Team Name: Salvation Army Data Collection Service
Team Contacts: jijon@mit.edu, benleong@mit.edu, clo@mit.edu, ashah@alum.mit.edu

Accomplishments
- What have you accomplished so far? (1/2 page)

For technical progress, please visit:
http://web.mit.edu/~benleong/www/salvation/progress.html

There have been three notable dates this semester:

On the Graduate Student Volunteer Day (9/21), we did a pilot run of the whole process, issuing home-made barcodes to the shelter guests and scanning them in as they got their meals. We issued questionnaires together with the sign-in sheets to gauge the response, and received replies ranging from strongly positive to supportive to neutral (just a few). None were negative. Some even wanted to keep the laser-printed barcodes that we made (so we let them)! The staff worker also took readily to using our barcode scanning application on the Handspring Visor, after about a minute-long introduction to the device.

On 10/15 we had a team-building dinner to thank our private sponsors, Dell Computer Corp. and Arthur Blank and Co. See http://web.mit.edu/~benleong/www/salvation/sponsors.html for details. We presented our Dell representative, Susan Green, with a plaque, and everyone on the team also got certificates of appreciation from the Salvation Army. Arthur Blank and Co. unfortunately could not make it, so a plaque will be sent to them. They donated 1000 barcode ID cards with the Salvation Army logo printed on the front, and a barcode on the back, which were the real ID cards that would be issued.
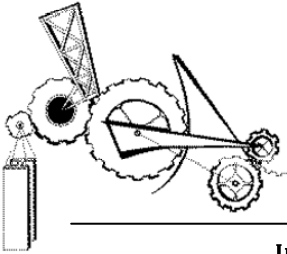
On 10/28, the Salvation Army moved ahead with full deployment of the cards. They issued about 100 ID cards in the first week, and have now issued over 250 to all the drop-in-center clients. Overall, the response has been favorable, although a handful of shelter guests declined to receive the card and were not forced into doing so, of course. So now most of the regular guests have a card and are using it at every meal and service station. The data is accumulating rapidly, and should prove to be useful almost immediately.

- How have you spent the IDEAS money? (simple budget spreadsheet)

Total funds available: $3500
(coming from the 3rd prize of $2000 from the MIT IDEAS competition, and $1500 from the MIT CSF)

Company Name	Product	Unit Cost	Shipping	Taxes	Total
PC Connection	CSM 150 Bar Code Scanner	$ 169.95	$ 7.99	$ 8.50	$ 186.44
Handspring	Reconditioned Visor Deluxe	$ 99.00	$ -	$ -	$ 99.00

Metrowerks	CodeWarrior for PalmOS v8.0	$	119.00	$	10.00	$	5.95	$	134.95
Dell	Optiplex GX240 Desktop	$	1,041.00	$	-	$	-	$	1,041.00
	Total:	$	1,428.95	$	17.99	$	14.45	$	1,461.39

Company Name	Product	Unit Cost		Shipping		Taxes		Total	
Peak Technologies	CSM 150 Bar Code Scanner	$	145.00	$	5.04	$	7.25	$	157.29
Handspring	Reconditioned Visor Edge	$	129.00	$	-	$	6.45	$	135.45
	Total:	$	274.00	$	5.04	$	13.70	$	292.74

Total less taxes: $ 279.04

Company Name	Product	Cost		Shipping		Taxes		Total	
Salvation Army	Catered Food	$	300.00	$	-	$	-	$	300.00
Awards Unlimited	Engraved Plaques	$	30.00	$	-	$	-	$	30.00
	Total:	$	330.00	$	-	$	-	$	330.00

Total less taxes: $ 330.00
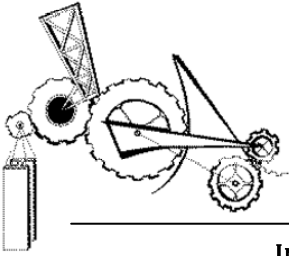
Total to date (11/14/02): $ 2,037.99
Remaining funds: $ 1,462.01

- What do you expect to accomplish with the IDEAS money that remains? (1/2 page)

We have heard reports that the Handspring Visor is going to be made obsolete within a couple years. Although our barcode scanning code is written for a Handspring "Springboard" scanner module, it should be portable to any other line of the SPT PDA scanners produced by Symbol Technologies. We will purchase a new, more robust scanner in time.

