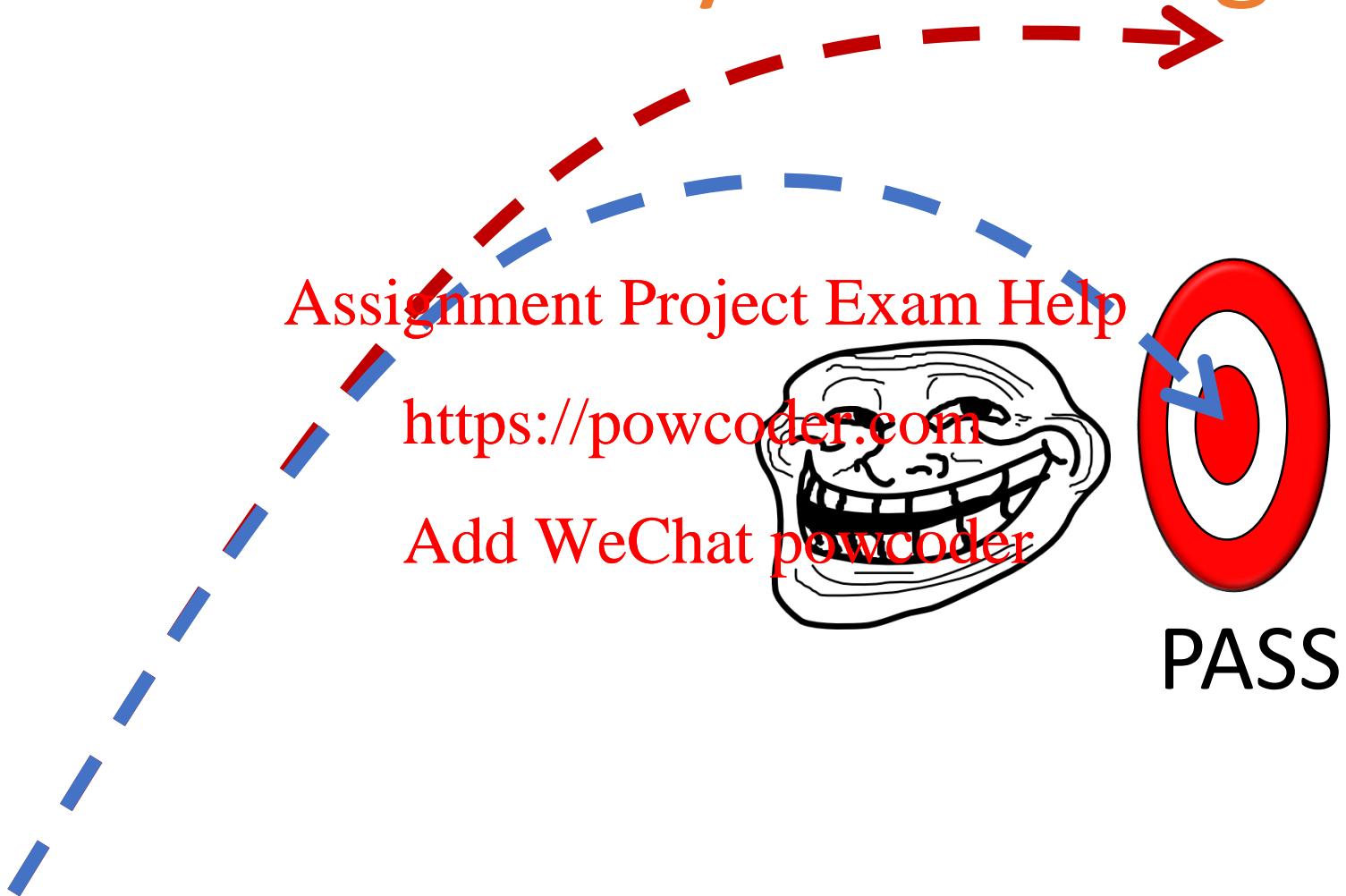
<https://powcoder.com> ➤

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PASS

# The Theory of Aiming



# Not to worry.

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# Help is always

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# available

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# Remedial

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TBA

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**Email Us**  
<https://powcoder.com>

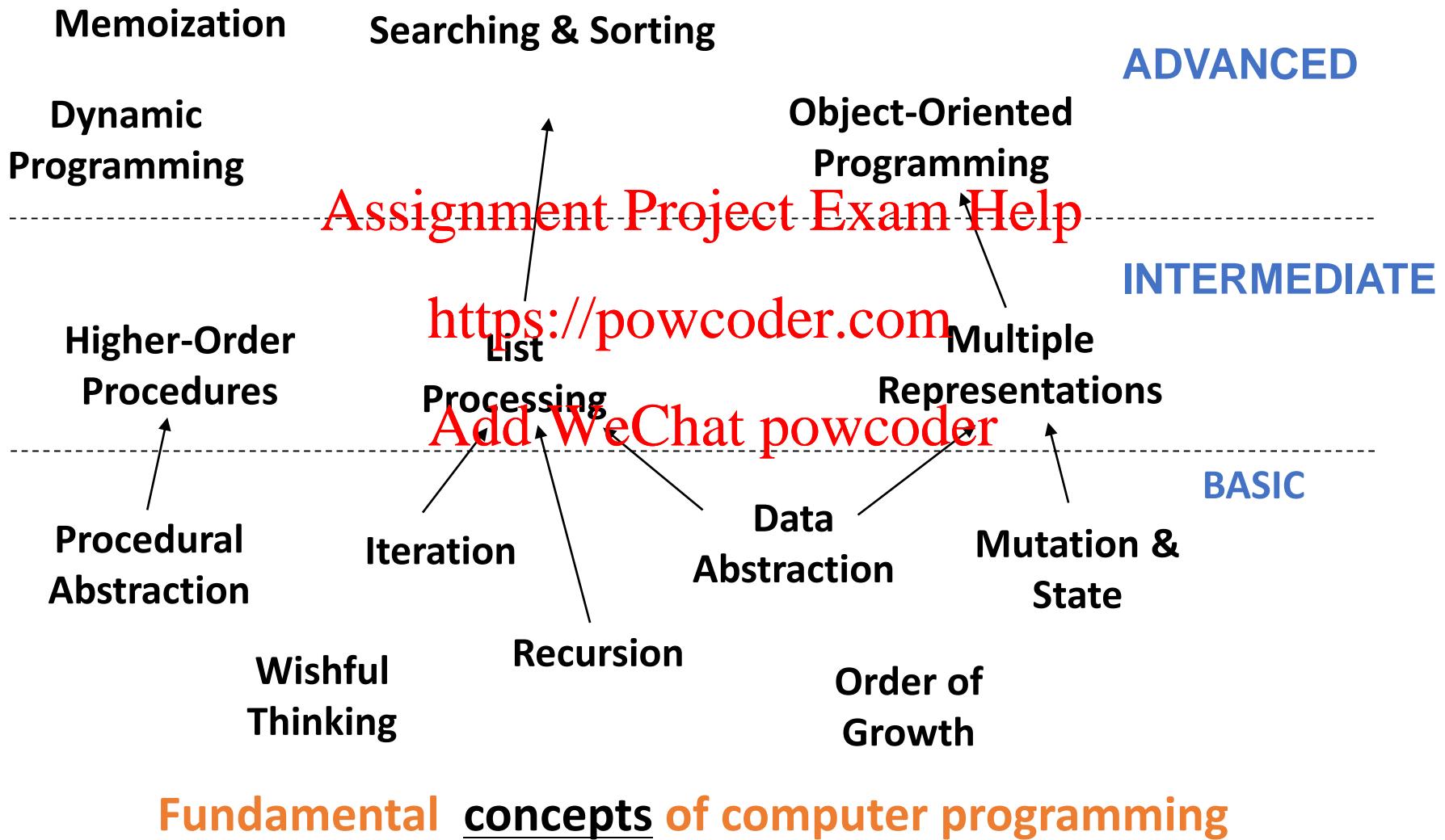
[cs1010s-staff@googlegroups.com](mailto:cs1010s-staff@googlegroups.com)  
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# Discussion Forum

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Do Subscribe  
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<https://powcoder.com>

# CS1010S Road Map



# Bust some Myths



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# Myth 1

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“Not everyone can  
learn to program”

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<https://powcoder.com>

# Myth 1

*“Not everyone can  
learn to program  
algebra”*

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# Myth 2

“I have no  
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programming  
experience. How to  
survive?”

