2019

CPEN 523

ASSIGNMENT 2

NISHTHA CHAWLA, 17788647

Part 1: Prioritization

Values under column A and B list the effort to deliver the feature as described for the corresponding use-case. Column X and Y list the features that can be delivered in a budget of 80 and 70 person-days respectively. The features that have been taken away have been marked in red and crossed out.

#	Actor	Name	Description	UV	Effort	A	X	B	Y
UC1	Partner	Display current asset and history of contribution	For a partner, display current ownership, and history of contributions with level of ownership over time	1	4 (ownership)	4	✓	4	✓
					+3 (history)	3	✓	N.A	×
UC2	Partner	Display current ownership	Show on a table the list of partners, and their current level (%) of ownership	1	5	5	✓	N.A	×
UC3	Partner	Display current portfolio	Show the current composition of the portfolio, including the cash component	1	5	5	✓	5	✓
UC4	Partner	Display net unit value history	Show with table and graph the evolution of the investment club net unit value	1	3 (table)	3	✓	3	✓
					+5 (graph)	N. A	×	N.A	×
UC5	Treasurer	Enter partner contributions	How much cash are the partners contributing in the current cycle (period)	2	3	3	✓	3	✓
UC6	Treasurer	Close cycle	Recompute the value of the unit, based on contributions, withdrawals, portfolio value, and revenues	1	8	N.A	×	N.A	×
UC7	Treasurer	Admit new partner	Add a new partner on the roster	2	2	2	✓	2	✓
UC8	Treasurer	Remove a departing partner	Liquidate the share of a partner	3	3	3	✓	3	✓
UC9	Treasurer	Enter income and expenses	Based on monthly brokerage statement, enter interests, capital gains, dividends, and financial charges	2	3	3	✓	3	✓
UC10	Trader	Enter trades	Add and remove entries in the portfolio of securities as decided by the club	2	4	4	✓	4	✓
UC11	Trader	Enter securities value	Manually enter securities value (and exchange rates)	2	2	2	✓	2	✓
UC12	System	Compute portfolio valuation	Everyday, the system computes automatically the value of the securities part of the portfolio, using online services	2	9	N.A	×	N.A	×
UC13	Treasurer	Produce taxation data	For a fiscal year, generate data to fulfill personal tax filing, such as T5 slips in Canada	2	12 (data)	12	✓	12	✓
					+2 (slip)	2	✓	N.A	×
UC14	Partner	Access taxation data	After UC13, individuals can access their own data for tax filing purposes	2	1	1	✓	1	✓
UC15	Admin	Install and set up	Create the server and the database	3	5 (manually)	5	✓	5	✓
					+ 4 (script)	4	✓	4	✓
UC16	Admin	Maintain user and role	Create, maintain, delete: user login, password, and assign roles	3	6	6	✓	6	✓
UC17	All	Login/logout/time-out	Abstract use case that wraps all others	3	4 (login/out)	4	✓	4	✓
					+ 1 (time out)	1	✓	1	✓
UC18	Admin	Backup	Backup and restore all data	3	3	3	✓	3	✓
UC19	Admin	Configure	Personalize the site (name, logo etc)	2	4	4	✓	4	✓
					EFFORT	79		69	
					VALUE	35		34	

ASSUMPTIONS:

- UC 6 and UC 12 have not been delivered due to less UV and high effort.
- Complete perceived value is taken into account even when the optional part of a feature is not implemented. (UC1, UC4, UC 13)

Part 2: Tracking Progress

1) Earned Value

a) **BCWS (Budgeted Cost of Work Scheduled or Baseline Earned Value)** – Approved/allocated budget to complete scheduled task within a given time.
ACWP (Actual Cost of Work Performed) – Actual cost which has been spent (instead of the budgeted mentioned in BCWS).
BCWP (Budged Cost of Work Performed or Proper Earned Value) – The budgeted cost of work which has actually been performed/earned within a given time.

total Schedule cookies/ hr	total actual cookies at 1 hr	total no. of hours **SAC**	cost per cookie in $	Schedule Total cost in $ **(A)**	SCHEDULE cost/hr **(BCWS) $**	% OF WORK OF DONE at one hr **(B)**	**BCWP** in $ **A * B**	**ACWP** (actual cost) $
200	150	5	0.05	50	10	15.00%	7.5	9
						(Earned cookies (150)/scheduled no of cookies (1000))	(total cost schedule * % of work done)	

b)

SV in $ (BCWP-BCWS)	CV in $ (BCWP-ACWP)	SPI (BCWP/BCWS)	CPI (BCWP/ACWP)
-2.5	-1.5	0.75	0.833

- The schedule variance indicates we are behind schedule and are short $2.50 in cookies.
- The SPI value of 0.750 indicates ratio of earned over planned value and 75% cost has been earned against budgeted cost.
- The -$1.50 Cost Variance indicates the manager is currently $1.50 over budget
- CPI value of 0.833 indicates we are currently only making 0.833 cookies per the cost of what should be a whole cookie (we are running a deficit for every cookie made).

c)

EAC = BAC/CPI
EAC = 50.00/0.8333
EAC = $60.00

VAC = Budget-Actual Expenditure
VAC = $50.00 - $60.00
VAC = -$10.00

SAC = 5 Hours
TEAC= SAC/SPI
TEAC= 5/0.75
TEAC= 6.67

TVAC = SAC – TEAC
TVAC= 5-6.67
TVAC= -1.67 hrs

2) When and how much?

	Iteration1	Iteration2	Iteration3	Iteration4	total
STORY-POINTS COMPELTED (Earned Value)	16	18	24	20	78
Schedule	20	20	20	20	80
Effort spent(person-days)	19	20	23	21	83

a)

SPI= Earned work (summation of iteration 1 to 4) /schedule work (20 story line per week*4)
SPI= 78/80
SPI=0.975
TEAC= SAC/SPI
TEAC= 20/0.975
TEAC=20.51 weeks time taken for completion
We will be done in 20.51 weeks and it will cost us approximately 213 person-days. (explained in part **d)**

b) No, the project will not be completed in 20 weeks

c) No. of stories point short= Total no. of stories scheduled- (Total no. of stories scheduled*SPI)
=200-(200*0.975) = 200-195
=5

d) ACWP for 4 iterations= 83 (summation of person-day for 4 iteration)
% of work completion (at end of 4 iterations) = 78/200=39%
Since progress will be at same rate, we can extrapolate these values to calculate actual cost.
ACWP/% of work completion
= 83/0.39 = 212.82
Therefore, Total cost at completion of 200 story points = 212.82~ 213 in person-day
Total cost to complete 195 story points (at end of iteration 10)=213*0.975= 207.5 person-days