

CHALMERS

EXAMINATION / TENTAMEN

Course code/kurskod	Course name/kursnamn		
DIT046	Requirements & User Experience		
Anonymous code Anonym kod		Examination date Tentamensdatum	Number of pages Antal blad
720		12.1.22	11
			5

* I confirm that I've no mobile or other similar electronic equipment available during the examination.
 Jag intygar att jag inte har mobiltelefon eller annan liknande elektronisk utrustning tillgänglig under
 exminationen.

Solved task Behandlade uppgifter No/nr	Points per task Poäng på uppgiften	Observe: Areas with bold contour are to completed by the teacher. Anmärkning: Rutor inom bred kontur ifylls av lärare.
1	X 13	
2	X 15	
3	X 8	
4	X 9.5	
5	X 10	
6	X 15	
7	X 20	
8	X 4.5	
9	X	
10	X	
11	X	
12		
13		
14		
15		
16		
17		
Bonus poäng		
Total examination points Summa poäng på tentamen	95	

1) Multiple Choice Questions

- | | | | |
|-------|---------|---|--|
| 1. 1) | c, d, f | 3 | proto |
| 1. 2) | c, d, e | 1 | idea-build-as product-mono data |
| 1. 3) | b, d | 2 | INVENT: independent, negotiable, valuable,
sharable, small, durable |
| 1. 4) | a, b, f | 3 | |
| 1. 5) | b, c | 2 | |
| 1. 6) | a, d | 2 | 13 |

2 + 4 + 4 + 4 + 1

Question 2: Short-Answer Questions

1)

- There are ~~are~~ always related problems –
but one should narrow it down, to ~~a~~ scope,
otherwise the customer might get a product that
is overbloated with features and very complex, and
might not be happy with the result, as ~~it~~ contains
features they didn't ask for

- The product should be feasible – i.e. ~~it~~ should
be possible to develop it within the given constraints,
including project duration and scheduled cost. Unbounded
projects are often not feasible.

2)

1. Cost vs. Value

For each requirement, ~~the~~ the expected value and estimated cost ~~is~~ is determined. Then, all of these requirements are inserted into a graph, showing the cost on the x-axis and value on the y-axis. This gives a good overview on how important the requirements are and how to get started.

Usually, the requirements in the "green area" ~~upper~~ (upper left: highly valuable & cheap) are implemented first (2)

2. 100 \$ method

For a given (not too large) set of requirements, stakeholders are asked, how much money they would pay for each requirement, assuming they only have 100 \$. The resulting ranking gives the relative importance of requirements, i.e. the prioritization. (Requirements with highest amount are the most important) (2)

Question 2: Short-Answer Questions II

- 3)
 - Keystroke count ✓
 - Problem Count ✓
 - Measured time (e.g. to complete a task) ✓
 - opinion polls / surveys ✓(4)