<https://powcoder.com>

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Michael Yong

Year 2

Google Intern

USD7k a month

# Myth 3

*“I'm a girl, how can  
you expect me to  
program?”*

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# Assignment Project Exam Help

[https://powcoder.com](http://slatestarcodex.com/2017/08/07/contra-grant-on-exaggerated-differences/)

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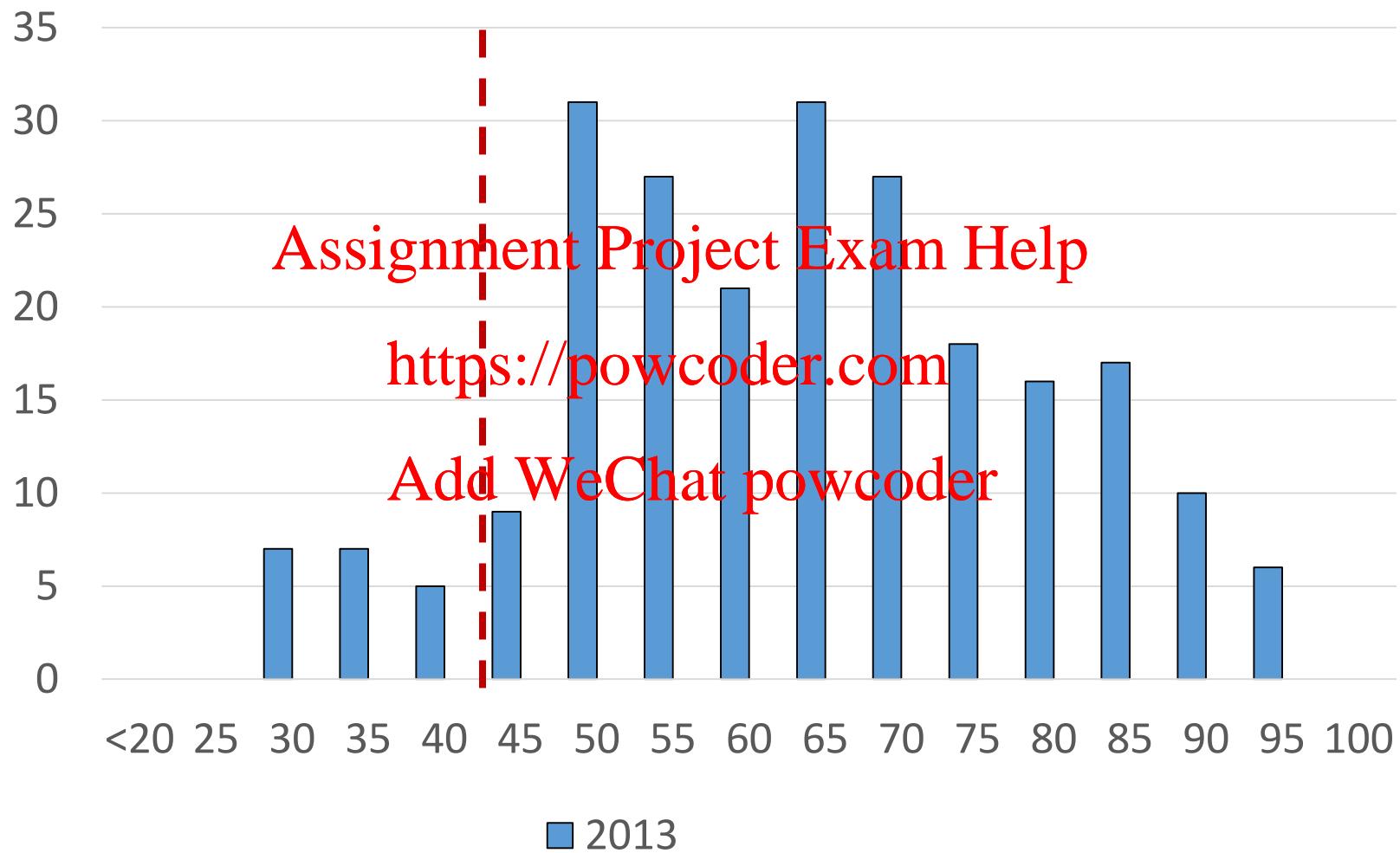
# Myth 4

