CODE FIRST GIRLS

CFGDEGREE

FOUNDATION ASSESSMENT II MATERIAL RELEASE

THEORY QUESTIONS

Theory Questions 31

Concept Questions 19

Python Challenge 25

SQL Challenge 25

TOTAL 100

Important notes:

- This document shares the first section of the Foundation Assessment II which is composed of 9 Theory Questions
- It is worth just under a third of your assessment mark
- You have 24 hours before the assessment to prepare.
- If any plagiarism is found in how you choose to answer a question you will receive a 0 and the instance will be recorded. Consequences will occur if this is a repeated offence. You can remind yourself of the plagiarism policy here.

Section 1: Theory Questions [31 marks]

1.1 What does SDLC stand for? **ANS:** SOFTWARE DEVELOPMENT LIFECYCLE	**1 mark**

1.2 What exception is thrown when you divide a number by 0? **ANS:** ZeroDivisionError	**1 mark**

1.3 What is the git command that moves code from the local repository to the remote repository? **ANS:** git push	**1 mark**

1.4 What does NULL represent in a database? **ANS:** Doesn't exist	**1 mark**

1.5 Name 2 responsibilities of the Scrum Master **ANS:** Standups - Facilitate daily standups as needed; Retrospectives - identify areas for improvement and action items for future sprints (ATLASSIAN, 2023)	**2 marks**

1.6 Name 2 debugging methods, and when you would use them. **ANS:** Logging: by logging important events, such as errors and exceptions, you are able to create a trail of information that can help you understand what went wrong and why. E.g. When troubleshooting issues that occur over time; Breakpoints: debugger stops at the breakpoint allowing you to examine the values of variables, step through your code line by line, and even change through the variables.M (Mirza, A 2023	**4 marks**

1.7 Looking at the following code, describe a case where this function would throw an error when called. Describe this case and talk about what exception handling you'll need.

5 marks

```
def can_pay(price, cash_given):
    if cash_given >= price:
        return True
    else:
        return False
```

ANS: It is a calculation to determine if the customer is able to pay, using Boolean, meaning a true or false is displayed in the output. The exception handling would involve a Value if the cash given is less than the price of the item(s). As this program would possibly involve an input from the end user, if the value(s) inputted in the price or cash given parameter is not a numeric value, this would result in a 'TypeError'. We could also implement error checking and validation in the function to ensure that the parameters are valid before executing the code
.E.g. try:
price = float(price); cash_given = float (cash_given)

1.8 What is git branching? Explain how it is used in Git.

6 marks

Git branching is used to encapsulate your changes. It allows you to diverge from the 'main'/'master' line of development and continue to do the work without disrupting the main line. A branch is Git is a lightweight moveable pointer to one of these commits. The default branch is master, and the master branch points to the last commit you made. New commits are recorded in the history for the current branch, which results in a fork in the history of the project. The git branch command lets you create, list, rename, and delete branches.

1.9 Design a restaurant ordering system. You do not need to write code, but describe a high-level approach: a. Draw a list of key requirements b. What are your main considerations and problems? c. What components or tools would you potentially use? **ANS:** Key requirements: a system that stores menus, a front end page that allows customers to place orders, payment processing gateway that is secure, customer managing tools, staff managing tools, i.e rota, analytics. Consideration: Database Program has to account to missing, broken or lost inventory i.e, order going missing, wrong orders etc. security, we have to ensure site is safe enough for customers, one way to ensure that is great UX/UI, customers are more likely to be skeptical if the site doesn't look legitimate. Potential component and Tools: SQL for the customer databases, accounts, and staff and menu items; HTML CSS and JavaScript for the site that allows users to order; APIs to access payment gateways such as Paypal, ApplePay, GooglePay; Power BI/Excel for reporting analytics.(ATLASSIAN, 2023)	**10 marks**