4) 1. Discoverability

2

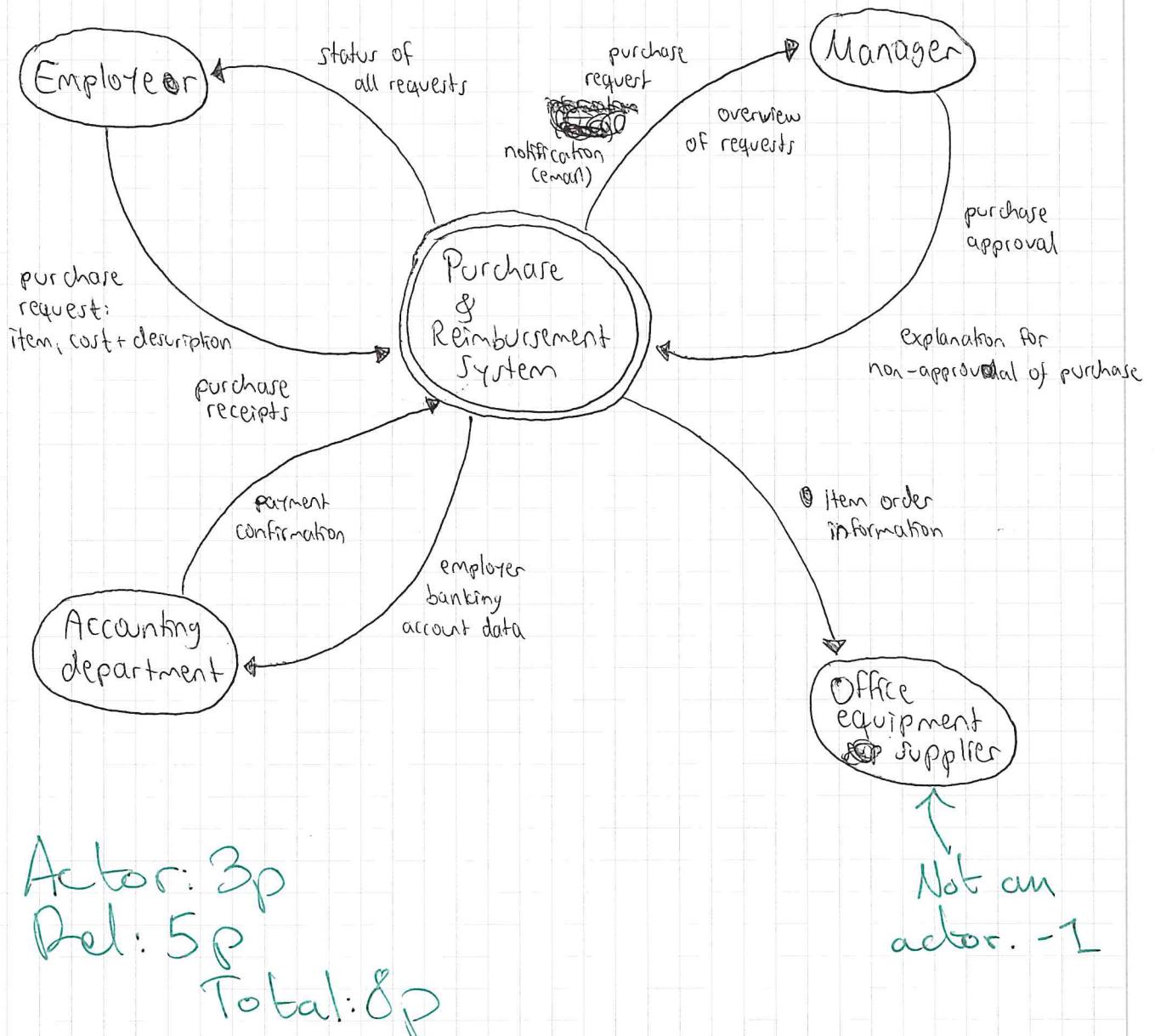
The functions of a product/service should be ~~be~~ easily discoverable. This means it should be clear to the user, what he can do with the ~~product~~ product.

2. Feedback

2

The product/~~service~~ service should continuously inform the user about the current state of the ~~product~~ product, so that the user always knows what is happening (or will happen, e.g. by showing a loading progress bar) and what ~~is~~ the effects of his/her actions are.

5) The blue ocean strategy describes the strategy used when a company creates a new product, for which currently no ~~existing~~ market exists. This means that the product creator & utilizes new demands, thereby not competing with other, existing products or companies.