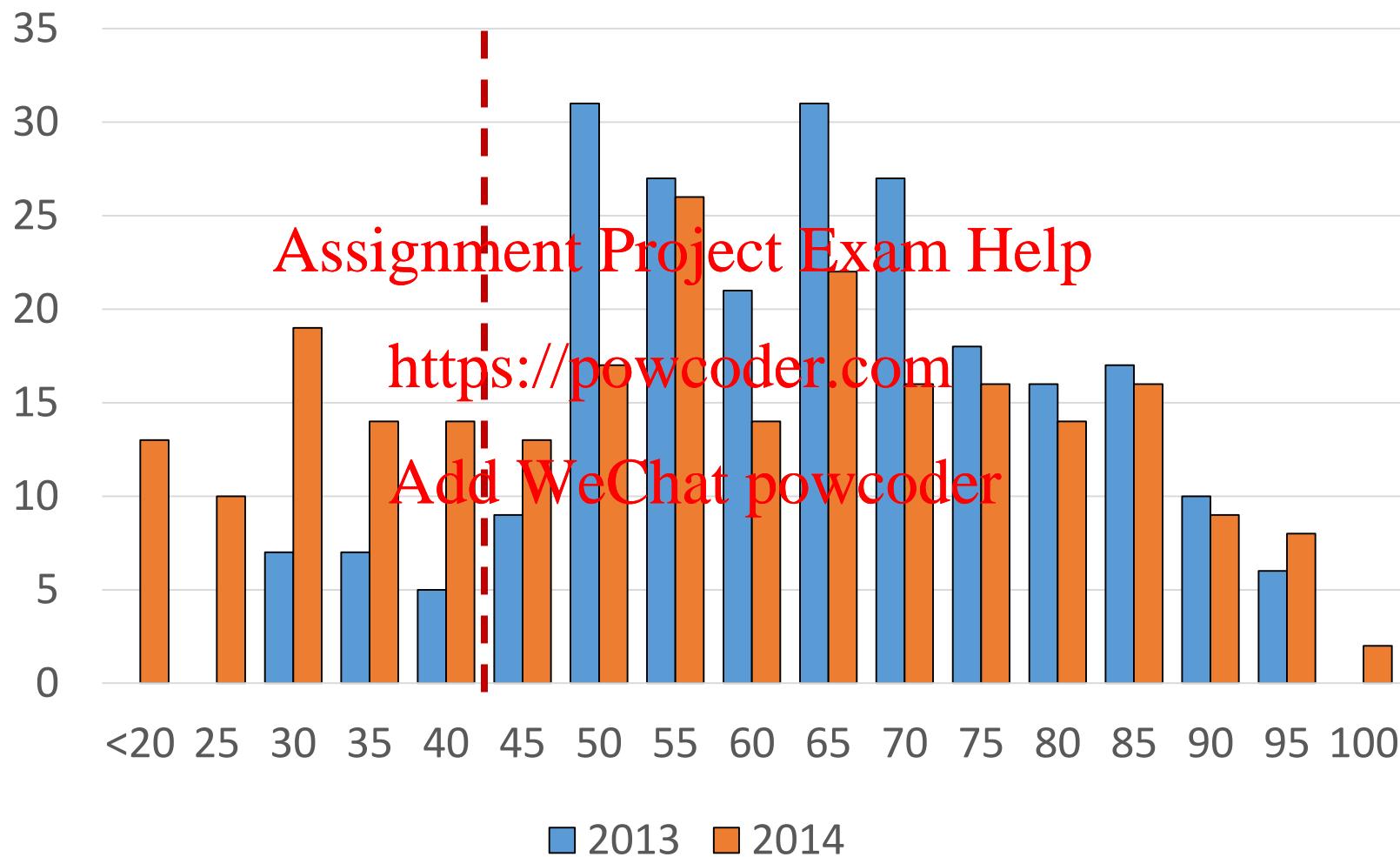
Assignment Project Exam Help

“The bell curve will  
https://powcoder.com  
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save me.”

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**Grade-less**  
<https://powcoder.com>

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# Myth 5

“No one will bother if I  
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<https://powcoder.com>  
copy my  
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friend/senior’s code.”

# Caught plagiarizing



1. Zero marks for affected Mission
2. Removal of S/U privilege

\*Seniors sharing code will be considered to be  
abetting in plagiarism

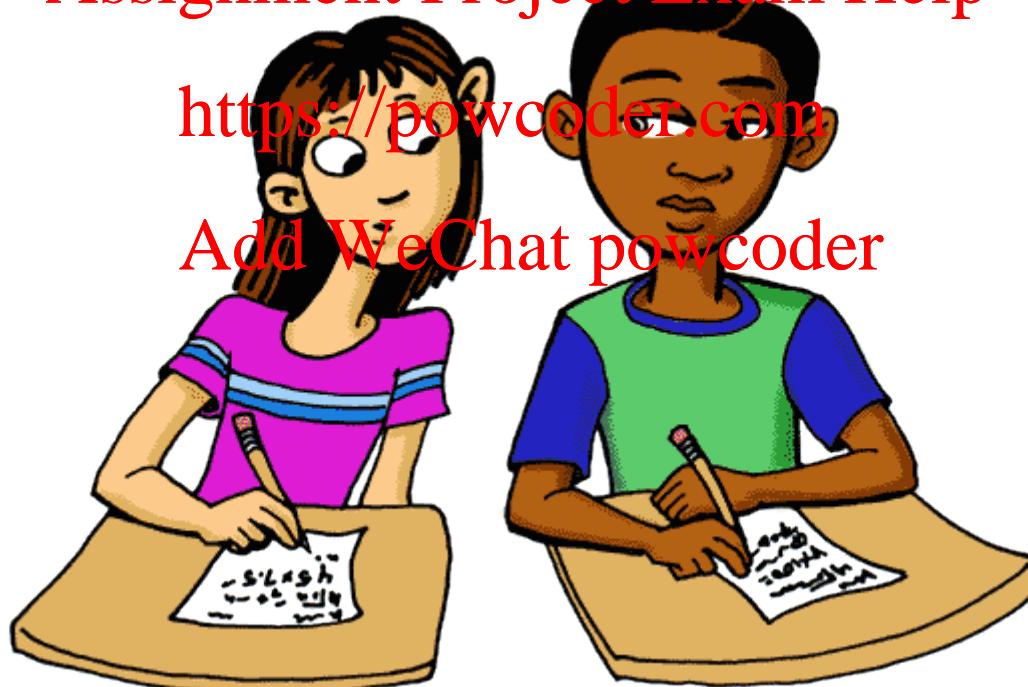
# Plagiarism

The act of presenting another's work or idea that **as your own.**

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<https://powcoder.com>

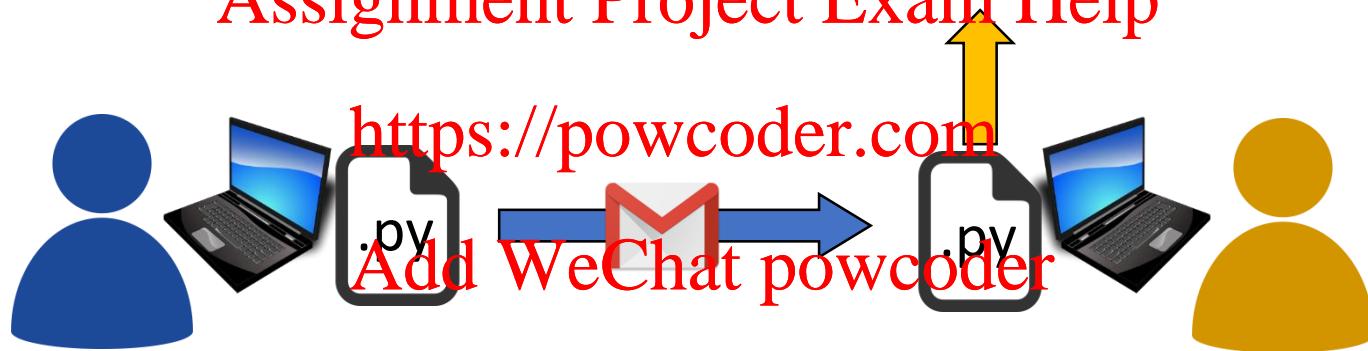
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# Plagiarism #1

