Tutorial 4: Arcade Menu

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# Specification

Develop a simple command line menu for an arcade game.

# Technical design

This is the pseudocode for the arcade game menu, it can handle user inputs, balance, and game fees:

controlGameApplication

**local option, balance**

call payInitialFee**(balance)**

call enterOption**(option)**

while (not(option = 'Q') and (balance>0))

call processOption**(option, balance)**

call enterOption**(option)**

endwhile

output("Thanks for playing")

call showBalance(balance)

proc payInitialFee**(OUT: balance)**

set balance to 100

endproc

proc enterOption**(OUT: option)**

output("Enter option (P:play or B:balance or Q: quit> ")

input(option)

call putInUppercase(**option)**

endproc

proc putInUppercase(**IN/OUT: option)**

set option to uppercase(option)

endproc

proc processOption**(IN: option, IN/OUT: balance)**

if(option = 'P') then

call playGame**(balance)**

else

if(option = 'B') then

call showBalance**(balance)**

else

output(“ERROR: Invalid Command!”)

endif

endif

endproc

proc playGame**(IN/OUT: balance)**

output(“Playing...”)

set balance to balance – 20

//...

endproc

proc showBalance**(IN: balance)**

output(“The current balance is £”, balance)

endproc

A flowchart diagram of the main loop:

Start

call payInitialFee

call enterOption(option)

option ≠Q and balance > 0

True False

call processOption(option, balance)

output("Thanks for playing")

call enterOption(option)

call showBalance(balance)

End

# Test plan

Here is a table of test results, the contents are my expected and actual results just after the program has first been opened to check that the logic works.

|  |  |  |
| --- | --- | --- |
| Input/Scenario | Expected Output | Actual Output |
| Opening the program | “Enter option (P:play or B:balance or Q:quit> " | “Enter option (P:play or B:balance or Q:quit> " |
| “P” or “p” during enterOption | “Playing…” | “Playing…” |
| “B” or “b” during enterOption | “The current balance is £100” | “The current balance is £100” |
| 3 plays, followed by displayBalance | “The current balance is £40” | “The current balance is £40” |
| “Q” or “q” during enterOption | Program closes | Program closes |
| Any other input during enterOption | “ERROR: Invalid Command!” | “ERROR: Invalid Command!” |

# Schedule

Estimated and actual amount of hours spent on each part of the program:

* Spec: Estimated 0.25, Actual 0.25
* Design: Estimated 0.25, Actual 0.5
* Implement: Estimated 0.5, Actual 0.25
* Debug and test: Estimated 0.25, Actual 0.25
* Slack: Estimated 0.25, Actual 0
* Total: Estimated 1.5, Actual 1.25

This was done within my estimated time limit, overall I’m very happy with the outcome.