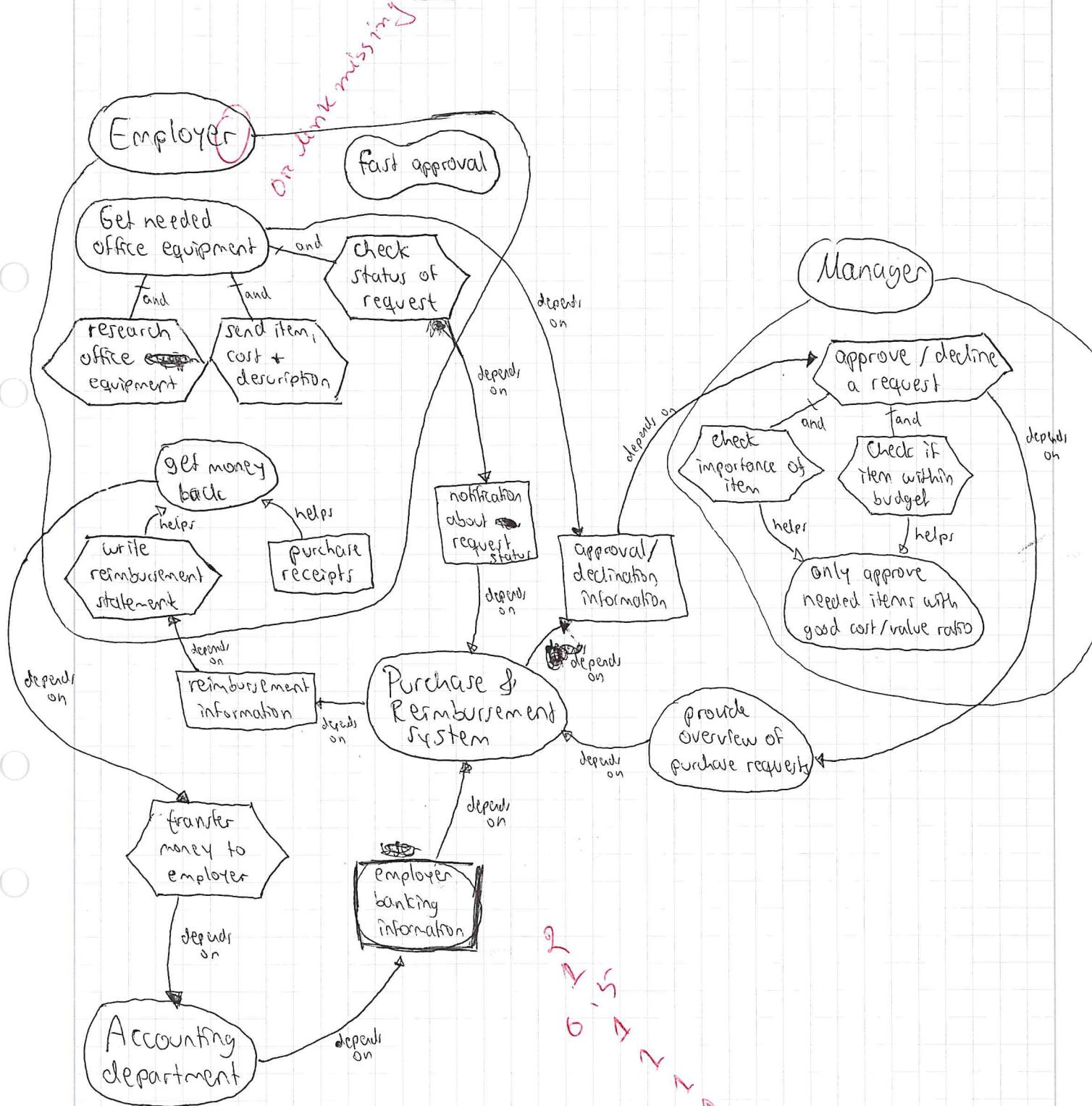
Question 3: Context Diagram

Actor: 3p

Rel: 5p

Total: 8p

Question 4: Goal Model



Question 5: Customer Journey Map

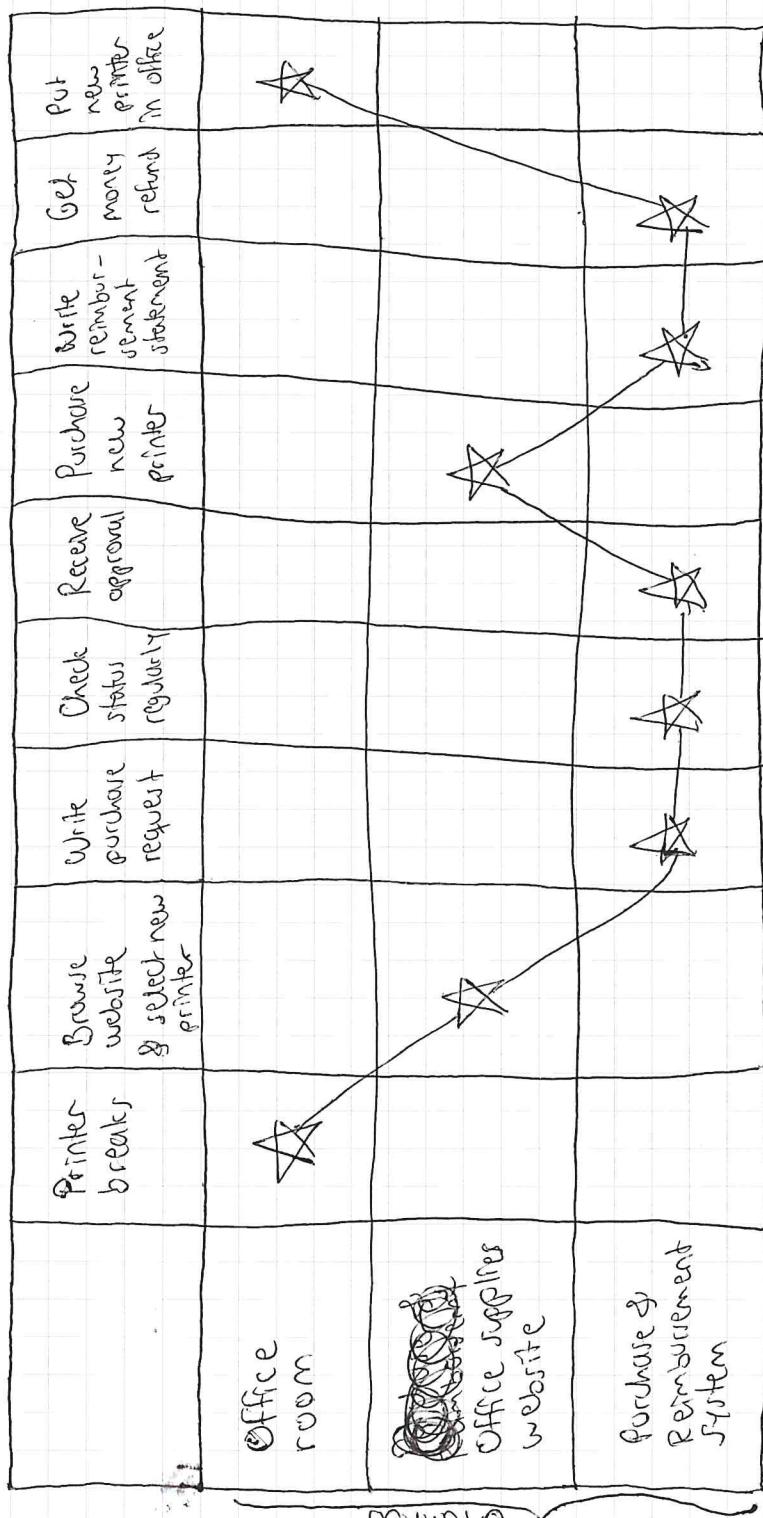
10

My fictive customer is Linnea Nilsson. She is 34 years old and ~~22~~ has been working for 3 years ~~as~~ as a secretary in a law department. As her printer is not working anymore, she wants to order a new one.

C: 2

Ch: 3

T: 5



Question 6: Textual Requirements

User stories:

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- U1) As an employer, I want my request to be approved within 3 working days, so that I can get my needed office item as soon as possible.
- U2) As a manager, I want to approve only requests with a reasonable cost-value-ratio, so that the company expenses don't rise too high.
- U3) As a manager, I want to approve ~~0-10~~ at maximum ~~100~~ ²⁰ requests per day, so that I have enough time to do my other obligations.
- U4) As a manager, I want to ~~be able to see an overview of all~~ ^{losing} recent purchase requests, so that I am ~~at~~ ^{not} ~~losing~~ track of single requests.
- U5) As an employer, I want to get a ~~notification~~ ^{about} about request status updates, so that I can purchase a product directly once I get the approval.

Constraints:

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- (1) The system shall be ready to use by July 2023.
- (2) The software shall work on a computer or phone, ^{for all} ~~all~~ versions of Apple, Windows or Android within the last 3 years.

Domain Assumptions:

- DA 1) We assume ~~that~~ all customers using our system have a stable internet connection.
- DA 2) We assume that the ~~new~~ employers have ~~a~~ sufficient technical understanding to browse and select office items.
- DA 3) We assume the office suppliers provide receipts upon purchase.