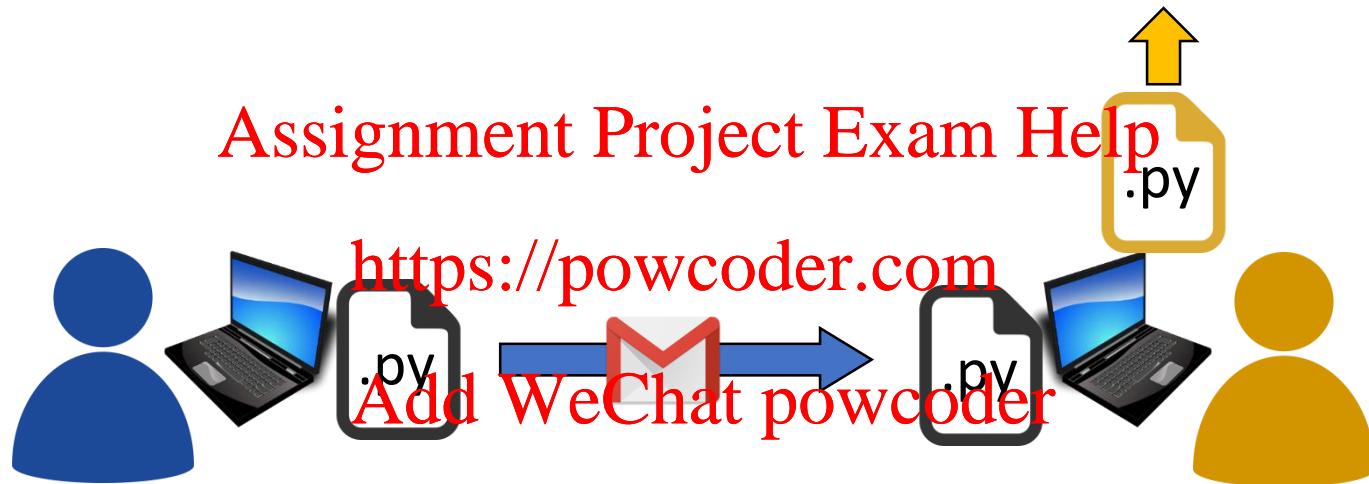
## Direct copying

Assignment Project Exam Help



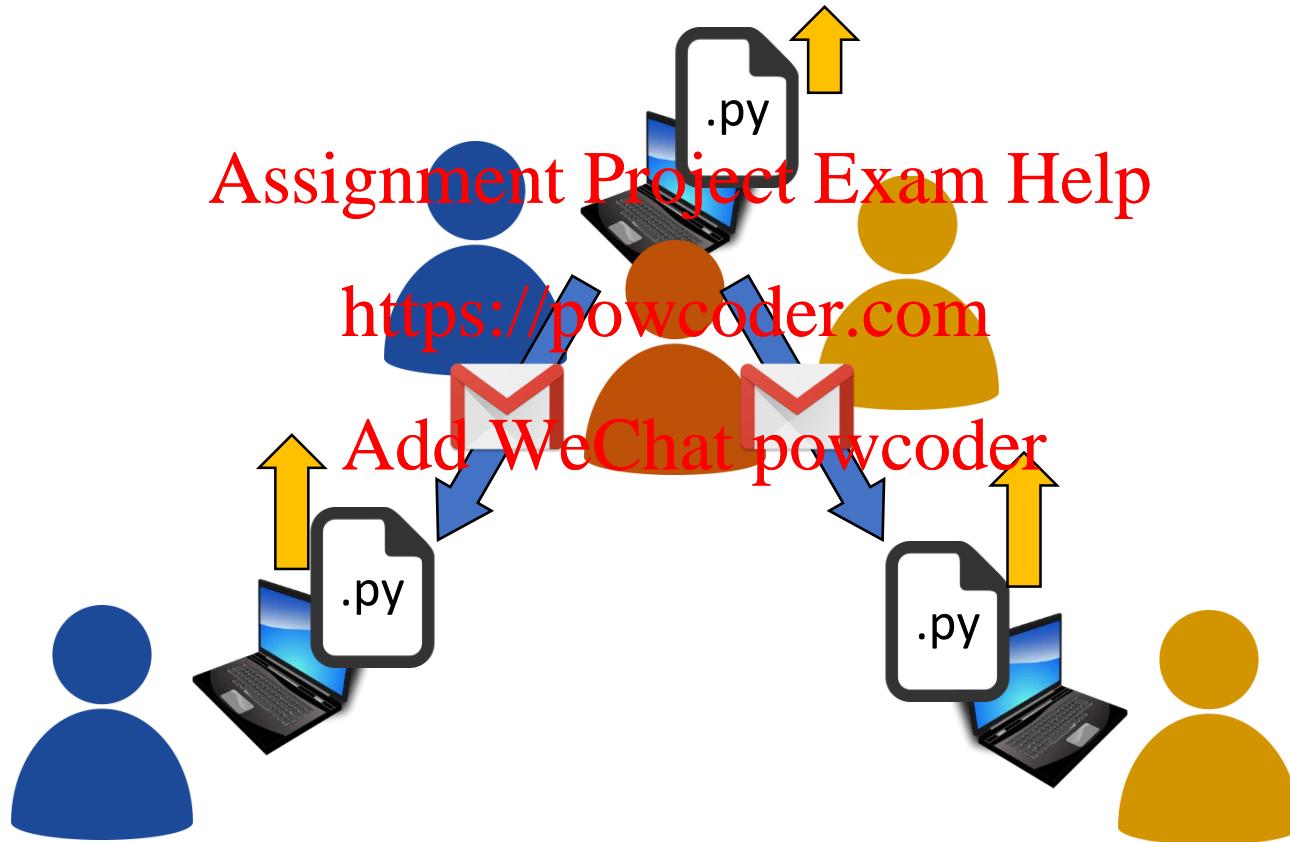
# Plagiarism #2

## “Referencing”



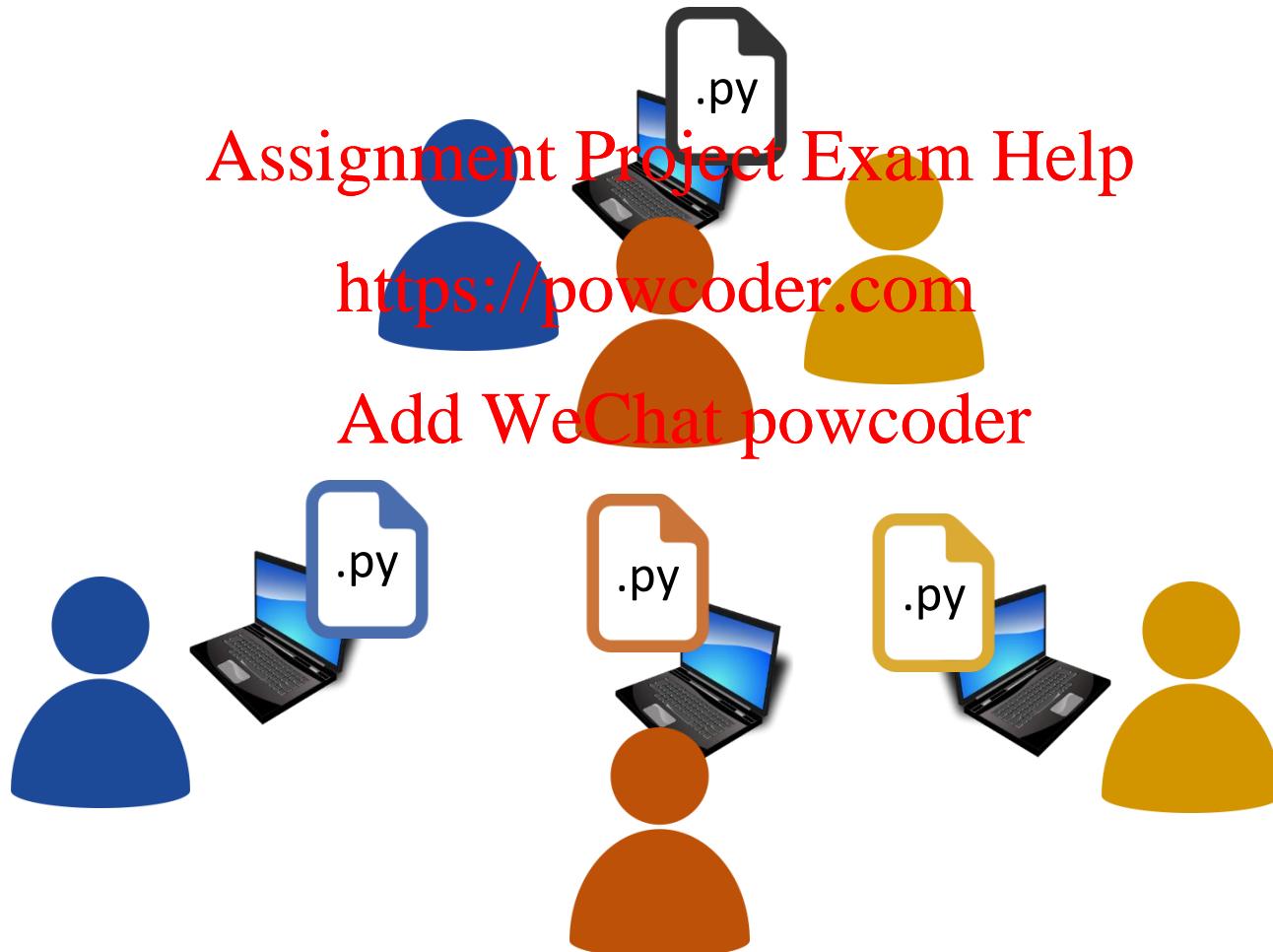
# Plagiarism #3

## “Discussion”



# Not Plagiarism

## Discussion (the proper way)



# Not Plagiarism

## Assistance



# Why should you take CS1010S

3. Because coding  
is the new literacy

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Assignment Project Exam Help

Well...not really

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<https://powcoder.com>

What<sup>Assignment Project Exam Help</sup> are we teaching you?