In addition we may want to move to a wireless scanning device that immediately logs and retrieves records from a local database, as a second phase to this project. This will cost on the order of $550 for the device (which is the current price of Symbol's SPT 1700, their cheapest wireless scanner). This is also an industrial strength scanner that can withstand 4 foot drops directly to the ground. In addition, a wireless base-station must be set up somewhere in the shelter, which will be expensive. We have not researched the full cost of this option yet.

We also need a way to enter barcodes into the computer during the intake process, without having someone enter them manually (which as error prone as the pencil and paper process). We therefore may need to buy a separate barcode scanner for the computer.

Lastly to be completely professional, we may need to migrate to SQL2000 running on Windows 2000 Server, rather than using postgresql on Linux, which is free. Licenses for both pieces of software must then be bought, but is more expensive than we have money for, unless we get a discount from some of our friends working at Microsoft.

- How will you stay sustainable after the IDEAS money runs out? (1/2 page)
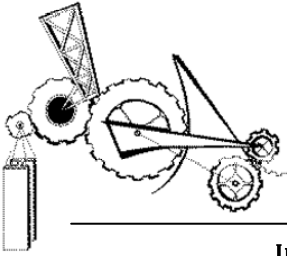
Once the feasibility and usefulness of the project is proven, we should have no trouble securing additional business partnerships and also support from within the shelter-provider community. This coming Thursday (11/21/02), the Salvation Army will be giving a presentation at the Harvard Business School, to ask for ideas and help in formulating a business model that can carry this incipient technology to the next stage. They will possibly seek a commercial developer to make the system into a complete package that can be "drop and go" in other shelters. At that point this will cease to be a volunteer project.

Experiences
- Share a story about your progress that you are particularly proud of. (1/2 page)

The first step in receiving a card at the shelter is to go through what's known as an "intake" process. This can range from being a long interview for first-time shelter stay guests, to just filling in a short form for the drop-in-center guests. On MIT's volunteer day, about 9 graduate students who signed up got to interview between 2-5 shelter guests each. After that day, I think all of us came to a clearer understanding of how secondary this barcode tracking system is, to the primary goal of helping these hurting men and women. We got to hear about how lives had been ruined by mental health problems, by strokes, drug and alcohol addiction, both first and second hand. And we got to hear the overarching vision of the project from the shelter operations director, which was more far-reaching than any of us realized. He hopes to go to Washington next year (as he does every year) but armed with a very credible report based on the data collected in this project, to try and put a stop to the self-serving way that homelessness is being funded and exploited by politicians and lobbyists.

- What are the five most important things you have learned from this experience? (1/2 page)

1) It takes a great deal of patience, sensitivity and compassion (which everyone lacks, initially) in order to understand and relate to the lives of the homeless men and women at the shelter.

2) We learnt that some of the people there are so stuck in a vicious cycle that active intervention is necessary, sometimes even against their will. But however much you want to help, sometimes your hands are tied (as you cannot force someone to take medicine they don't want to take). Their acceptance of the barcode swiping system also falls into
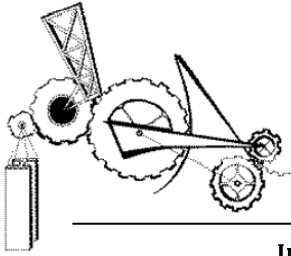
this category somewhat – it is only meant to help, but a well-planned effort has to be spent in dispelling any nervousness and helping everyone to understand its benefits. And still, despite our best efforts, there will never be a 100% success rate, but that's okay.

3) Teamwork is a long term investment which pays off, even though it may feel that involving other people sometimes slows down your progress. Programming is often suited to be a single-person effort, but when you are able to share the work on a program, even if the other person just sits alongside and offers ideas, things actually get moved along much faster. Another presence in the room keeps both programmers motivated, and two heads looking over the code catch bugs much faster than one, perhaps even faster than twice the rate of one. The workload can also be staggered to accommodate different people's busy periods. Not to mention the camaraderie and togetherness that developed.