Question 6: Textual Requirements II

Non-functional SRS requirements

NFR 1) The reimbursement approvals should be delivered fast, i.e.

(2) ✓ within a maximum of 3 working days.

NFR 2) The ~~goods~~ system should ~~be~~ have an intuitive and easily usable interface, i.e. 90% of users ~~should~~ should be able to use the system without reporting annoyance.

Functional SRS requirements

FR 1) The system shall allow the ~~user~~ employer to create a purchase request.
 This ~~includes~~ information about the item, the cost, and a description.
 should

FR 2) The system shall provide the employer the option to display an overview of all ~~current~~ purchase requests that are currently processed. ~~current~~

FR 3) The system shall give the corresponding manager a notification about a new incoming request of an employer. This notification should include information about the time the request was issued, as well as all information noted in FR 1 (item, cost & description)

FR 4) The system shall let the employer upload receipts as PDFs or scans, when the employer is creating a reimbursement request.

Question 7: UI Design & Patterns

$$2 + 4 + 4 = 10$$

Screen 1: Adding a purchase request (on mobile phone)

2

Create purchase request

* item: Printer

* Estimated Cost: 1, \$

* Item description:

Link to product:

Submit Cancel

Patterns used:

- Input Prompts ("Printer" as example for item)
 - ↳ Helps the user to determine what information is required in the form 2
- Cancellability
 - ↳ So that user can go back and cancel the action, if he/she changes his/her mind 2
- ~~Formatting~~ Structured Format (for cost)
 - ↳ So that the user is only allowed to enter numbers as valid input

Implemented Requirements:

- FR1 (System should allow the employer to create a purchase request. This should include information about the item, the cost and a description) 2
- FR5 (new) The system shall allow the employer to optionally provide a link to the product he would like to purchase. 2

Question 7: UI Design & Patterns II

$$2+4+4=10$$

Screen 2: Overview of requests for manager (on computer)

Overview: Purchase Requests

Employer	Date	Item	Cost	Description	Status
Linnea	11/1/22	Printer	200 \$	~~~~~	Approved
Sven	11/1/22	web-cam	150 \$	~~~~~	Declined
Johanna	12/1/21	TV	300 \$	~~~~~	<input type="button" value="Approve"/> <input type="button" value="Decline"/>
Morvin	12/1/21	Desk	120 \$	~~~~~	<input type="button" value="Approve"/> <input type="button" value="Decline"/>

④ 1 2 ③ 4... 8 ⑤

Patterns used:

2

- Pagination (at bottom) \Rightarrow Useful if there are a lot of requests to process, so that the manager can navigate without losing oversight
- Escape Hatch \Rightarrow ~~So that manager can leave the screen & go back,~~ once he is done processing the requests 2
- Row Stripping \Rightarrow Makes table entries easier readable by providing a contrast between the rows

Implemented Requirements:

- User Story U4: As a manager, I want to be able to see an overview of all recent purchase requests, so that I am not losing track of single requests 2
- FR 6 (new): The system shall allow the manager to approve and decline purchase requests from within the overview 2

Question 8: User Testing Tasks

- as employer
- 1) You ~~are~~ are working in an office and suddenly, your computer monitor breaks. Can ~~you~~ you use the system to request ordering a new monitor for your office? (Screen 1) 1
 - 2) You ~~did~~ did some research on Amazon and found a good monitor for only 120 \$. As additional information, you want to provide your designated ~~manager~~ manager the specific monitor model you want to buy on Amazon. Can you ~~find~~ find a way to add this information? (Screen 1) 0.5
 - 3) You are a ~~boss~~ manager and want to process the purchase request that were incoming today. Can you find information on which employers posted a request today ~~(12.04.2022)~~ (Screen 2) 1
 - 4) As a manager, you now want to approve all ~~open~~ open purchase requests that cost less than 200 \$. Can you find a way to accomplish this from within the overview screen? (Screen 2) 1
 - 5) As a manager, you only want ~~to~~ to see the purchase requests that are ~~not~~ not yet approved or declined. Can you filter the overview to achieve this? (Screen 2) 1

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