What<sup>https://powcoder.com</sup> are you learning?

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**Python?**  
<https://powcoder.com>

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Assignment Project Exam Help  
**Not quite:**

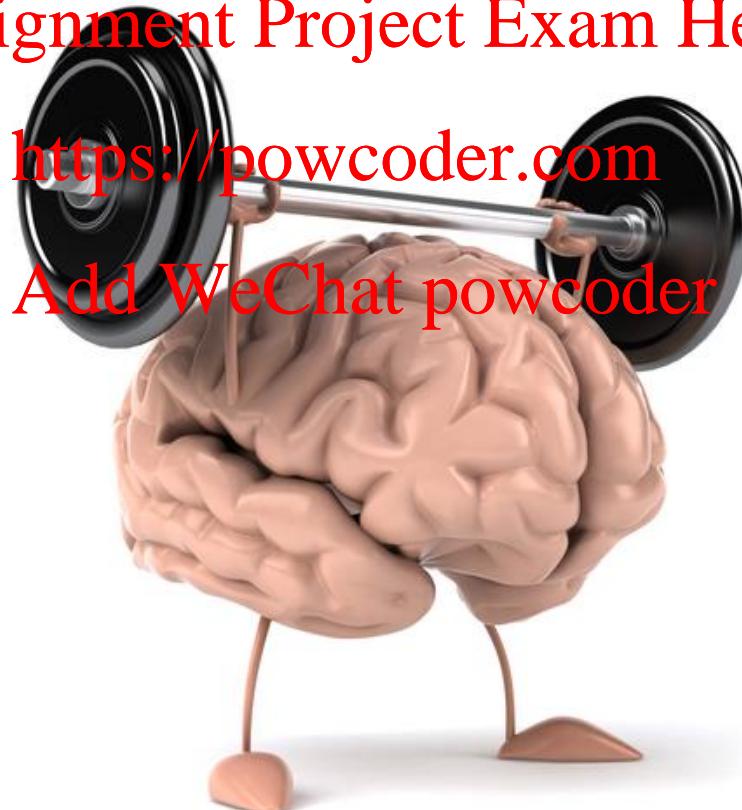
**Python is just the tool**  
<https://powcoder.com>  
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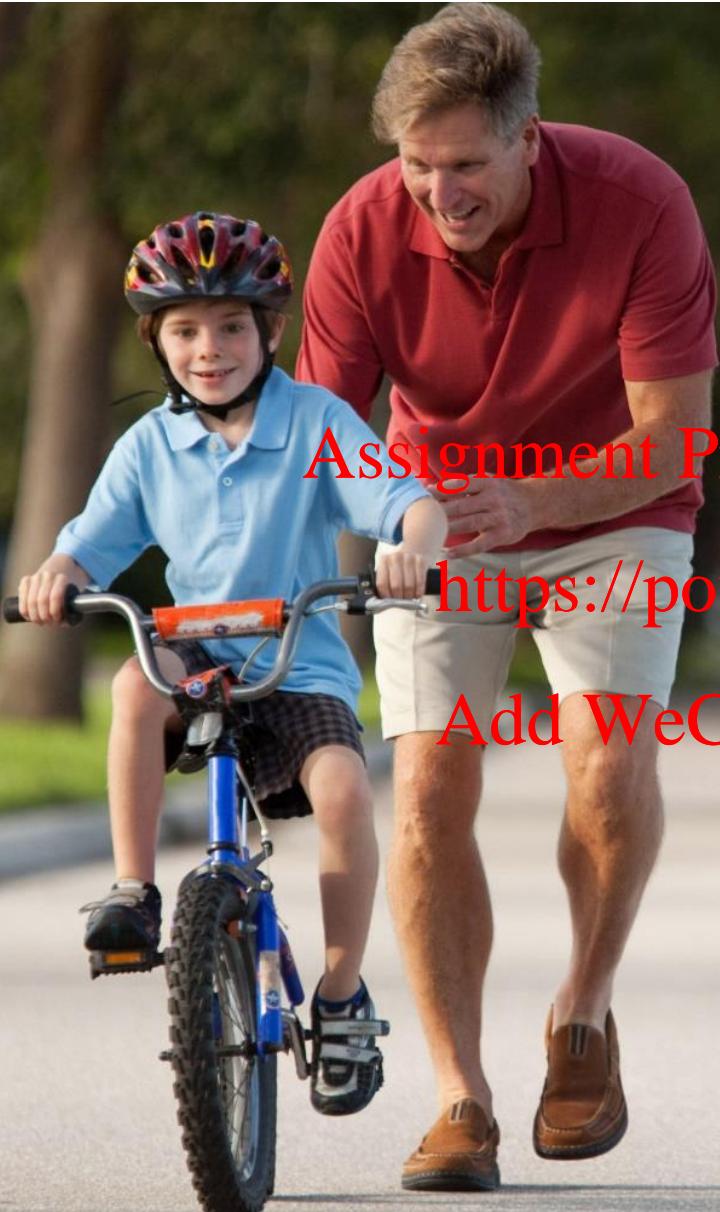
# Critical Thinking Problem Solving

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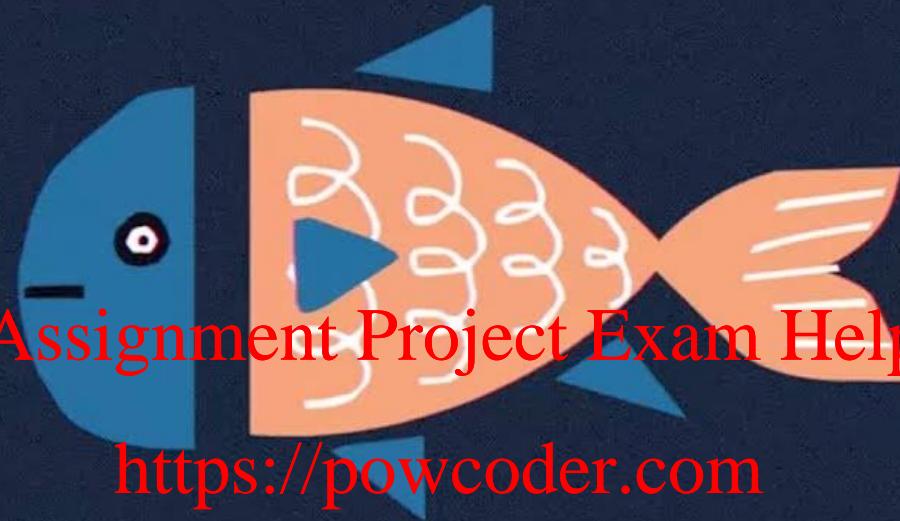
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It's the  
process that  
matters