4) Protecting the privacy of the people we serve is a huge deal. We have been warned of the dangers on multiple fronts, and so we must make sure that our enthusiasm doesn't make us careless. We added a privacy disclaimer and information sheet at the last minute, to ensure that everyone who gets the card knows their rights and has been informed of how we are using the data (internally, and never disclosed except to the state for research purposes). We must also be vigilant in ensuring that the database never falls into the wrong hands, as the public listing of homeless persons will be devastating to their future. We are thus employing several security measures to safeguard the data, even if it makes things more difficult.

5) Sometimes our vision surpassed what we could actually do, both technologically and in terms of time. In the course of the project, we were tempered into being more realistic with our goals and less ambitious about everything.

- What difficulties are you having? What help do you need (monetary and otherwise)? (1/2 page)

None so far – it has gone remarkably well. However, if we plan to establish wireless communications between scanner and database, our needs will increase dramatically, as setting up a wireless base-station in the shelter will be dear in terms of time, talent and money. We may need to enlist the help of more industry partners to do so, but by then, our pilot project should hopefully have proven its feasibility and usefulness to make that help forthcoming.

Alternatively, the next phase may just be turning it over to a company that can put together a polished product. In that case, we will need to write a good business model, and also consider carefully how to prevent profit from excessively motivating the project. As engineers we are probably ill-suited to anticipate these problems.

- How have your project and plans changed from your IDEAS final application? (1/4 page)

We are doing much more work than initially stated in our proposal. We are designing a completely new web user intake form, along with bed and meal tables, and even creating an "administrator" website that allows the intake form to be customized and altered dynamically by staff in the Salvation Army. We may also write a search engine to extract data from the database, so we can spare the Salvation Army the pain of learning command-line SQL to access their data.

Data on a whole host of other services besides beds, laundry, showers, clothing and meals are now being collected. These other services include: clinic visits, mental health counseling, homestart, homeless veteran services, legal services and referrals to external agencies.

Rather than serving as a replacement for ServicePoint, which already tracks the bed usage and enters full client information, we instead are collecting data only from the drop-in-center. Till today, data has never been taken on the usage of the drop-in-center.

- Have you served anyone directly through your project yet? Have there been any unexpected side-benefits associated with your project that have served people? (1/2 page)
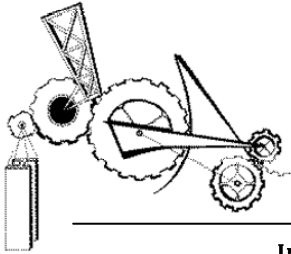
To encourage the acceptance of the ID card, 2 internal benefits are also provided for card-carrying shelter guests (besides the efficiency of swiping to sign in). They are the extension of the 4-night maximum stay to 6 nights, and the provision of a bagged lunch if requested. The 6-night stay is the most popular perk, as the universal sentiment (as we discovered on the volunteer day) was that 4 nights is just too short – since it is unlikely you can find a job or a more permanent place to stay that quickly. 6 is not a whole lot better, but still much appreciated.

Help us improve
- What did the IDEAS Competition do well last year? What are areas where we might improve? (1/2 page)

We were provided with a lot of active feedback, and were able to preemptively address any concerns that the judges anticipated (thanks to Sally Susnowitz and Amy Banzaert!). We also much appreciate the special consideration we were given, to be able to jump into the competition at a late date. Finally the fact that we shared 3rd prize shows that the judges truly took pains to accommodate us by splitting the prize money.

We didn't go through the whole process, so perhaps that's why we don't have much to complain about ☺ IDEAS perhaps needed to publicize more, but you have already done that this year.

Check-in scheduling

Team name___Salvation Army Data Collection Service___

Please rank 5 time slots to meet, 1 being your top choice, 5 being your last choice and submit this form with your progress report.

	M (12/2)	T (12/3)	W (12/4)	R (12/5)	F (12/6)
9-10					
10-11				1	5
11-12				2	
12-1					
1-2				3	
2-3				4	
3-4					
4-5					
5-6					
6-7					