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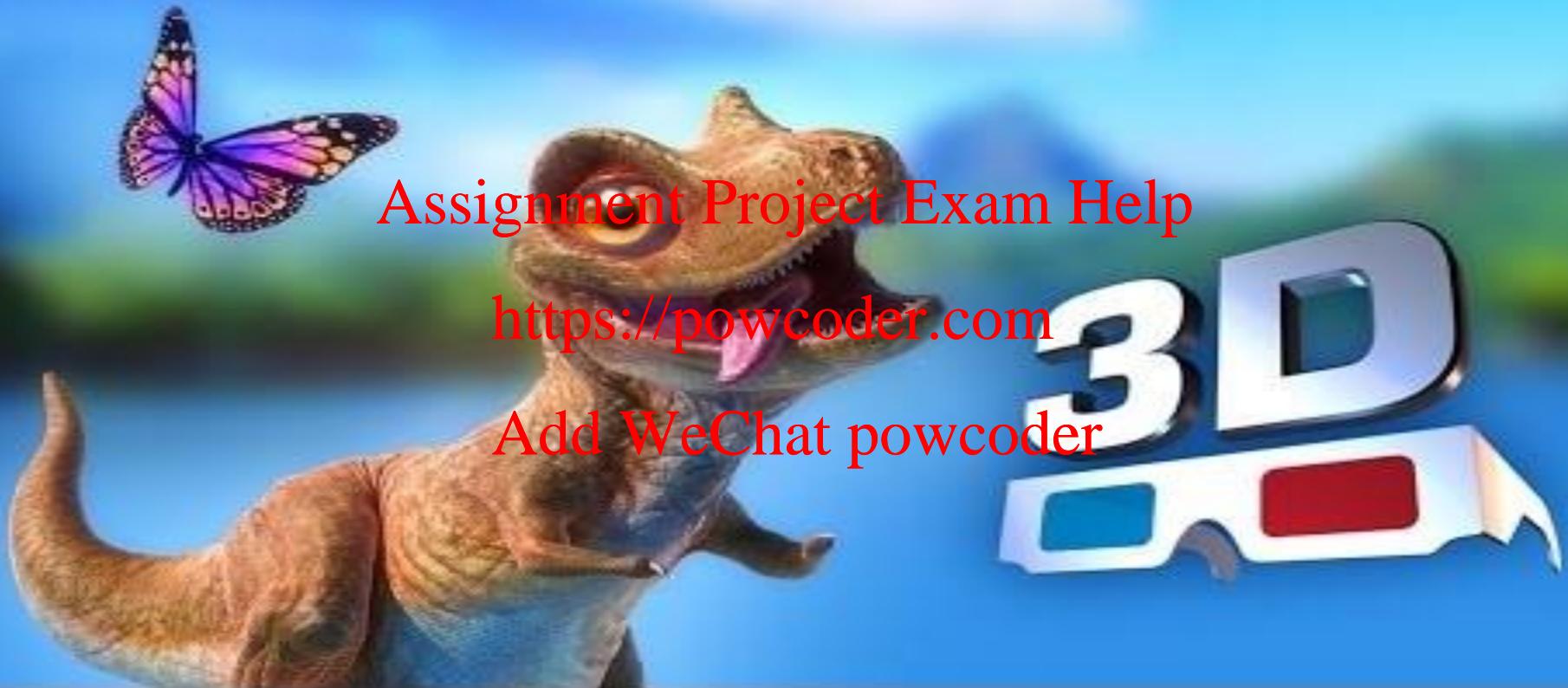
CAN YOU SOLVE  
THE FISH RIDDLE?



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# Let's hear it

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from your

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# seniors

Initially I took CS1010S to learn programming, to help me to learn R for econometrics (I'm an Econ major planning to do a thesis). But I discovered that Python actually had libraries to do data work (pandas, numpy, dask, strucutre etc.), so I actually used these libraries for my Honours level module project. I found Python much easier to use than Stata, the program that the Econ department introduced us to. Stata was just a mess (no brackets for function calls, no assignment operator, error messages don't contain helpful information (e.g. r(401) instead of, say, TypeError)).

4

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I think that programming helps me automate and speed up repetitive tasks. I was surprised how much I was able to learn these libraries to deal with data, when I haven't even completed the module.

I also think that CS1010S had helped me to secure a data analytics internship at CPF. They wanted someone who had worked with real data before and some programming background. I was able to share with them my experience

Being the block committee in my hall this year, I had to plan an event for the entire block. Me & my partner decided to recreate the popular Korean variety show, Running Man. At one stage of the game, participants have to collect items from around the room to

form a code. I blended python into the game by writing a code checker & my friends thought that it was cool to be able to use computer knowledge into daily lives.

A few of my friends were motivated & are considering to take cs1010s in one of their semesters.

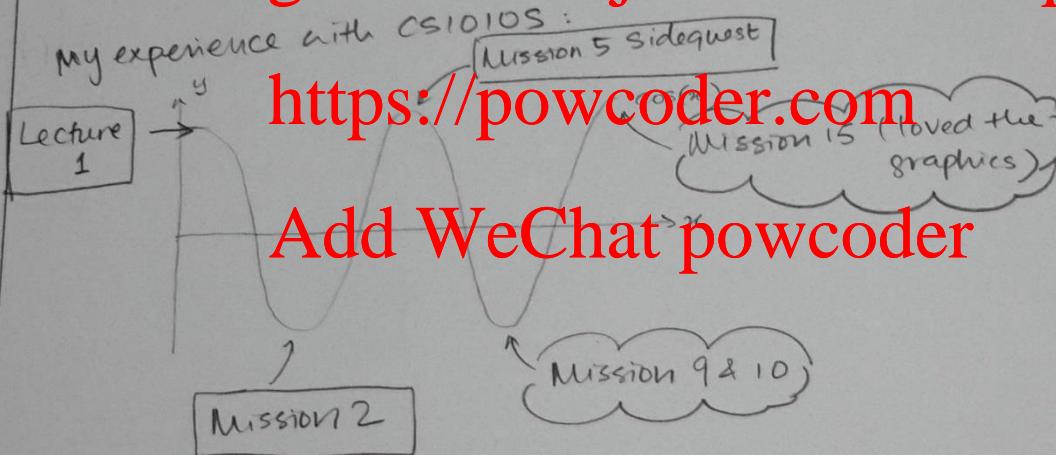
"How cool is that?"

4

If CS1010S won't get a student to learn time management, God knows what will.

That said, CS1010S is pretty fundamental to my major as Python is often used in Bioinformatics.

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Thank you all for the roller coaster ride!

(b) Not that interesting but I honestly have not been so stressed over a module. Not even during A MS have I felt this stressed. When looking at mission 2, the one on mines, I actually cried or rather teared cos I just felt that there were many things I do not handle. I jot down deadlines for the missions and I was like "what on earth". Yeah for the next few days latter = recently actually teared LOL

I cried. Cos of other stuff also I was rather depressed for a few period. But yay... now I am here taking my finals ^^. I ~~am~~ have overdone it a ~~few~~ since like... mission 4 onwards <sup>or</sup> ba. Few weeks after CNY. But cs taught me I should be consistent w/ my work! Not consistent w/ handwriting though.

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I learnt that determination is very important, it may seem like the missions and tasks are never ending, but look! It's the end! Before this module I never thought that tunnel vision would be a big problem for myself, but I really struggled at times, putting stress on classes and missions. What helped was usually taking a break and letting my mind breathe a little to get perspective

and tackle the questions again. As much as I disliked the challenge and difficulty of the module, I secretly enjoyed parts of the process, because it

really pushed me to learn more and go further than I was willing to try. Okay I have no time for the other questions, so this is A. C

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I have learnt computational thinking, of how to break down problem step by step to achieve my goals in life. I have learnt to be creative in resolving problems, to always try again and never give up. I am very good at problem solving with time you fail.

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I have also made friends during my course in CS1010S - <https://powcoder.com>

And I believe that friendship through hardship and make the  
hardships easier. **Add WeChat powcoder**

I found a partner through Mission 11. That's a story about my experience in CS101S this sem. ☺

# many paths to success

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# **HOW**

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# **to learn Python**

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(In 15 mins)

# IDLE



<http://www.python.org>

# Python 2

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# Python 3

# Python 3.7.0

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# for CS1010S

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# Why Python

- Clear and readable syntax
- Intuitive
  - Assignment Project Exam Help
- Natural expression
  - <https://powcoder.com>
- Powerful
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- Popular & Relevant

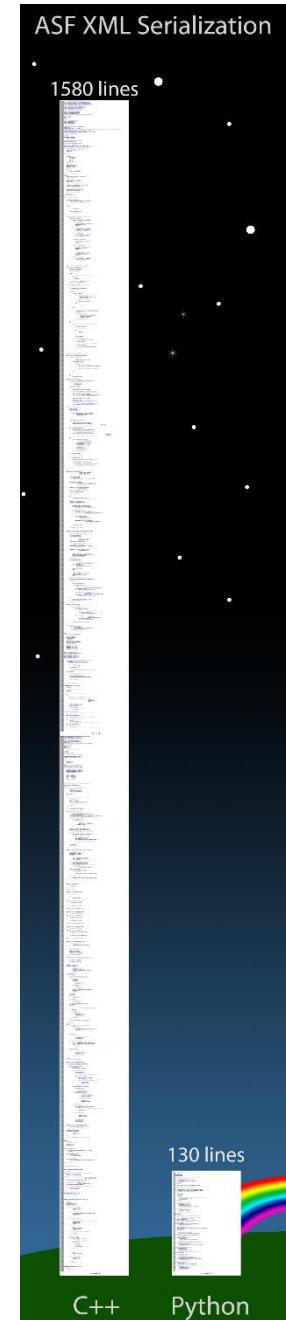
# Example: PayPal

- ASF XML Serialization
  - C++ → 1580 lines
  - Python → 130 lines

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<https://www.paypal-engineering.com/2014/12/10/10-myths-of-enterprise-python>

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**Simplicity**  
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# Futile to Teach

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# a Language

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Here today, gone tomorrow

# Computational Thinking

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# What is a program?

- A sequence of instructions
- That modifies some state (of the computer)

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# What is a program?

Example:

1. Pick up the crate
2. Move 5 meters
3. Turn right
4. Move 5 meters
5. Put down the crate

What is the state  
being modified?



# Python program

```
a = 1
b = 2
c = a +bAssignment Project Exam Help
if c < 0: https://powcoder.com
    print('Yes')Add WeChat powcoder
else:
    print('No')
```

# Solve problems

- Suppose you have to program an oven to bake bread

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# Idea

- Bake at 375°F for 30-35 minutes or until golden brown and bread sounds hollow when tapped.

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# Implementation?

1. Start timer
2. Measure temperature
3. If temp < 375° F then turn on heating element <https://powcoder.com>
4. If temp > 375° F then turn off heating element
5. If timer < 35 mins go back to step 2

From  
IDEA

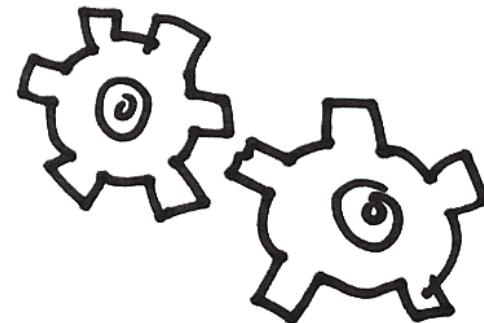


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IMPLEMENTATION



# Elements of Assignment Project Exam Help Programming

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# 1. Primitives

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- Numbers:

**4 , 7/2 , 428.3**

- Operators:

**+ , - , \* , /**

- Symbols:

**a , pi , foo**

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# 2. Means of Assignment Project Exam Help

# Combination

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5 + 3 8

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( (5 + 3) - (2 \* 3) ) 2

# 3 Means of Assignment Project Exam Help

# Abstraction

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$$7 + 6 = 13$$

a = 3  
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<https://powcoder.com>

a + 6 = 9  
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# 4. Controlling Logic

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If the light is red,  
stop.

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Else if it is amber,

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accelerate

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Else,  
proceed with caution.



While you are hungry,  
eat a spoonful of rice.  
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Burp.

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# Variables

- Start with 'a'-'z' or 'A'-'Z' or '\_'
- Contain only alphanumeric  
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characters or ''  
<https://powcoder.com>
- Case sensitive  
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Ian\_Lee != ian\_lee

# Variables

- Avoid reserved keywords e.g. `if`
- Python convention: lower case letters separated by `_`
  - e.g. `count_change`
- Store memory addresses

# Types

int 8 45 1234

float 2.3 3.14159

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bool True False

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str "cs1010s"

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' cs1010s '

None

# Type(...)

```
>>> type(123)
```

```
<class 'int'>
```

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```
>>> type(https://powcoder.com)
```

```
<class 'str'>Add WeChat powcoder
```

```
>>> type(None)
```

```
<class 'None'>
```

# Type conversion

```
>>> str(123)  
'123'
```

```
>>> float('45.2')  
45.2
```

```
>>> int(23.8)  
23
```

```
>>> int('cs1010s')  
ValueError!
```

# Assignment

```
>>> abc = 18  
>>> my_string = 'This is my string'  
>>> x, y = 1, 2
```

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| variable  | address |                                 |
|-----------|---------|---------------------------------|
| abc       | id1     | id1: int<br>18                  |
| my_string | id2     | id2: str<br>"This is my string" |
| x         | id3     | id3: int<br>1                   |
| y         | id4     | id4: int<br>2                   |

# Operators

Arithmetic: + - \* / \*\* // %

```
>>> a = 2 * 3
```

```
>>> a
```

6

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```
>>> 2 ** 3
```

8

# Operators

Arithmetic: + - \* / \*\* // %

```
>>> 11 / 3
```

3.666666666666665

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```
>>> 11 // 3
```

3

```
>>> 11 % 3
```

2

# Truth Values

Statements can be either true or  
false

$2 > 1$  is true

$5 < 3$  is false

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# Operators

Comparison: > >= < <= == !=

```
>>> 1 <= 10
```

True Assignment Project Exam Help

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```
>>> 5 > 15
```

False Add WeChat powcoder

```
>>> 5 <= 5
```

True

# Operators

Comparison: > >= < <= == !=

```
>>> 2 != 3
```

True Assignment Project Exam Help

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```
>>> '1' == 1
```

False Add WeChat powcoder

```
>>> False == False
```

True

# Operators

Logic: or and not

>>> True or False

True Assignment Project Exam Help

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>>> True and False

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False

>>> not False

True

# Operators

Logic: or and not

a or b      True if either a or b is  
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True

a and b      True if both a and b are  
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True

not a      True if a is not True

# Truth Tables

| OR    | True | False |
|-------|------|-------|
| True  | True | True  |
| False | True | False |

| AND   | True  | False |
|-------|-------|-------|
| True  | True  | False |
| False | False | False |

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| NOT   |       |
|-------|-------|
| True  | False |
| False | True  |

# Truth Value Revisted

- Python has keywords `True` and `False`
- In Python 3.x, `True` and `False` will be equal to `1` and `0`
- Anything that is not `0` or empty will be evaluated as `True`

# Operators

Logic: or and not

```
>>> True and 0
```

```
0
```

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```
>>> not 'abc'
```

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False

```
>>> 1 or 0
```

1

# Strings

```
>>> s = 'ba'                                >>> 'z' in t
>>> t = 'ck'                                 False
>>> s + t                                     Assignment Project Exam Help
'back'                                         >>> 'banana' > t
                                                True
>>> t = s + 'na'*2                           Add WeChat powcoder
>>> t                                         >>> 'banana' <= t
                                                True
'banana'                                       >>> 'c' < t
                                                False
```

# String Slicing

- A String is a sequence of characters
- We can index a string, i.e.

```
>>> s = 'abcd'
```

```
>>> s[0]  
'a'
```

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```
>>> s[2]  
'c'
```

- First character is 0

# String Slicing

`s[start:stop:step]`



```
>>> s = Assignment Project Exam Help
>>> s[0:2] https://powcoder.com
'ab'
>>> s[1:5:3]
'be'
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>>> s[::-2]
'ace'
>>> s[:2]
'ab'
```

# Conditional

```
if <expr>:  
    statement(s)
```

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e.g. <https://powcoder.com>

```
>>> a = 3  
>>> if a > 0:  
    print('Good')  
    indentation
```

'Good'

# Conditional

```
if <expr>:          e.g.  
    statement(s)  >>> a = 3  
else:   Assignment Project Exam Help 0:  
    statement(s)  
https://powcoder.com print('yes')  
        else:  
        Add WeChat powcoder  
                print('no')  
  
'yes'
```

# Conditional

if <expr>:

e.g.

    statement(s)

>>> a = -3

elif <expr>:

    statements(s)

>>> if a > 0:

        print('yes')

else:

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    statement(s)

elif a == 0:

        print('no')

else:

        print('huh')

'huh'

# Conditional

`if <expr>:`

e.g.

    statement(s)

`>>> a = 4`

`elif <expr>:`

    statements(s)

`>>> if a > 0:`

`print('yes')`

`elif <expr>:`

    statements(s)

`print('no')`

`else:`

    statement(s)

`else:`

`print('huh')`

`'yes'`

# Conditional

```
while <expr>:  
    statement(s)
```

```
>>> a = 0  
>>> while a < 5:
```

Assignment Project Exam Help a = a + 1

<https://powcoder.com> print(a)

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1

2

3

4

5

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# Python

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in 15 mins

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Am I now a  
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programmer?

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What does it  
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take to be a  
<https://powcoder.com>  
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programmer?

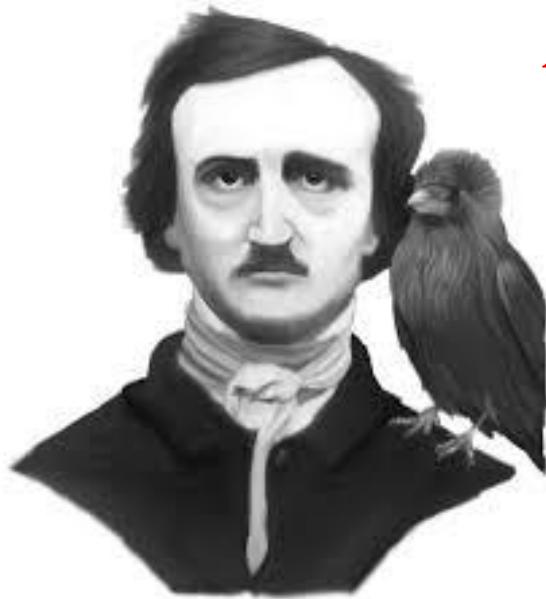
# Do you know

1. your “ABC”?
2. how to form words?  
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3. how to write sentences?  
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If you answered YES to all,  
surely you must be a poet

What does it  
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take to be a  
<https://powcoder.com>  
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poet?



What does it  
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take to be a  
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programmer?

# To be programmer

1. Know the elements of programming
2. Know the grammar of programs
3. Able to read and understand programs
4. Must write working programs

This step is  
not trivial



# Learning Outcomes

At the end of the course, you should be able to:

- describe the output of a basic program [Assignment Project Exam Help](https://powcoder.com) <https://powcoder.com>
- write a basic program to solve a given problem [Add WeChat powcoder](#)

# Practice

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# Practice

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# Practice

# Learning

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# how to

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# Learn

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# Feeling Overwhelmed?

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**Questions?**  
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## Ways to earn XP

Survey

+100 XP

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before 21 Aug

Training

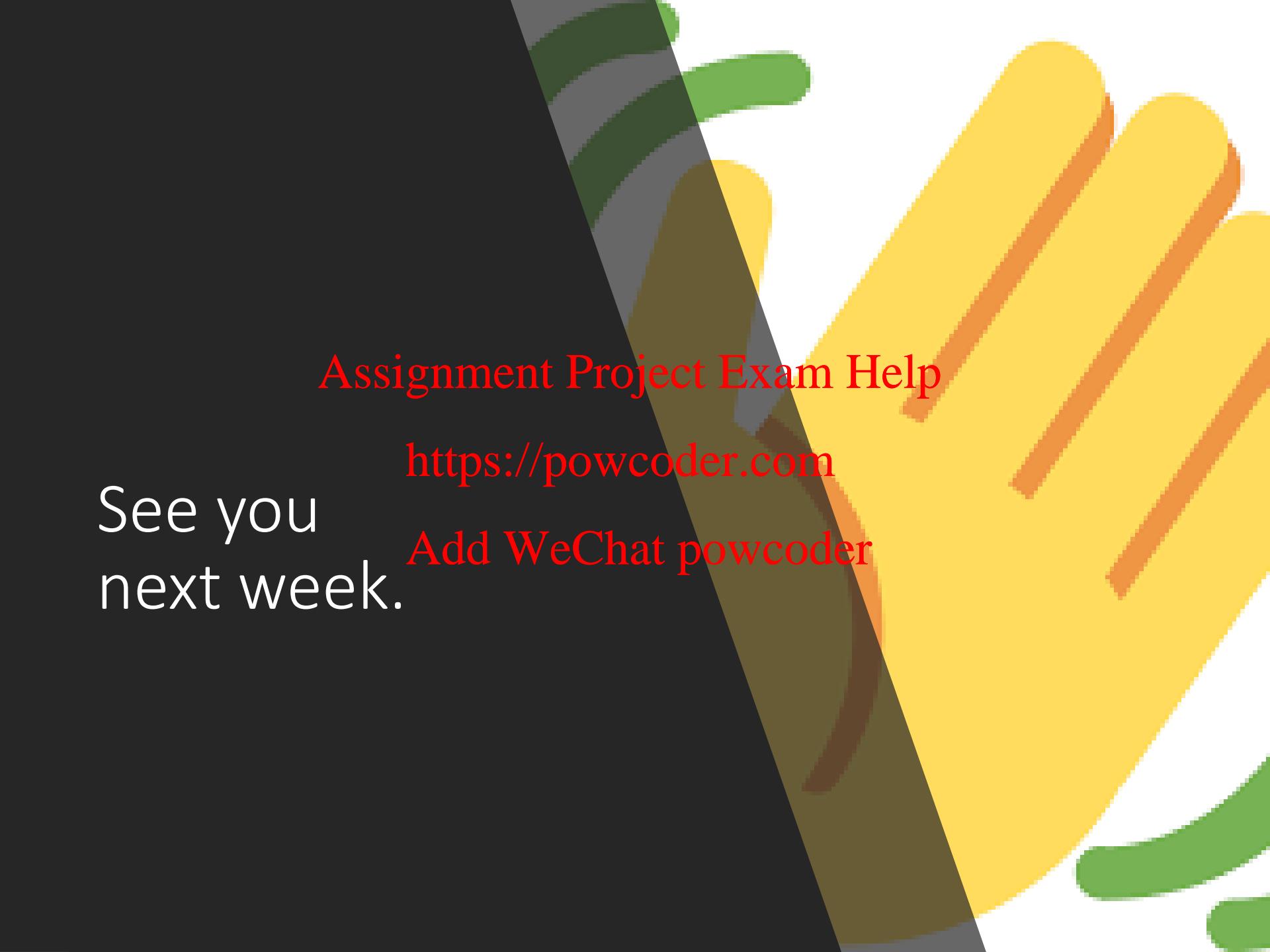
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+100 XP

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By Friday

+ 50 XP

otherwise



See you  
next week.

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